Hanover
Ontario, Canada

PLANNING ADVISORY COMMITTEE AGENDA

Wednesday, September 9, 2026 | 4:00 pm
Saugeen Room / Virtual via zoom https://us02web.zoom.us/j/81043199680

MEMBERS PRESENT

OTHERS PRESENT

DISCLOSURE OF PECUNIARY INTEREST

DELEGATIONS:

DISCUSSIONS & DECISIONS

1. Adoption of July 14, 2026, Regular Meeting Minutes
2. Business arising from Minutes
3. Official Plan Update
4. Development Charges Update
5. Minor Variance Application, A5-26, Knutson Steven Alton----------385 13th Ave
6. Zoning By-Law Amendment Application, Z2-26, Skydev Hanover GP Inc.----------853 Grey Rd 28
7. Site Plan Control Agreement, Skydev Hanover GP Inc.----------853 Grey Rd 28
8. Town of Hanover Municipal Development and Engineering Guidelines
9. Environmental Considerations
10. Correspondence
11. New Business
12. Adjournment

Next Meeting Date: November 10, 2026

Hanover
Ontario, Canada

PLANNING ADVISORY COMMITTEE MINUTES

Tuesday, July 14, 2026 | 4:00 pm
Saugeen Room and Zoom with OWL device

MEMBERS PRESENT	Tim Norwood | Keith Hopkins (Virtual) | Terry Leis
OTHERS PRESENT	Andrew Wilken, Secretary-Treasurer | Sue Paterson, Mayor | Sherri Walden, CAO | April Marshall, Economic Development Manager | Jordan Whitmore, Development Services Supervisor/ Deputy CBO, CBCO | Sandeep Josan, Deputy Secretary Treasurer | Brandon Koebel, Councillor | Carol Hudson (Virtual)
REGRETS	Councillor Harold Fleet | Mark Ebert | Tony Diaco
DISCLOSURE OF PECUNIARY INTEREST	None
DELEGATIONS	Lynn Dentinger, owner of 485 16th Ave | Jerome Weber, owner of 940 8th Ave N | Dana Kieffer, agent of 341076 Grey Rd 28 (Teeswater Concrete 2021 Ltd.)

1. Adoption of March 10, 2026, Regular Meeting Minutes

Moved by TERRY LEIS / Seconded by KEITH HOPKINS

That the minutes of March 10, 2026, regular meeting be approved as printed and circulated.

CARRIED

2. Receipt of May 12, 2026, Regular Meeting Minutes

That the minutes of May 12, 2026, regular meeting be received.

3. Business arising from Minutes

The Secretary-Treasurer provided updates regarding items previously discussed by the Committee. Zoning By-law Amendment Application Z1-26 for Datac Investments was approved by Council to permit a carpentry shop and ancillary showroom. Minor Variance Application for Drew and Myles Johnson was approved by the Committee of Adjustment following discussion. A building permit application has since been submitted, no appeals were received, and construction has commenced. A Site Plan Control Agreement for the proposed pharmacy development at the southwest corner of 24th Avenue and 14th Street has been finalized. Construction is anticipated to begin in summer 2026.

4. Official Plan Update

The Secretary-Treasurer advised the Committee that an Official Plan Update Report was presented to Council on July 13, 2026. Due to the scale and significance of the lands being added to the Town of Hanover through the boundary adjustment, and the associated planning considerations, the Official Plan Update is proposed to proceed in two phases: a short-term phase and a long-term phase. This phased approach will allow the Town to address planning, infrastructure, and growth management matters related to the boundary expansion in a coordinated and comprehensive manner.

The Secretary-Treasurer further advised that the report outlines the project timeline, including policy review and updates over the summer, preparation of a draft Official Plan for review in late summer or early fall, public engagement sessions and an open house in late 2026 and early 2027, and a final statutory public meeting, Council adoption, and submission to Grey County for approval in early 2027.

5. Development Charges Study Update

The Secretary-Treasurer advised that work on the Development Charges Study has resumed following completion of the boundary adjustment. The Town has re-engaged Watson & Associates to complete the background work required for the study update. Results are anticipated to be presented to Council fall 2026.

6. Minor Variance Application, A4-26, Lynn Dentinger---------- 485 16th Ave

The Secretary-Treasurer provided an overview of Minor Variance Application A4-26, advising that the owner is proposing to expand the existing legal non-conforming residential use within the Corridor Commercial (C2) Zone by constructing a 436sq. ft. attached garage. The proposed garage complies with the Zoning By-law requirements for size, setbacks, and height.

Moved by KEITH HOPKINS / Seconded by TERRY LEIS

That the Planning Advisory Committee recommend to Council and Committee of Adjustment that they have no objections to the approval of Minor Variance Application No. A4-26.

CARRIED

7. Consent Application, B2-26, Jerome & Joanne Weber----------940 8th Ave N

The Secretary-Treasurer explained that the subject lands are situated on the northern side of the Town of Hanover in a predominantly residential area. The land measures 0.80 acres and contains one house and one accessory structure. It is zoned Residential Type 1 (R1) under the Town of Hanover's Comprehensive Zoning By-law. The applicant intends to propose the severance of the existing house and accessory structures to create a new lot. The applicant intends to sell his existing house and construct a new dwelling on severed lands.

Jamie McCarthy from the Town of Hanover Public Works Department provided comments indicating that the newly severed lot will require water and sanitary services, and that drainage and grading must not impact neighbouring properties.

The comments from Saugeen Valley Conservation Authority (SVCA) have been received and stated that the proposed development on the new lot requires SVCA permit as the property falls under SVCA regulated area. No development, filling, or grading will be permitted within 6 meters to the flooding hazard limit.

A comment was received from a member of the public expressing concerns about drainage issues on their property that they attribute to the construction of a single detached dwelling several years ago. The individual is concerned that the proposed development may result in similar drainage problems or increased issues with the existing. The Secretary-Treasurer advised the Committee that the proposed dwelling would not impact the neighbouring property as civil design will be required as part of the building permit application for lot grading.

The owner provided information regarding the proposed severance and that it would require a service easement on the severed lands, which is intended to serve the retained lands for existing sanitary infrastructure. Following discussion, the Committee deferred application to a future meeting to allow for additional information to be provided regarding the service easement and an updated plan/survey to clearly identify the servicing implication.

Moved by TERRY LEIS / Seconded by KEITH HOPKINS

The Planning Advisory Committee recommends that Council and the Committee of Adjustment defer consent application B2-26 until further information is provided.

CARRIED

8. Consent Application, B3-26, Teeswater Concrete 2021 Ltd----------341076 Grey Rd 28

The Secretary-Treasurer reviewed a Consent Application proposing the creation of a 2.4 ha vacant lot, which is designated and zoned for industrial uses. The proposal was further explained by Dana Keiffer, Cobide Engineering (agent of application). The proposed retained parcel would contain the existing Teeswater Concrete Ready-Mix plant and would be 8.1 ha in total area. The property would require a Local Official Plan Amendment, as the size of the proposed lot does not comply with the Town of Hanover Local Official Plan. The retained lands will continue to support the existing Teeswater Concrete Ready-Mix operation, while the severed parcel will provide an opportunity for future industrial development within a designated industrial area.

Moved by KEITH HOPKINS / Seconded by TERRY LEIS

That the Planning Advisory Committee recommend to Council and Committee of Adjustment that they have no objections to the approval of Consent Application No. B3-26.

CARRIED

9. Local Official Plan Amendment Application, LOPA 7-26, Teeswater Concrete 2021 Ltd----------341076 Grey Rd 28

The Secretary-Treasurer reviewed an Official Plan Amendment Application proposing the creation of a 2.4 ha vacant lot, which is designated and zoned for industrial uses. The proposal was further explained by Dana Keiffer, Cobide Engineering (agent of application). The proposed retained parcel would contain the existing Teeswater Concrete Ready-Mix plant and would be 8.1 ha in total area. The property would require a Local Official Plan Amendment, as the size of the proposed lot does not comply with the Town of Hanover Local Official Plan. The application seeks relief from a site-specific policy applying to the lands under Section D.7.4.11, which requires a minimum lot area of 8 hectares for development purposes. As the proposed severed lot is 2.4 ha, an amendment to the Local Official Plan is required. The retained land will continue to support the existing Teeswater Concrete Ready-Mix operation, while the severed parcel will provide an opportunity for future industrial development within a designated industrial area.

The Secretary-Treasurer advised the Committee that, since the contingent applications had been received, approval of the Local Official Plan Amendment (LOPA) would be included as a condition of consent.

Moved by TERRY LEIS / Seconded by KEITH HOPKINS

That the Planning Advisory Committee recommend to Council that they have no objections to the approval of Official Plan Amendment Application No. LOPA 7-26.

CARRIED

10. Environmental Considerations

The Secretary-Treasurer advised the Committee that Consent Application B3-26 requires a Site Plan Agreement, through which the environmental considerations would be addressed.

11. Correspondence

None

12. New Business

The Secretary-Treasurer provided an update to the Committee regarding ongoing building and development occurring throughout the Town.

13. Adjournment

Moved by KEITH HOPKINS
That the meeting now be adjourned at 4:44 pm

_____
Chair, Tim Norwood

_____
Secretary-Treasurer, Andrew Wilken

(FOR OFFICE USE ONLY)
FILE NUMBER A - 5 - 26
Date Received: Aug 26, 2026

TOWN OF HANOVER
APPLICATION FOR MINOR VARIANCE
Under Section 45 of the Ontario Planning Act, R.S.O. 1990, as amended

The undersigned applies to the Committee of Adjustment of the Town of Hanover for relief from the Applicable Zoning By-Law.

NOTE: This application consists of Part "A", Part "B" and Part "C". To avoid delays, the information on each part must be complete and accurate. Incomplete applications will be returned. All applications must be signed. Metric units should be used. **PLEASE PRINT.**

Mail 3 copies of this form to: TOWN OF HANOVER
341 10th Street
HANOVER, Ontario
N4N 1P5
(519) 364-2780

FEE: $ 1095+400= 1495 Payable to the **TOWN OF HANOVER**

PART "A" (Page 1 of 2)

1. NAME AND ADDRESS

APPLICANT/OWNER'S NAME AND ADDRESS	AGENT/SOLICITOR'S NAME AND ADDRESS
Name: Knutson Steven Alton	Name:
Mailing Address: 385 13th Ave	Mailing Address:
Town/City/Province: Hanover/ Ontario	Town/City/Province:
Postal Code: N4N 2W2	Postal Code:
Telephone Number: [redacted]	Telephone Number: ( ) -
Facsimile Number ( ) -	Facsimile Number ( ) -

All Correspondence Should Be Sent To: ☐ APPLICANT OR ☐ AGENT/SOLICITOR

2. LOCATION OF PROPERTY

Municipality	Municipal Address
Hanover	385 13th Ave

Registered Plan Number	Lot(s)	Reference Plan Number	Part(s)	Parcel Number
827	18			

Geographic or Former Township	Concession Number	Lot Number (s)
Bentinck		

Assessment Roll Number: 4229 01000206200

3. Date subject land was acquired by current owner:
2016

4. Date existing buildings or structures on subject land were constructed:
1900

5. Name and Address of Mortgagees, holders of charges or other encumbrances in respect of the subject property:

6. CURRENT OFFICIAL PLAN DESIGNATION OF SUBJECT PROPERTY
Residential

7. CURRENT ZONING OF SUBJECT PROPERTY
Residential Type 1 Zone (R1)

8. Nature and extent of the relief from the Zoning By-Law applied for:
USE EXTENSION

9. Reason(s) why the proposed use cannot comply with the provisions of the Zoning By-Law:
To vary the provisions for maximum gross building area to allow for the construction of a new 875 sq. ft. detached accessory garage.

	Bylaw	Proposed
Max building area	600 sq. ft.	1035 sq. ft. (new garage + existing shed of 160 sq. ft)

PART "A" (Page 2 of 2)

10. Is the property subject of a current application under the Act: (Please indicate File Number and status of application)

Consent ☑ No ☐ Yes File Number _____ Plan of Subdivision ☑ No ☐ Yes File Number _____ ☐ Other _____ File Number _____

11. Has the subject property ever been the subject of a previous application for relief from the Zoning By-Law?
☑ No ☐ Yes (please indicate File Number and status of application.)

12. DESCRIPTION OF PROPERTY AS SHOWN ON SKETCH

	EXISTING	BY-LAW PROVISIONS	PROPOSED
FRONTAGE (m.)	20.11 m	14m	No Change
DEPTH (m.)	60.35 m	-	No Change
AREA (m.)	1213.64 sq. m.	425 sq. m	No Change
WIDTH OF STREET			

13. USE OF PROPERTY

EXISTING USE Residential	Length of time Existing Uses of subject land have continued: 126 years
PROPOSED USE Residential	

14. EXISTING USES OF ABUTTING PROPERTIES:

Have you contacted your neighbours regarding this application? ☑ Yes ☐ No _____

15. ZONING PROVISIONS

	EXISTING	BY-LAW PROVISIONS	PROPOSED
TYPE OF BUILDING/STRUCTURE	Single detached dwel	Single detached dwel	exist.house & det. garage
SETBACK FROM FRONT LOT LINE	12.7 ft	19.6 ft	33 ft
SETBACK FROM REAR LOT LINE	130 ft	-	125 ft
SETBACK FROM SIDE LOT LINE	2.4 ft	3.2 ft	2.4 ft
SETBACK FROM SIDE LOT LINE	3.2 ft	3.2 ft	3.2 ft
HEIGHT OF BUILDING/STRUCTURE	one and half storey	16.4 ft	16.4 ft
DIMENSIONS OR FLOOR AREA	1812 sq ft	801 sq ft	1492+875+160= 2367 sq ft
PARKING SPACES	2	2	2
LOT COVERAGE	15.9%	40 %	19.33 %

16. SERVICING - ROAD ACCESS

COMMON NAME OF ROAD			EXISTING	PROPOSED
a. OWNERSHIP		Municipality	✓	✓
		Crown	☐	☐
		Ministry of Transportation	☐	☐
		County	☐	☐
		Private	☐	☐
b. MAINTENANCE	i.	Municipality	✓	✓
		Unassumed Municipal Road	☐	☐
		Ministry of Transportation	☐	☐
		County	☐	☐
		Private or Right of Way	☐	☐
		None	☐	☐
	ii.	Seasonal	☐	☐
		Year-Round	☐	☐

c. WATER ACCESS: If the proposed access is by water, please describe the nearest public boat launching and car parking facility.

How far is it from the property, and what facilities are there?

Please also show on key plan portion of the sketch map.

d. OTHER ACCESS (Specify)

17. SERVICING - WATER

Water Supplied By:		EXISTING	PROPOSED
	Municipality	✓	✓
	Local Services Board	☐	☐
	Private: Well, Lake or Communal (Specify)	☐	☐

18. SERVICING - SEWAGE

Sewage System Supplied By:		EXISTING	PROPOSED
	Municipality	✓	✓
	Local Services Board	☐	☐
	Private: Septic, Pit, Chemical (Specify)	☐	☐

19. SERVICING - STORM DRAINAGE

Storm Drainage Supplied By:		EXISTING	PROPOSED
	Municipality	✓	✓
	Sewers	☐	☐
	Ditches	☐	☐
	Swales	☐	☐
	Other: (Specify)	☐	☐

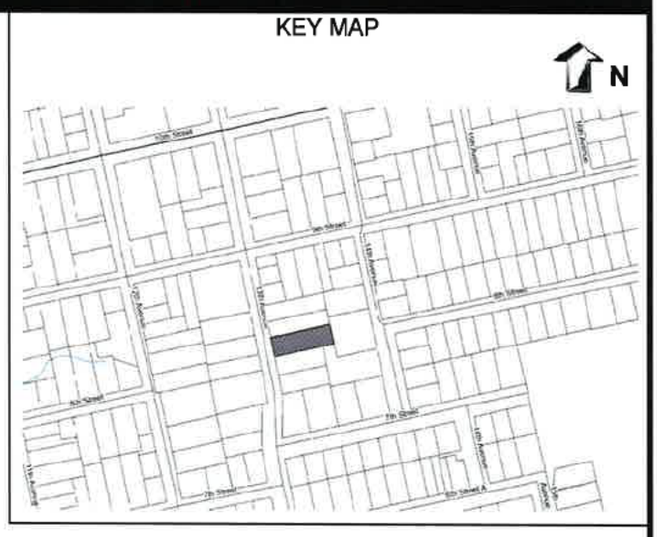
20. OTHER DOCUMENTS (as specified below)

_____ _____

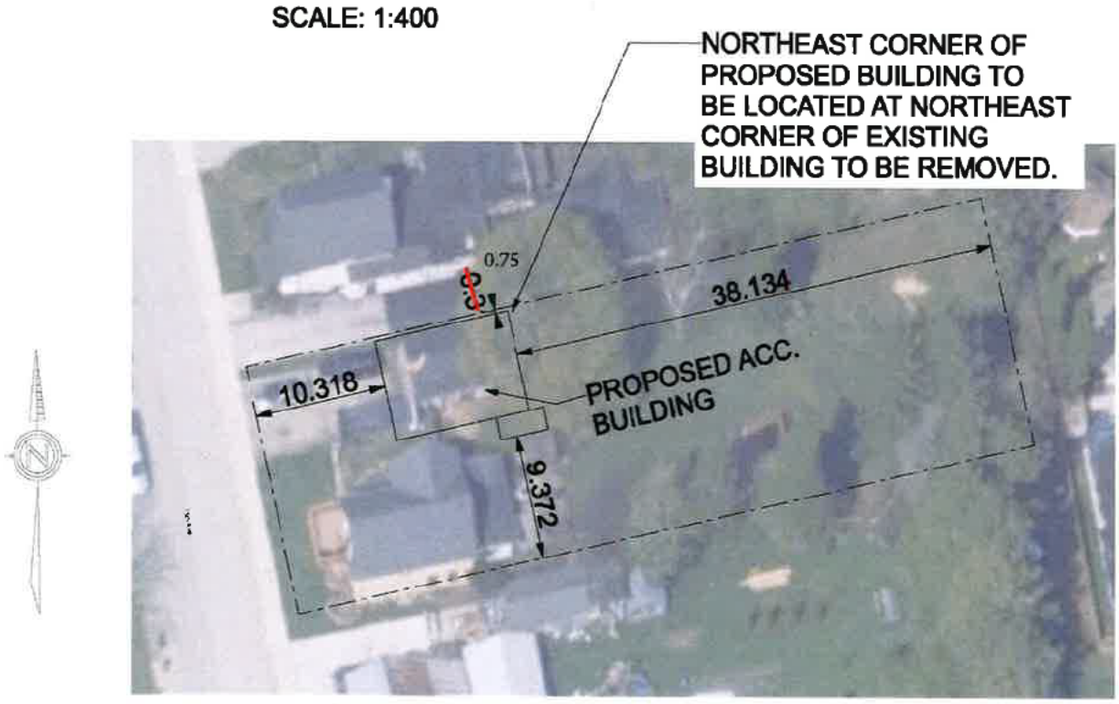
PART "B"

Sketch Accompanying Application
See Information Below denoting requirements.

KEY MAP



SCALE: 1:400



DIMENSION ARE IN METRES AND CAN BE CONVERTED INTO FEET BY MULTIPLYING BY 3.281

The above sketch should include the following:

i. The boundaries and dimensions of the subject land.
ii. The location, size and type of all existing and proposed buildings and structures on the subject land, indicating the distance of the buildings or structures from the front yard lot line, rear yard lot line and the side yard lot lines.
iii. The approximate location of all natural and artificial features on the subject land and on land that is adjacent to the subject land that, in the opinion of the applicant, may affect the application. Examples include buildings, railways, roads, watercourses, drainage ditches, river or stream banks, wetlands, wooded areas, wells and septic tanks.
iv. The current uses on land that is adjacent to the subject land.
v. The location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public travelled road, a private road or a right of way.
vi. If access to the subject land is by water only, the location of the parking and docking facilities to be used.
vii. The location and nature of any easement affecting the subject land.

PART "C"

AFFIDAVIT *(This affidavit must be signed in the presence of a Commissioner)*

Dated at the Town of Hanover
this 20th day of August, 2026.
I/We, STEVEN ALTON KNUTSON. of the Town of
Hanover in the County/District/Regional Municipality of Grey,
do solemnly declare that all the statements contained in this application are true, and I/We make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the **CANADA EVIDENCE ACT**.

DECLARED before me at the
Town of HANOVER
In the COUNTY
of GREY
this 20 day of AUGUST, 20 26.

[redacted]

A Co[redacted]

Vicki McDonald, a Commissioner, etc.,
County of Grey, while Clerk of the
Corporation of the Town of Hanover.

AUTHORIZATION FOR AGENT/SOLICITOR TO ACT FOR OWNER

If this application is made by an agent or solicitor on behalf of the landowner, the owner's written authorization must be included. Without such authorization, the application cannot be considered. If surface and subsurface rights are held by different parties, both signatures are required.

I/We _____, Owner(s) of the lands as described in this application and known as _____ of the _____ of _____ in the _____ of _____ do hereby authorize _____ _____ to act as my Agent/Solicitor for this application.

_____ Signature of Owner(s) _____ Date

_____ Signature of Owner(s) _____ Date

Personal information on this form is collected under the authority of the Planning Act, RSO 1990, Chapter P. 13, as amended, and will be used to assess applications for Minor Variances to the Zoning By-Law for the Town of Hanover. Questions about this collection should be directed to the Chief Building Official/Planning Administrator, Town of Hanover, 341 10th Street, Hanover, Ontario N4N 1P5 Phone (519) 364-2780.

(FOR OFFICE USE ONLY)

FILE NO. OPA - _____ - ___

FILE NO. Z - _____ - ___

Date Received: _____

TOWN OF HANOVER
APPLICATION FOR OFFICIAL PLAN AND/OR ZONING BY-LAW AMENDMENT

Under Sec. 22 (4) of the Ontario Planning Act, R.S.O. 1990, as amended

The undersigned applies to the Planning Advisory Committee of the Town of Hanover for an amendment of the Official Plan and/or Zoning By-Law.

NOTE: This application consists of Part "A", Part "B" and Part "C". To avoid delays, the information on each part must be complete and accurate. Incomplete applications will be returned. All applications must be signed. Metric units should be used. **PLEASE PRINT.**

Mail 3 copies of this form to: TOWN OF HANOVER
341 10th Street
HANOVER, Ontario
N4N 1P5
(519) 364-2780

FEE: $ 2415.00 Payable to the **TOWN OF HANOVER**

PART "A" (Page 1 of 3)

1. NAME AND ADDRESS

APPLICANT/OWNER'S NAME AND ADDRESS	AGENT/~~SOLICITOR'S~~ NAME AND ADDRESS
Name: SkyDev Hanover LP C/o Brandon Almeida	Name: Brandon Flewwelling (GSP Group Inc.)
Mailing Address: 5 Douglas Street, Suite 301	Mailing Address: 72 Victoria Street South, Suite 201
Town/City/Province: Guelph, Ontario	Town/City/Province: Kitchener, Ontario
Postal Code: N1H 2S8	Postal Code: N2G 4Y9
Telephone Number: [redacted]	Telephone Number: [redacted]
Facsimile Number ( ) -	Facsimile Number ( ) -

All Correspondence Should Be Sent To: ☑ APPLICANT OR ☑ AGENT/SOLICITOR

2. LOCATION OF PROPERTY

Municipality Hanover | Municipal Address 741 24th Avenue and 853 Grey Road 28

741 24th Avenue - Bentinck Concession 1 North of Durham Road Part Lot 11, Registered Plan 16R11949 Parts 2 and 3;
853 Grey Road 28 - Bentinck Concession 1 North of Durham Road Part Lots 11 and 12

Assessment Roll Number: **4229**04000329000 ; 422904000330000

3. Name and Address of Mortgagees, holders of charges or other encumbrances in respect of the subject property:

N/A

4. DESCRIPTION OF PROPERTY AS SHOWN ON SKETCH

	EXISTING	PROPOSED
FRONTAGE (m.)	67.25 m and 97.65 m (164.90 m)	No change
DEPTH (m.)	Varies	No change
AREA (m.)	~75,087.28 sq.m	No change

5. DOES THE AMENDMENT COVER THE ENTIRE PROPERTY? ☑ YES ☐ NO (just a "portion" of the property)
DESCRIPTION OF AREA TO BE AMENDED, if only a "portion" of the property.

	EXISTING	PROPOSED
FRONTAGE (m.)		
DEPTH (m.)		
AREA (m.)		

6. CURRENT OFFICIAL PLAN DESIGNATION OF SUBJECT PROPERTY

	EXISTING	PROPOSED
	Large Format Commercial, Residential with Regulated Area overlay, and Significant Woodlands	No change, conforms

7. CURRENT ZONING OF SUBJECT PROPERTY

	EXISTING	PROPOSED
	Large Format Commercial (C3), Future Development (D), and Hazard (H) with Regulated Area overlay	See PJR.

8. USE OF PROPERTY

EXISTING USE Vacant

PROPOSED USE Residential (townhouses and multiple dwelling (apartment)).

Have you contacted your neighbours regarding this application? ☐ Yes ☑ No

PART "A" (Page 2 of 3)

9. DESCRIPTION OF ALL BUILDINGS

	EXISTING	PROPOSED
TYPE OF BUILDING/STRUCTURE	N/A	1 apt bldg; 88 towns, 10,000 sf CRU
HEIGHT OF BUILDING/STRUCTURE		6-storeys (apt); 2-storeys (towns); 1 storey CRU
% LOT COVERAGE		TBD
# OF PARKING SPACES		TBD
# OF LOADING SPACES		TBD
NUMBER OF FLOORS		6-storeys apts; 2-storeys towns
TOTAL FLOOR AREA		TBD
GROUND FLOOR AREA (excl.basement)		TBD

10. WHAT IS THE PURPOSE OF AND REASONS FOR THE PROPOSED AMENDMENT(S)?

See cover letter and Planning Justification Report for a detailed description.

11. DOES THE PROPOSED OFFICIAL PLAN AMENDMENT:

Change a Policy in the Official Plan ☐ Yes ☑ No ☐ Unknown	Replace a Policy in the Official Plan ☐ Yes ☑ No ☐ Unknown	Delete a Policy in the Official Plan ☐ Yes ☑ No ☐ Unknown
Add a Policy in the Official Plan ☐ Yes ☑ No ☐ Unknown	Add or Change a Designation in the Official Plan ☐ Yes ☑ No ☐ Unknown	

12. IF APPLICABLE AND KNOWN AT TIME OF APPLICATION, PLEASE PROVIDE THE FOLLOWING:

Section Number(s) of Policy to be changed: N/A

Text of the Proposed New Policy: N/A

New Designation Name: N/A

13. IS THE SUBJECT LAND OR ANY LAND WITHIN 120 METRES OF THE SUBJECT LAND, THE SUBJECT OF AN APPLICATION FOR ANY OF THE FOLLOWING?

Official Plan Amendment ☐ Yes ☑ No	Zoning Amendment ☐ Yes ☑ No	Minor Variance ☐ Yes ☑ No
Plan of Subdivision ☐ Yes ☑ No	Consent (Severance) ☐ Yes ☑ No	Site Plan Control ☐ Yes ☑ No

14. IF APPLICABLE, PLEASE PROVIDE THE FOLLOWING INFORMATION:

File Number of Application:	Approval Authority:
Lands Subject to Application:	Purpose of Application:
Status of Application:	Effect on the Current Application for Amendment:

15. SERVICING - ROAD ACCESS

COMMON NAME OF ROAD: 24th Avenue / Grey County Road 28

			EXISTING	PROPOSED
a. OWNERSHIP		Municipality		✓
		Crown		
		Ministry of Transportation		
		County	✓	✓
		Private		
b. MAINTENANCE	i.	Municipality	✓	✓
		Unassumed Municipal Road		
		Ministry of Transportation		
		County	✓	✓
		Private or Right of Way		
		None		
	ii.	Seasonal		
		Year-Round	✓	✓

c. WATER ACCESS:

If the proposed access is by water, please describe the nearest public boat launching and car parking facility.
N/A

How far is it from the property, and what facilities are there?
N/A

Please also show on key plan portion of the sketch map.

d. OTHER ACCESS (Specify) N/A

16. SERVICING - WATER

		EXISTING	PROPOSED
Water Supplied By:	Municipality		✓
	Local Services Board		
	Private: Well, Lake or Communal (Specify)		

17. SERVICING - SEWAGE

		EXISTING	PROPOSED
Sewage System Supplied By:	Municipality		✓
	Local Services Board		
	Private: Septic, Pit, Chemical (Specify)		

PART "A" (Page 3 of 3)

18. SERVICING - STORM DRAINAGE		EXISTING	PROPOSED
Storm Drainage Supplied By:	Municipality	☐	✓
	Sewers	☐	☐
	Ditches	☐	☐
	Swales	☐	☐
	Other: (Specify) SWM Pond, see FSR.	☐	✓

19. OTHER DOCUMENTS / INFORMATION (e.g. Environmental Impacts Study, Hydrogeological Report, Traffic Study, Market Area Study, Aggregate License Report, Stormwater Management Report, etc.)

See PJR for detailed list of other documents /information, such as plans, reports, and studies.

See PJR for an overview of the proposed Zoning By-law Amendment.

PART "B"

Sketch Accompanying Application
See Information Below denoting requirements.

KEY MAP

N

Please see complete submission package

The above sketch should include the following:

i. The boundaries and dimensions of the subject land.
ii. The location and nature of any easement or restrictive covenants affecting the subject land.
iii. The current uses on land that is adjacent and abutting to the subject land. (e.g. residential, agricultural, extractive, commercial, industrial, recreational, institutional)
iv. The location, size and type of all existing and proposed buildings and structures on the subject land, indicating the distance of the buildings or structures from the front yard lot line, rear yard lot line and the side yard lot lines.
v. The approximate location of all natural and artificial features on the subject land and on land that is adjacent or abutting to the subject land that, in the opinion of the applicant, may affect the application. Examples include buildings, structures, fencing, parking and loading areas, railways, bridges, watercourses, drainage ditches, river or stream banks, wetlands, flood plains, wet areas, wooded areas, slopes, gravel pits, wells and septic systems.
vi. The location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public travelled road, a private road or a right of way.
vii. If access to the subject land is by water only, the location of the parking and docking facilities to be used.
viii. The dimensions of area of amendment.

PART "C"

AFFIDAVIT *(This affidavit must be signed in the presence of a Commissioner)*

Dated at the City of Guelph

this 20 day of July, 20 26.

I/We, SkyDev Hanover LP of the City of Guelph in the County/District/Regional Municipality of County of Wellington, do solemnly declare that all the statements contained in this application are true, and I/We make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the **CANADA EVIDENCE ACT**.

DECLARED before me at the }
City of Guelph }
in the County }
of Wellington }
this 20 day of July, 20 26 }

[redacted]

[redacted]

A Commissioner, etc.

[redacted]

AUTHORIZATION FOR AGENT/SOLICITOR TO ACT FOR OWNER

If this application is made by an agent or solicitor on behalf of the landowner, the owner's written authorization must be included. Without such authorization, the application cannot be considered. If surface and subsurface rights are held by different parties, both signatures are required.

I/We SkyDev Hanover LP, Owner(s) of the lands as described in this application and known as 741 24th Ave & Lot 11/12, Con 1 of the Geographic Twp of Bentinck in the Town of Hanover do hereby authorize GSP Group Inc. to act as my Agent/Solicitor for this application.

[redacted]

Signature of Owner(s)

7/20/2026
Date

Signature of Owner(s)

Date

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Planning Justification Report

853 Grey Road 28, Hanover

Application for Zoning By-law Amendment

Town of Hanover, Grey County

August 2026

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1. Introduction

1.1 Background & Subject Application

GSP Group has prepared this Planning Justification Report ("Report") in support of a Zoning By-law Amendment application ("Subject Application") on behalf of SkDev Hanover LP ("SkyDev") for the property municipally addressed as 853 Grey Road 28 in the Town of Hanover in the County of Grey ("Site"). The Site is located on the east side of the Town of Hanover and is generally located east of 24th Avenue/Grey Road 28, north of 17th Street, and west of the Hanover Community Trail.

Within the County of Grey Official Plan ("County Official Plan"), the Site is located within the Primary Settlement Area of Hanover on Schedule A – Land Use Types and contains Significant Woodlands along the southern edge and eastern portion of the Site, as indicated on Appendix B – Constraint Mapping. Within the Town of Hanover Official Plan ("Official Plan"), the Site is designated Large Format Commercial and Residential with the Regulated Area overlay on Schedule A – Land Use and Significant Woodlands on Schedule B – Constraints. Within the Town of Hanover Comprehensive Zoning By-law 2912-15 ("Zoning By-law"), the Site is zoned Large Format Commercial (C3), Future Development (D), and Hazard (H) with portions of the south and east sides of the Site containing the Regulated Area overlay.

The Site is proposed to be developed with a six-storey, 87-unit apartment building with 140 parking spaces as a first phase. Future phases will include a townhouse block, including 20 townhouse buildings consisting of a mixture of 4 and 6 units in each building, for a total of 90 townhouse dwelling units. A Commercial Block located at 741 24th Avenue is located to the southwestern portion of the Site. The Commercial Block will be developed in the future.

With respect to planning approvals, the existing zoning on the Site does not permit residential uses. A Zoning By-law Amendment is required to rezone portions of the Site from Large Format Commercial (C3) and Future Development (D) to Large Format Commercial (C3-Site-Specific) and Residential Type Four (R4) to permit the construction of the proposed townhouses and apartment dwelling, with site-specific provisions relating to building height for the apartment dwelling. The requested Zoning By-law Amendment is detailed in Section 6.1 of this Report. With respect to the broader approvals process, it is anticipated that a Site Plan Application will be submitted for the apartment block and can advance generally concurrently alongside the Zoning By-law Amendment.

1.1 Report Content and Structure

The purpose of this Report is to describe the Subject Application and demonstrate that the Proposed Development and requested Land Use Approvals are consistent with provincial policy and conform with county and local planning policy. The report is structured as follows:

- **Section 2** describes the Site and the surrounding context.
- **Section 3** details the Proposed Development.
- **Section 4** provides a detailed explanation of how the Subject Application is consistent with the 2024 Provincial Planning Statement; and conforms with (or does not conflict with) the County's and Town's Official Plans.
- **Section 5** provides a review of the Urban Design considerations in support of the Proposed Development.
- **Section 6** summarizes the findings and recommendations of the other studies and reports submitted in support of the Proposed Development.
- **Section 7** provides the specifics of the Zoning By-law Amendment application required to enable the Proposed Development.
- **Section 8** provides public consultation considerations for the Subject Application.
- **Section 9** concludes this Planning Justification Report by summarizing the key points established in support of the Proposed Development.

2. Subject Property & Context

2.1 Location and Description of Subject Property

The Site is located on the east side of 24th Avenue/Grey Road 28, adjacent to the rear of the single-detached dwellings fronting 17th Street and west of the Hanover Community Trail. The Site is currently comprised of two parcels, being 741 24th Avenue and 853 Grey Road 28. The Site is approximately 75,155.44 square metres (7.52 hectares) in area and has approximately 164.90 metres of interrupted frontage along 24th Avenue and has a connection to the terminus of 25th Avenue at the south of the Site, which is proposed to be extended through the Proposed Development and form part of the Site's internal circulation system. There is an approximate 605.84 square metre parcel, generally located east of the 19th Street terminus on the east side of 24th Avenue, which was conveyed to the County of Grey which is anticipated to facilitate a secondary access point to the Site (**Figure 1**).

2.2 Existing Conditions

In its current state, based on 2025 aerial imagery, the parcel located at 741 24th Avenue is currently vacant, with evidence of site works based on demolition of previous use, while the parcel located at 853 Grey Road 28 has evidence of agricultural usage along with the presence of Significant Woodlands along the eastern edge of the Site.

2.3 Existing Vegetation and Topography

According to mapping provided by the Ontario Ministry of Natural Resources, the majority of the Site is relatively flat, with an approximate 21-metre slope on the eastern portion of the Site downward and parallel to the Hanover Community Trail. The eastern portion of the Site is abundantly vegetated, with the presence of Significant Woodlands on the eastern side of the Site, along with tree rows separating the two parcels at 741 24th Avenue and 853 Grey Road 28, respectively. Additionally, there are limited trees and other low herbaceous cover spread throughout the Site. These trees are primarily mature or near mature.

2.4 Surrounding Context and Analysis

The Site is identified as Bentink Concession One North of Dundas Road Part Lot 11; Registered Plan 16R11949 Parts Two and Three (741 24th Avenue) and Bentinck Concession One North of Dundas Road Part Lots; 11 and 12 (853 Grey Road 28). The Site is surrounded by low density residential uses to the south and to the west, as well as

Significant Woodlands and agricultural uses to the east and Significant Woodlands, limited low density residential uses, and agricultural uses to the north (**Figure 2**).

The surrounding neighbourhood to the south and to the west of 24th Avenue predominantly consists of 1-storey single- and semi-detached dwellings, which are newly constructed or being constructed. These dwellings predominantly utilize a modern suburban vernacular/neo-traditional suburban architecture style. Building materials include a naturalized rock/brick veneer which utilize a neutral colour palette, such as grey, white, brown, and beige, with siding being use sparingly on gable walls. A limited number of dwellings utilize siding on the façade, with the rock/brick veneer being utilized around the base of the dwelling to frame windows and entryways. These dwellings generally include single or double street-facing garages, and many contain raised or at-grade covered porches. Roofs are generally a mixture of gable and hip and utilize dark-coloured asphalt shingles, such as brown, grey, and black, with a mixture of neutral- and contrasting-coloured flashing to minimize or emphasize rooflines, respectively. Similarly, window trim, soffit, and fascia materials utilize a mixture of neutral- and contrasting-coloured metals or plastic to minimize or emphasize architectural details.

The surrounding neighbourhood features a suburban grid-like layout, with intermixed woodlands and natural features, reflecting the eastern portion of Hanover's location in a Significant Woodland. There are generally no sidewalks in the neighbourhood to the south and to the west of 24th Avenue.

Further south and west of this low-density residential subdivision are a mixture of residential, commercial, and employment uses, with intermixed institutional uses. South of the Site, along 10th Street, primarily consists of big-box retail, such as Walmart Supercentre, Canadian Tire, and an Independent Grocer, along with strip plazas and standalone restaurants, commercial, and convenience retail uses. These uses near 10th Street, along with those to the west, follow a more rigid-like grid structure toward Hanover's core. There are minimal parks that service the Site, with the closest one being located to the west of the Site at the Hanover Rotary Dog Park, which is located near the northern terminus of 16th Avenue, and contains one large soccer field, one small soccer field, and open space, as well as a connection to the Hanover Community Trail system. The next closest park is the Legion "Bob Steet" Park, which is located generally east of 17th Avenue and south of 14th Street. The Site is not serviced by transit.

2.5 Immediate Site Context

NORTH: Immediately to the north of the Site is a large single-detached dwelling on an estate lot, along with dense vegetation forming part of the Significant

Woodlands. Further north of this use is the Hanover Community Trail, along with additional Significant Woodlands, the Saugeen River, and agricultural lands (**Figure North**).

EAST: Immediately to the east of the Site is the Hanover Community Trail, along with dense vegetation forming part of the Significant Woodlands, along with the Saugeen River and other agricultural uses (**Figure East**).

SOUTH: Immediately to the south of the Site are single-detached dwellings fronting 17th Street, 26th Street, 16th Street, and 25th Avenue, as well as dense vegetation east of Grey Road 28 and south of 17th Street (**Figure South**).

WEST: Immediately to the west of the Site is 24th Avenue, and west of 24th Avenue is the low-density residential subdivision containing single- and semi-detached dwellings, along with areas of dense vegetation forming part of the Significant Woodlands (**Figure West**).

Figure North - View From the Site Looking North

Figure East - View From the Site Looking East

Figure South – View From the Site Looking South

Figure West - View From the Site Looking West

Figure 2 – Site Location

GSP group

Site Location
Source: Google Earth Aerial Imagery (2026)

Figure 1

Figure 3 – Surrounding Context

GSP group

Surrounding Context
Source: Google Earth Aerial Imagery (2026)

Figure 2

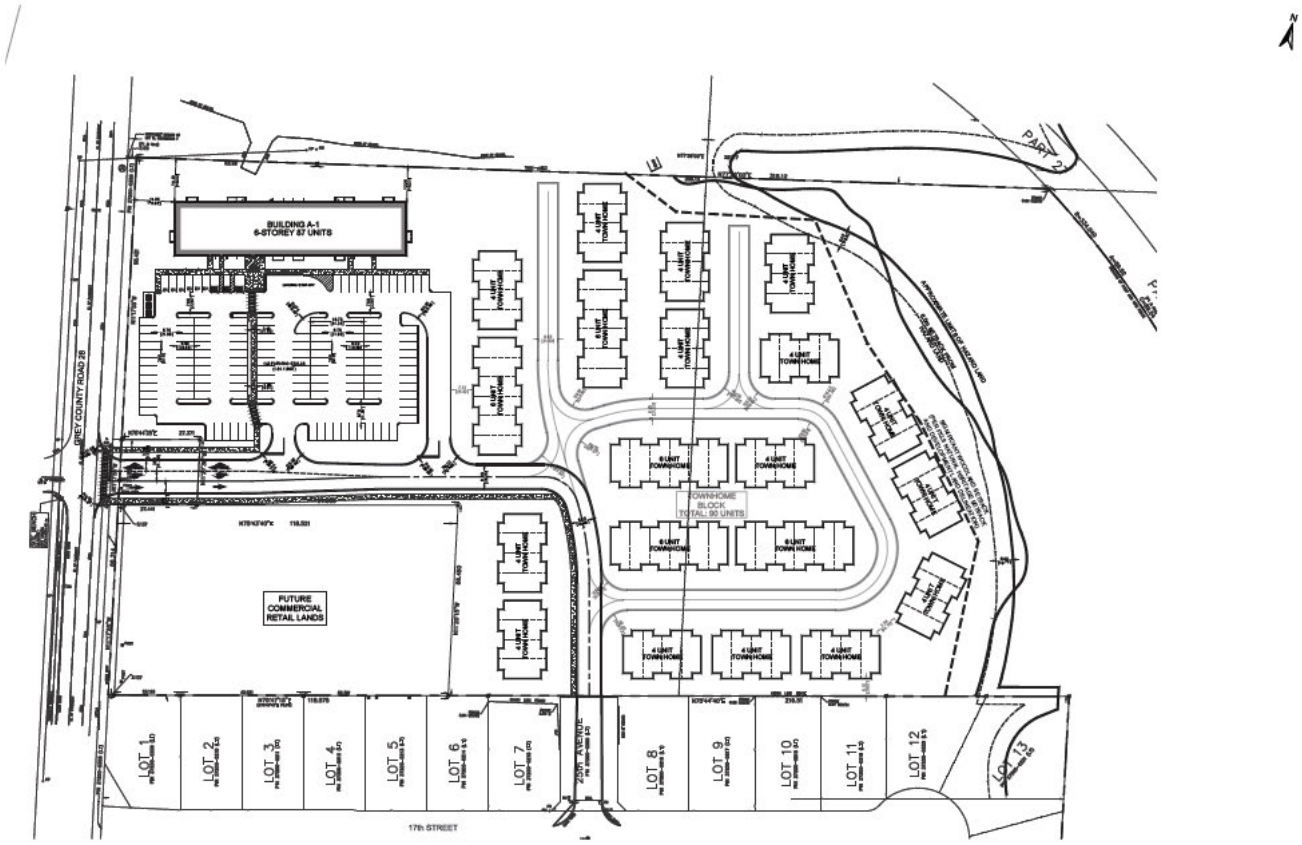
3. Proposed Development

3.1 Proposed Development

The Proposed Development consists of a six-storey, 87-unit apartment dwelling located on the northwest corner of the Site which includes 140 parking spaces; on the east side of the property a townhouse block consisting of 20 townhouse buildings (ranging in 4 to 6 units per block), for a total of 90 townhouse dwelling units is proposed. The southwestern corner of the Site is reserved for future commercial land uses. An internal circulation route is proposed through the Site which aligns with 19th Street to the west of the Site and to 25th Avenue at the south of the Site. The overall development is to be phased with construction of the apartment block to be included in Phase 1 and the Townhouse Development to following in a second phase.

The Site Plan is shown on **Figure 3** and the preliminary elevations for the proposed apartment building are shown on **Figure 4** below. The Zoning By-law amendment is specific only to 853 Grey Road 28, the C3 Zoning on the parcel knowns as 741 24 Avenue is not proposed to change.

Figure 4 – Preliminary Site Plan



GSP group

Preliminary Site Plan
Source: KWA Site Development Consulting Inc. (2026)

Figure 3

Figure 5 – Preliminary Building Elevations

GSP group

Preliminary Building Elevations
Source: Glos Arch + Eng (Glos Associates Inc.) (2026)

Figure 4

4. Policy Overview and Analysis

This section provides an overview of the applicable Provincial, County, and local land use planning policy framework that applies to the Site and provides a policy analysis for how the Proposed Development and its Subject Application align with these policies. Regulatory and policy documents included in this section are the *Planning Act*, Provincial Planning Statement, Grey County Official Plan, Town of Hanover Official Plan, and Town of Hanover Comprehensive Zoning By-law 2912-15.

4.1 Planning Act

The Ontario Planning Act, R.S.O 1990, c. P.13, (the "*Planning Act*") serves as the overarching legislation that guides land use planning in Ontario. The *Planning Act* sets out regulatory procedures and processes associated with planning applications. The *Planning Act* further establishes land use controls, delegated authorities, and ensures appeal rights and public notice requirements. The *Planning Act* also seeks to integrate matters of provincial interest by requiring all decisions to be consistent with the Provincial Planning Statement.

4.2 Provincial Planning Statement (2024)

The Provincial Planning Statement ("PPS") came into effect on October 20, 2024, and replaces the Provincial Policy Statement 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019. The PPS is issued under section 3 of the *Planning Act* and requires that all planning matters be consistent with the PPS. The PPS serves as a foundation for regulating development and use of land while supporting the provincial target of building 1.5 million homes by the year 2031. The PPS provides direction on planning issues including increasing housing supply; making land available for development; planning for appropriate infrastructure; and protecting the natural environment. Within the framework of the PPS, the Site is located within a settlement area (the Town of Hanover's Primary Settlement Area).

4.2.1 Planning for People and Homes

Section 2.1 of the PPS outlines the policies for Planning for People and Homes. Policy 2.1.6 states that planning authorities should support the achievement of complete communities by: accommodating an appropriate range and mix of land uses, housing options, transportation options with multimodal access, […], recreation, parks and open space, and other uses to meet long-term needs (a).

<u>Consistency:</u> The Proposed Development includes a range and mix of land uses, including a six-storey apartment building containing 87 dwelling units and 20 townhouse dwelling blocks containing a total of 90 dwelling units for a total of 177 dwelling units at full build-out. Additionally, the Proposed Development seeks to maintain existing Large Format Commercial permissions, which will allow for future commercial uses on the Site. These land uses contribute to a range and mix of land uses which support the achievement of complete communities and the meeting of long-term needs.

4.2.2 Housing

Section 2.2 of the PPS outlines the policies for Housing. Policy 2.2.1 of the PPS states that planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected needs of current and future residents of the regional market area by: permitting and facilitating (b): all housing options required to meet the social, health, economic and well-being requirements of current and future residents, including additional needs housing and needs arising from demographic changes and employment opportunities (1); and all types of residential intensification, including […], development and introduction of new housing options within previously developed areas […] (2); promoting densities for new housing which efficiently use land, resources, infrastructure, and public service facilities, and support the use of active transportation (c).

<u>Consistency:</u> The Proposed Development provides an appropriate range and mix of housing, including a six-storey apartment building containing 87 dwelling units and 20 townhouse dwelling blocks containing a total of 90 dwelling units for a total of 117 dwelling units at full build-out. This range and mix of housing intensifies the Site with a net increase of 177 dwelling units, which will efficiently use land, resources, infrastructure, public service facilities, and its built form will support the utilization of active transportation.

4.2.3 General Policies for Settlement Areas

Section 2.3.1 of the PPS outlines the General Policies for Settlement Areas. Policy 2.3.1.1 of the PPS states that settlement areas shall be the focus of growth and development. Policy 2.3.1.2 states that land use patterns within settlement areas should be based on densities and a mix of land uses which: efficiently use land and resources (a); optimize existing and planned infrastructure and public service facilities (b); support active transportation (c); are transit-supportive, as appropriate (d).

<u>Consistency:</u> The Site is located within the Primary Settlement Area of Hanover, which is the focus of growth and development. The Proposed Development includes

the construction of 177 dwelling units and efficiently uses land and resources, optimizes existing and planned infrastructure and public service facilities, supports active transportation through its built form, and has the potential to be transit-supportive if such transit was to exist. The Proposed Development maintains a block for Large Format Commercial, which will further contribute a range and mix of land uses.

Policy 2.3.1.3 of the PPS states that planning authorities shall support general intensification and redevelopment to support the achievement of complete communities, including by planning for a range and mix of housing options and prioritizing planning and investment in the necessary infrastructure and public service facilities.

<u>Consistency:</u> *The Proposed Development intensifies the Site by adding 177 dwelling units in the form of a six-storey apartment building and 90 townhouse dwellings, providing a range and mix of housing opportunities. A commercial block is provided and overall, the Proposed Development will contribute towards the achievement of a complete community.*

4.2.4 Energy Conservation, Air Quality and Climate Change

Section 2.9 of the PPS outlines the policies for Energy Conservation, Air Quality and Climate Change. Policy 2.9.1 states that planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that: support the achievement of compact, transit-supportive, and complete communities (a).

<u>Consistency:</u> *The Proposed Development provides medium- and high-density housing forms, as defined in the Town of Hanover Comprehensive Zoning By-law 2912-15, which reduces provides a dense, compact form of housing which reduces greenhouse gas emissions compared to other low-density forms of housing. The Proposed Development is directly adjacent to 24th Avenue, which can accommodate transit. A Large Format Commercial block is maintained on the Site, which will inevitably provide a mix of uses on the Site at full build-out.*

4.2.5 Natural Heritage

Section 4.1 of the PPS outlines the policies for Natural Heritage. Policy 4.1.1 states that natural heritage features and areas shall be protected for the long-term. Policy 4.1.5 states that development and site alteration shall not be permitted in: significant woodlands in Ecoregions 6E […] (b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Policy 4.1.8 states that

development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies […], 4.1.5, […] unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

<u>Consistency:</u> *The Site contains a Significant Woodland, including the SVCA's associated Regulation Limit, on the east side of the Site. The Proposed Development respects the required six-metre setback from the Hazard Lands identified on the Site and provides for a 15m Significant Woodlands setback. The Proposed Development will not encroach within the 15m buffer area for any site activities, and it is therefore anticipated that it will not cause any negative impacts on the natural features or the ecological functions of these lands.*

4.2.6 Natural Hazards

Section 5.2 of the PPS provides policy direction for development within and adjacent to natural hazards. Policy 5.2.2 states that development should be directed to areas outside of b) hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

Consistency: Through pre-consultation the Saugeen Valley Conservation Authority noted that:

> *SVCA hazard mapping indicates 853 Grey Rd 28 is subject to an erosion hazard on the east side of the property (see attached SVCA map); associated with the Saugeen River Valley Slope. The hazard mapping for both the Town of Hanover Official plan and Comprehensive Zoning By-law are not entirely in-line with the hazard limit delineated by the SVCA. SVCA staff will recommend the Hazard Zone on the property be amended to match the hazard mapping of the SVCA as part of a proposed zoning by-law amendment for the development.*

As noted, the Site contains hazard lands along the eastern property limits. No development is proposed in this area and a 6.0m buffer to the limits of the hazard land has also been provided.

4.2.7 Provincial Planning Statement Summary

Overall, the Proposed Development is consistent with the PPS as it intensifies the Site, the Site is located within Hanover's Primary Settlement Area and includes a mix of housing options which efficiently use land, resources, and existing infrastructure. The Proposed Development supports the achievement of complete communities by contemplating a six-

storey apartment building as well as 20 townhouse blocks, for a total of 177 dwelling units, while also providing a mix of uses through the maintenance of the Large Format Commercial block. The built form promotes active transportation and is transit-supportive in principle. The Proposed Development respects all required setbacks associated with the Hazard Lands and Significant Woodlands where it is not anticipated to have any negative impacts on their natural features or ecological functions.

4.3 Grey County Official Plan

The Grey County Official Plan ("County Official Plan") was adopted by Grey County Council on October 25, 2018, was approved by the Province of Ontario on June 6, 2019, and came into effect on June 7, 2019. The County Official Plan was consolidated on May 6, 2025, and includes Official Plan Amendments 1-7, 10-12, 14, 18, 20, and 23. The vision of the County Official Plan looks *"to be the place where people feel genuinely at home and naturally inspired – enjoying an exceptional blend of active healthy living and economic opportunity."*

Within the County Official Plan, the Site is designated as being within the Primary Settlement Area of Hanover on Schedule A – Land Use Types (**Figure 5**) and is further designated as Significant Woodlands on Appendix B – Constraint Mapping (**Figure 6**).

Figure 6 – Grey County Official Plan Schedule A – Land Use Types

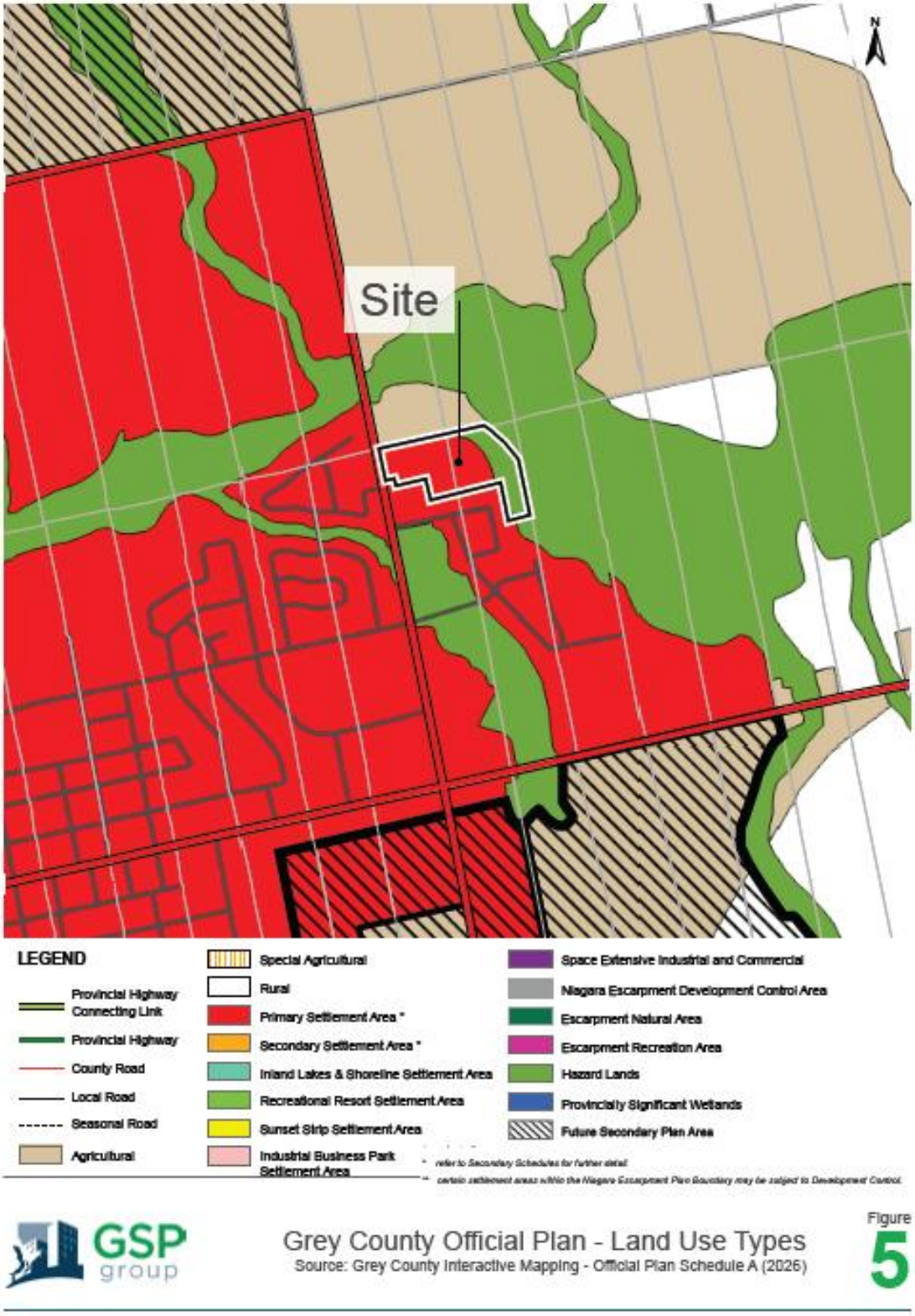
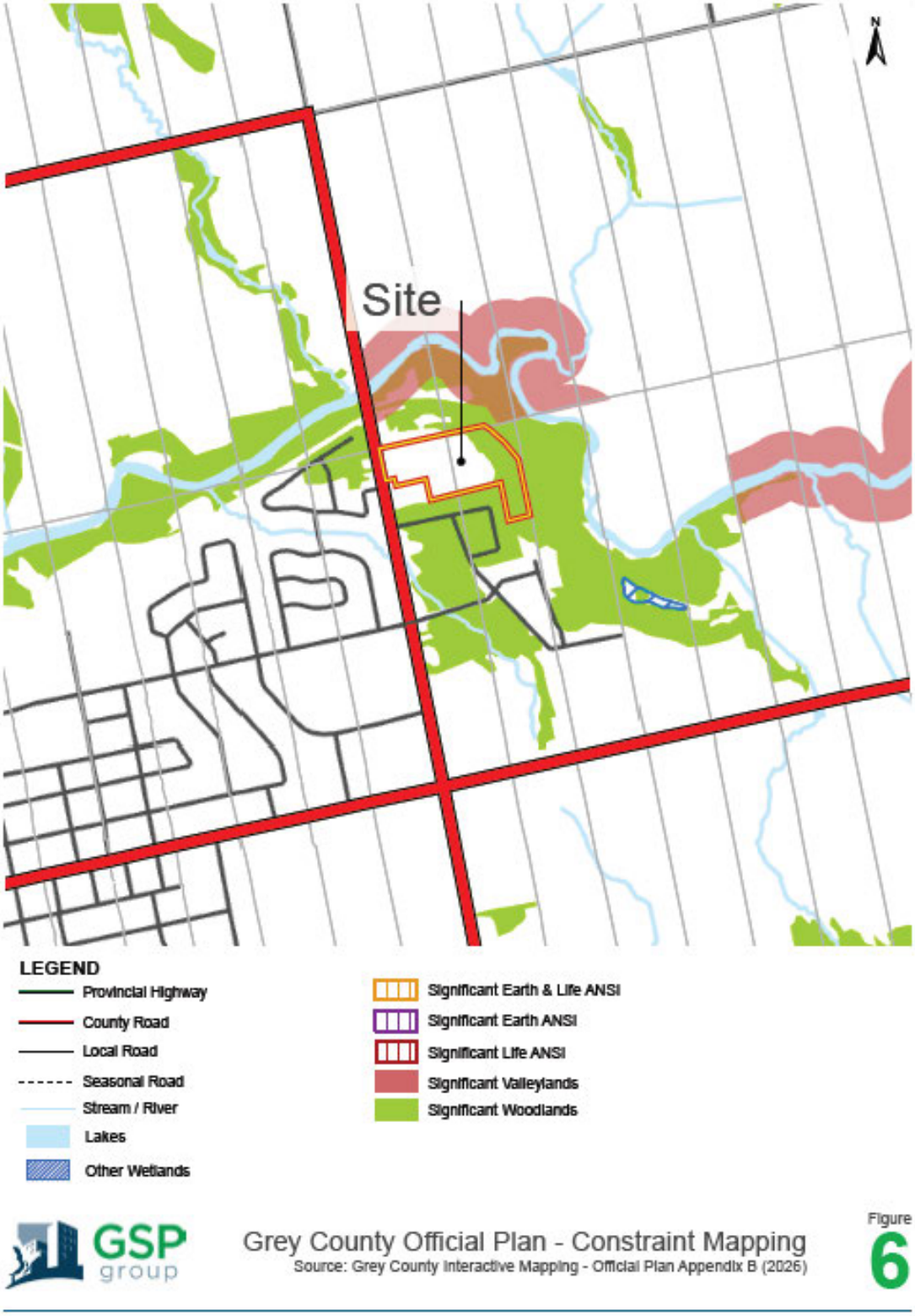


Figure 7 - Grey County Official Plan Appendix B – Constraint Mapping



4.3.1 General Policies Affecting Settlement Area Land Use Types

Section 3.4 of the County Official Plan outlines the General Policies Affecting Settlement Area Land Use Types. Policy 3.4.1 states that in order to support achieving the growth allocation targets established in Table 2, this Plan sets an overall intensification target for new growth at 15%. Policy 3.4.6 states that development within growth areas should occur adjacent to the existing built-up area and will have a compact form, mix of uses, and densities that allow for the efficient use of land, infrastructure, and public service facilities.

<u>Conformity:</u> *The Site is currently vacant, and the Proposed Development intensifies the Site by adding 177 dwelling units, which contributes to the County's intensification target for new growth of 15 percent. The Site is located within the Town of Hanover's Primary Settlement Area, within the existing built-up area, and is compact in form, proposing a six-storey apartment building and 20 townhouse blocks, which efficiently uses land, infrastructure, and public service facilities. A Large Format Commercial block is maintained, which will provide for a mix of uses on the Site at full build-out.*

Policy 3.4.14 states that it is a policy of this plan that development of communities occur with a wide range of housing types, including […], townhouse, and apartment units, be provided, […], range of alternative locations, forms and densities of housing, […], to meet a variety of housing needs. Policy 3.4.1.15 states that development within the built-up areas may be of higher density to achieve the policy directives of this Plan but should be compatible with adjacent residential areas.

<u>Conformity:</u> *The Proposed Development contributes medium- and high-density housing options, inclusive of an apartment building and 20 townhouse blocks, which contributes to a range of housing types in the broader neighbourhood and contributes to the variety of housing needs in the Town of Hanover. The Proposed Development has been designed to ensure compatibility with adjacent residential areas, including by siting the apartment building at the north of the Site, away from the residential subdivision to the south and west, while siting the townhouses on the east of the Site, which are more compatible in form to the adjacent low-density residential uses. The Large Format Commercial block, along with the apartment building's surface parking lot, will further buffer the apartment building from the adjacent low-density residential uses.*

4.3.2 Primary Settlement Areas

Section 3.5 of the County Official Plan outlines the policies for Primary Settlement Areas. Policy 3.5.3 states that this Official Plan promotes the development of Primary Settlement Area land use types for a full range of residential [and] commercial […] land uses. These areas will be the focus of the majority of growth within the County.

<u>Conformity:</u> *The Site is located within the Primary Settlement Area of the Town of Hanover, which is a focus area for growth within the County, and includes the construction of a six-storey apartment building and 20 townhouse blocks. Additionally, a Large Format Commercial block is maintained, which will ensure a mix of uses are provided on the Site at full build-out.*

Policy 3.5.5 of the County Official Plan states that within Primary Settlement Areas a minimum residential density of 25 units per net hectare will be achieved for new residential development. […]. The County encourages new development to be of a form and density which is supportive of future transit needs in accordance with the Province's Transit Supportive Guidelines, or to develop similar municipal guidelines that achieve the same objective. Policy 3.5.6 of the County Official Plan states that intensification opportunities are strongly encouraged within Primary Settlement Areas. Municipalities must develop and adopt intensification strategies to ensure that the residential intensification targets identified in Section 3.4.1 of the Official Plan are met. Intensification strategies in Primary Settlement Areas shall enable: the development of vacant and/or underutilized lots within previously developed areas (c). Policy 3.5.7 of the County Official Plan states that the County recognizes the need for additional apartment buildings […] within Primary Settlement Areas. […]. In most cases apartment buildings will far exceed the County's 25 units per hectare minimum density requirement. Density policies within this Plan shall not limit such development from exceeding those minimum requirements.

<u>Conformity:</u> *The Proposed Development contemplates a residential density of 23.35 units per net hectare, which is in keeping with the County Official Plan's minimum requirement of 25 units per net hectare. The Proposed Development, being medium- and high-density residential uses, is provided at a form and density which supports future transit needs. The Proposed Development intensifies the vacant Site by adding 177 dwelling units.*

4.3.3 Significant Woodlands

Section 7.4 of the County Official Plan outlines the policies for Significant Woodlands. Policy 7.4.1 states that no development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an environmental impact

study, as per Section 7.11 of this Plan, that there will be no negative impacts on the natural features or their ecological functions.

<u>Conformity:</u> *The Site contains a Significant Woodland along the eastern property limits. In addition the Site also includes SVCA Regulated land associated with erosion hazards caused by the Saugeen River. The Proposed Development respects the required Significant Woodlands setback and has a minimum 6.0m buffer to the edge of the hazard limits. As such, no development is proposed within the hazard lands or within the significant woodlands. A Development Limit has been clearly established on all plans and the implementing zoning will reflect the same limits, it is therefore anticipated that no negative impacts will occur to the significant woodlands.*

4.3.4 General Transportation Policies

Section 8.2 of the County Official Plan outlines the General Transportation Policies. Policy 8.2(i) states that this plan promotes compact built-forms, […], and mixes of uses to facilitate active transportation, shortened commutes, decreased traffic congestion, and/or the use of transit where it either exists or has the potential to be developed.

<u>Conformity:</u> *The Proposed Development is provided in a compact built form, including townhouses and an apartment dwelling, which are defined as medium- and high-density residential uses in the Town of Hanover Comprehensive Zoning By-law 2912-15, respectively. Additionally, the Proposed Development maintains a Large Format Commercial block, which provides a mix of uses on the Site to facilitate active transportation, shortened commutes, decreased traffic congestion, and the use of transit where it has the potential to be developed along 24th Avenue.*

Policy 8.2(j) states that new developments will be designed to ensure safe access for vehicles and emergency vehicles. […]. New residential developments greater than 150 units will need to have two or more full accesses. Access to new residential developments will be considered through the phasing of the development however the above thresholds will be used to consider the design and phasing of the accesses.

<u>Conformity:</u> *The Proposed Development contemplates 177 dwelling units, requiring a minimum of two full accesses. An access is proposed along 24th Avenue directly across from the intersection at 19th Street, and the second access is proposed at the south of the Site through a connection to 25th Avenue. The Proposed Development includes an internal circulation route which promotes efficient transportation of vehicles, pedestrians, and active transportation*

*modes throughout the Site. The private driveway facilitating access to 24th Avenue and the extension of 25th Avenue will be constructed with Phase 1 of the development. This will provide connection consistent with the original subdivision planning for the lands to the south and a single access along 24th Avenue as required by the County (see **Figure 7**).*

Policy 8.2(k) states that new development should be designed to integrate with the complete transportation system by ensuring that roads, sidewalks, and trails are designed to accommodate pedestrian links, cyclists, and transit links. […]. New development will also consider future vehicle and pedestrian connections to adjacent lands. New development will also be designed to accommodate adequate snow storage.

<u>Conformity:</u> *The Proposed Development has been designed to integrate with the complete transportation system and all roads and sidewalks will be designed and constructed in accordance with the Town of Hanover Comprehensive Zoning By-law 2912-15 and the applicable street cross sections provided by the Town or County, which will be confirmed during the Site Plan Approval process.*

4.3.5 Active Transportation

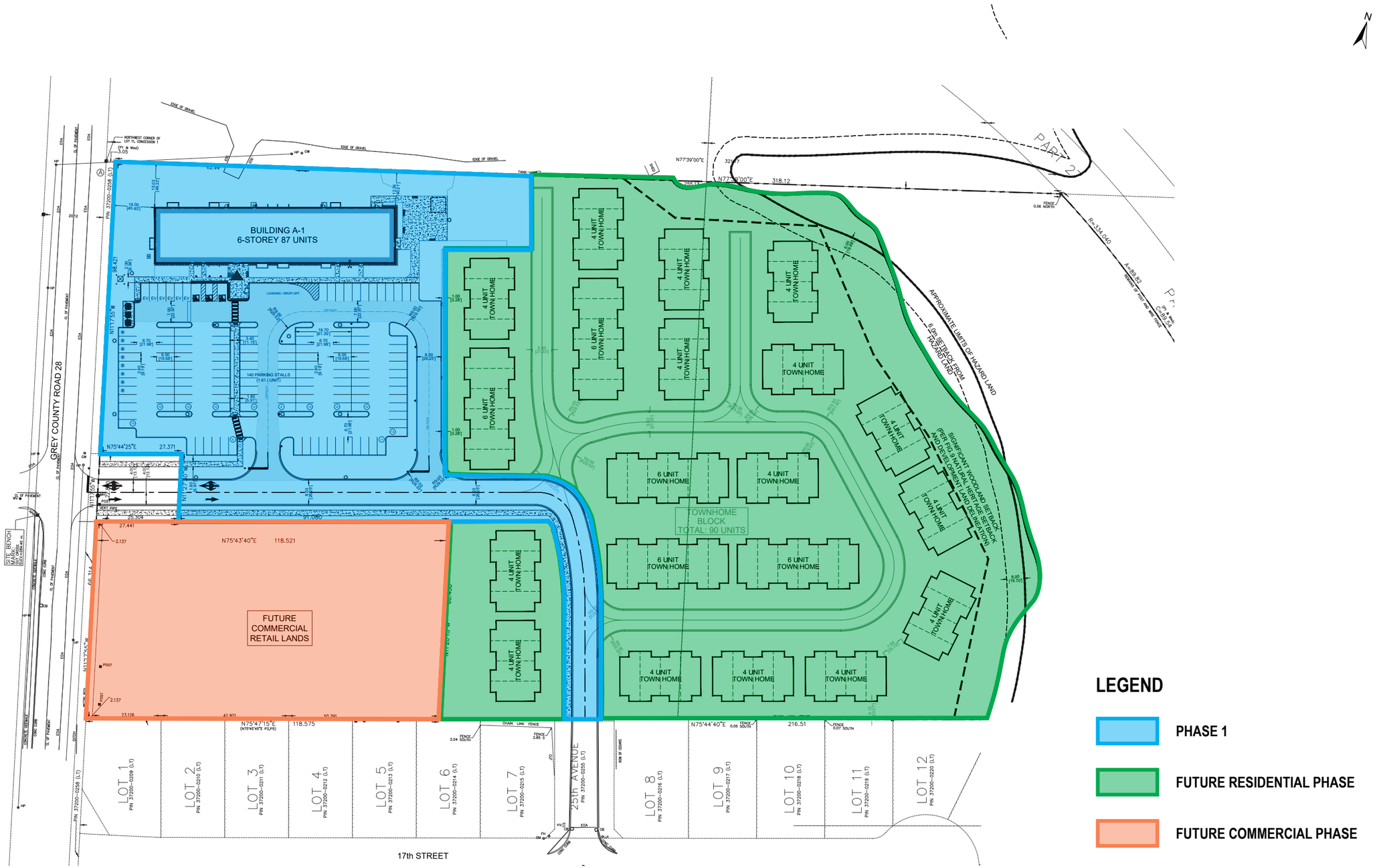
Section 8.4 of the County Official Plan outlines the policies for Active Transportation. Policy 8.4.2 states that new developments will need to be designed to be walkable and bike friendly by including for example trails, sidewalks, and/or paved shoulders where appropriate to integrate with the overall complete transportation system.

<u>Conformity:</u> *The Proposed Development has been designed to be walkable and bike friendly and will include sidewalks to ensure pedestrian comfort and safety. These details will be further coordinated during the Site Plan Approval process.*

4.3.6 County of Grey Official Plan Summary

The Subject Application conforms with the Grey County Official Plan as it intensifies a vacant infill site within Hanover's Primary Settlement Area through the construction of 90 medium-density townhouse dwellings and 87 high-density apartment dwelling units, for a total of 177 dwelling units. The Proposed Development efficiently uses land, infrastructure, and public service facilities while supporting active transportation through the provision of sidewalks and an efficient circulation route which integrates with the broader transportation system. The Proposed Development respects the setbacks associated with the Significant Woodlands on the Site, protecting its natural features and ecological functions, and further

remains beyond 6.0m from the limits of the hazard lands. The Proposed Development is within the County's density requirements and contributes to the achievement of complete communities, providing a range and mix of uses, including Large Format Commercial, while ensuring compatibility with adjacent uses.



LEGEND

- PHASE 1
- FUTURE RESIDENTIAL PHASE
- FUTURE COMMERCIAL PHASE

GSP group

Preliminary Phasing Plan

Source: KWA Site Development Consulting Inc. / GSP Group (2026)

Figure 7

4.4 Town of Hanover Official Plan

The Town of Hanover Official Plan ("Official Plan") was adopted by Hanover Council on August 11, 2014, and was approved by the County of Grey on February 16, 2016, and came into effect on March 18, 2016. The purpose of the Official Plan is to provide a long-term strategy for managing growth and development within the Town of Hanover within the planning horizon of the County of Grey Official Plan. The goals, objectives and policies contained in this Official Plan are intended to guide the decisions of the public authorities and private interests to maintain livable and attractive communities.

The Site is designated Large Format Commercial and Residential with the Regulated Area overlay on Schedule A – Land Use (**Figure 8**) and Significant Woodlands on Schedule B – Constraints (**Figure 9**). The Proposed Development seeks a refinement of the limits of the Large Format Commercial Designation and the Residential Designation while maintaining the intent of the Official Plan as provided in the Official Plan. Part B – Interpretation provides policy direction as follows:

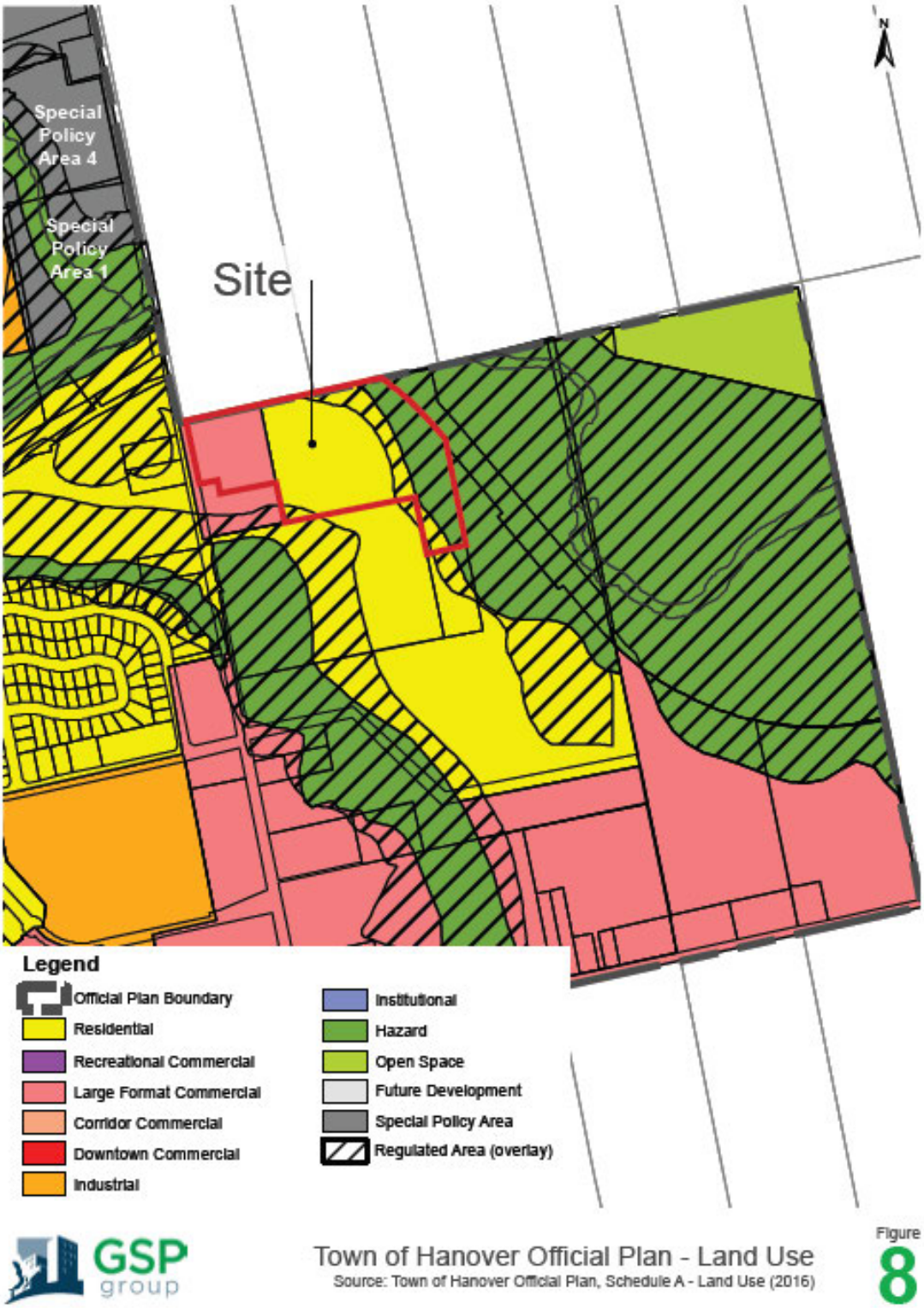
B1.1 All lands within the Town of Hanover have been placed within one or more land use designations on Schedule A to this Official Plan

B1.2 The boundaries between the land use designations shown on Schedule A are to be considered approximate, except where they coincide with roads or clearly defined geographical boundaries.

B1.3 It is the policy of the Town that an Official Plan Amendment shall not be necessary to make minor adjustments to the land use boundaries, provided that the general intent of the Plan is maintained.

The Proposed Zoning By-law Amendment will provide the implementation of the intent of the Official Plan wherein a large format commercial block is maintained, and a high-density residential block is included within a portion of the area currently shown as Large Format Commercial this is to be accommodated through site-specific zoning approvals for additional uses to the Large Format Commercial (C3) Zone.

Figure 8 – Town of Hanover Official Plan Schedule A – Land Use



GSP group

Town of Hanover Official Plan - Land Use

Source: Town of Hanover Official Plan, Schedule A - Land Use (2016)

Figure 8

Figure 9 – Town of Hanover Official Plan Schedule B – Constraints

4.4.1 Residential Policies

Section D2 of the Official Plan outlines the policies for Residential lands. Policy D2.3.1 outlines the permitted uses and states that the predominant use of land within the Residential designation shall be residential dwelling units. The types of dwelling unit permitted shall include […] medium density housing such as triplexes, quadraplexes and townhouses and high-density housing such as apartments. Policy D2.4.1 states that a wide range of housing types and densities shall be permitted within the Residential designation, subject to the policies in this Plan. Policy D2.4.2 states that new residential development shall be serviced with municipal water and sanitary sewer. Policy D2.4.3 states that new residential development shall occur by intensification, infilling and expansion.

<u>Conformity:</u> *The Proposed Development intensifies the Site and includes the construction of a six-storey, 87-unit apartment building and 20 townhouse blocks containing 90 dwelling units, for a total of 177 dwelling units. These uses are classified as high- and medium-density uses, respectively, which are permitted in the Official Plan. The Proposed Development will utilize existing municipal water and sanitary sewer services.*

Policy D2.4.4 states that residential development through intensification shall be encouraged to represent 10% of the new residential dwellings being established within the Town. Policy D2.4.5 states that the residential portion of all subdivisions, condominiums or multi-unit/multi-lot developments shall provide a density of no less than 25 dwelling units per net hectare.

<u>Conformity:</u> *The Proposed Development intensifies the Site by adding 177 dwelling units, which contributes to the Town's target of ten percent of new residential development being brought forward through intensification. The Proposed Development contemplates a density of approximately 23.35 units per net hectare, however this is inclusive of 1.68 ha of non-developable hazard land/significant woodlot. When the density is reviewed on the basis of the developable land area a density of 30 units per hectare is provided, which exceeds the Town's minimum requirement for multi-unit developments.*

Policy D2.4.17 of the Official Plan outlines the Medium and High-Density Residential Policies, and Policy D2.4.17(d) states that medium density residential housing is strongly encouraged within the Residential designated areas of Hanover, and will likely be required in most new multi-lot or multi-unit developments in order to achieve the minimum density requirement of this Official Plan. High density residential housing shall also be encouraged, in appropriate locations.

<u>Conformity:</u> *The Proposed Development includes the construction of 20 townhouse blocks containing 90 dwelling units total, which are classified as a medium-density use, as well as a six-storey apartment building, containing 87-units, which is classified as a high-density use. The apartment building has been sited to ensure compatibility with adjacent low-density residential uses to the south and to the west of the Site, whereby the Large Format Commercial block provides additional buffering between the apartment building and the uses to the south.*

Policy D2.4.17(e) states that the following shall also be taken into consideration when reviewing the appropriateness of a new medium or high density development:

#:	Requirement:	<u>Conformity:</u>
i.	The proposed use shall generally be compatible with existing uses in close proximity of the subject lands. The word "compatible" does not necessarily mean the same as or similar to existing nearby built form. Being compatible shall mean that the proposed use can co-exist with the existing nearby built form without causing undue adverse impacts with regard to dwarfing of buildings, shadowing, existing views, increased noise, traffic, etc.	*The proposed apartment building is sited along the north of the Site, away from the low-density residential uses to the south and to the west of the Site. The apartment building will provide sufficient on-site parking and setbacks that are in compliance with the Zoning By-law. The Large Format Commercial block is located south of the proposed surface parking lot for the apartment building, providing additional buffering between this building and these low-density residential uses to the south. The commercial block, when developed will be subject to site plan approval and appropriate considerations for compatibility will be further reviewed through that process.*
ii.	Adequate buffering, landscaping and building setbacks shall be provided to protect the privacy of the adjacent residential properties.	*A Landscape Plan has been prepared by GSP Group Inc., which provides adequate landscaping and amenity space around the proposed apartment building. The apartment building meets and exceeds the minimum required setbacks of the Residential Type 5 (R5) zone, ensuring sufficient separation is provided between the apartment building and adjacent residential properties.*

iii.	The roads in the area shall have the ability to handle the expected traffic increase. Medium and high density housing will generally be encouraged to locate in areas near arterial or collector roads in order to minimize traffic congestion and facilitate access to commercial areas.	*A Transportation Impact Study has been prepared by Paradigm Transportation Solutions Ltd., which confirms that the development be considered for approval as proposed with no conditions related to off-site transportation improvements.*
iv.	Municipal water and sanitary sewer capacity shall be available to service the proposed development.	*A Functional Servicing and Storm Water Management Report has been prepared by KWA Site Development Consulting, which confirms that the Proposed Development can be adequately serviced in consideration of the proposed Zoning By-law Amendment.*
v.	Adequate off-street parking shall be provided to serve the proposed development.	*The proposed apartment building contemplates 140 parking spaces, provided at a rate of 1.61 spaces per unit, which exceeds the Town of Hanover Comprehensive Zoning By-law 2519-15's requirement of 1.0 spaces per unit.*

Policy D2.4.17(f) states that the design of the medium and high density development shall take into consideration: the height, bulk and siting of buildings shall achieve harmonious design and integrate with the surrounding area (i), appropriate open space, landscaping and buffering shall be provided on site to maximize the privacy and enjoyment of the residents residing on the property and to minimize any potential impact on adjacent lower density uses (ii).

Conformity: *Please refer to the Urban Design Brief in Section 5.0 of this Report.*

4.4.2 Large Format Commercial Policies

Section D5 of the Official Plan outlines the Large Format Commercial Policies. A portion of the Site is designated Large Format Commercial, and per the submitted site plan, the southwestern corner of the Site is contemplated for commercial uses. This area is reflected in the proposed Zoning By-law Amendment as Large Format Commercial (C3) Zone.

Large Format Commercial uses are those which are not suited to locate within the downtowns due to their size and/or nature but are supportive of the general commercial needs of the residents of the Town, neighbouring communities and visitors to the area.

Policy D5.3.1 of the Official Plan identifies the permitted uses within the Large Format Commercial Designation, and states that those uses which are not compatible with the compact nature of the downtown areas due to space and parking demands. Permitted uses shall include, but are not limited to, automotive uses, restaurants, motels, garden centres, building supplies, home improvement stores, grocery stores and large scale retail establishments. A day nursery serving the employees of a principal use shall also be permitted as an accessory use.

Policy D5.4.1 of the Official Plan prescribes a minimum floor area of 186 square metres, and Policy D5.4.2 prescribes a maximum floor area of 2,787 square metres, which can be exceeded through the completion of a retail market study.

<u>Conformity:</u> *While the commercial component of the Proposed Development has not been finalized, the size of the commercial block will support commercial uses that will be greater than the prescribed minimum floor area of 186 square metres and less than the prescribed maximum floor area of 2,787 metres. Conceptually at this time it is anticipated that two commercial units will be provided with an estimated building area of 464 square metres, respectively. The future commercial block will be subject to a future Site Plan Approval application where these details will be further refined and confirmed.*

Policy D5.4.3 of the Official Plan states that adequate off-street parking, loading spaces and appropriate landscaping shall be provided, as required in the Comprehensive Zoning Bylaw, and that the provision of parking at the rear or side of the building shall be encouraged where possible such that the commercial building can be constructed closer to the road, thereby creating a more attractive streetscape. In all instances, landscaping shall be required between any commercial use of parking areas and the adjacent road. Policy D5.4.4 states that access points to the parking areas shall be limited in number and designed to minimize danger and inconvenience to vehicular and pedestrian traffic. Shared entrances and service roads shall be encouraged.

<u>Conformity:</u> *As noted previously, the commercial component of the Proposed Development has not been finalized, however, to minimize accesses on Grey County Road 28, access to the commercial block will be provided along a road internal to the Site, and parking will be sited to be at the rear of these uses, as well as to the rear of the townhouse blocks to the east of the future*

commercial block, to ensure an attractive streetscape. Parking areas will be appropriately screened with landscaping. The future commercial block will be subject to a future Site Plan Approval application where these details will be further refined and confirmed.

Policy D5.4.5 of the Official Plan states that adequate buffers between Large Format Commercial development and adjacent non-commercial uses shall be provided in order to minimize potential land use conflicts.

<u>Conformity:</u> *As noted previously, the commercial component of the Proposed Development has not been finalized and will be subject to a future Site Plan Approval application where these details will be further refined and confirmed. The size of the commercial block and associated C3 Zoning provide sufficient room for a contemporary commercial development in compliance with the necessary zoning regulations for commercial development.*

4.4.3 Environmental Policies

Section E1 of the Official Plan outlines the Environmental Policies. The Site contains Significant Woodlands, which are required to be protected by the Provincial Planning Statement and the County of Grey Official Plan (Policy E1.1.1(g)). Policy E.1.1.3 states that several areas of Significant Woodlands are situated within Hanover and are identified on Schedule B to this Official Plan. The policies for Significant Woodlands are as follows: no development or site alteration shall occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, in accordance with Section E1.2, that there will be no negative impacts on the natural features or their ecological functions. The “adjacent lands” are defined as lands within 120 metres of the Significant Woodland.

<u>Conformity:</u> *The Site contains a Significant Woodland, including the SVCA’s associated Regulation Limit, on the east side of the Site. The Proposed Development respects the required six-metre setback from the Hazard Lands identified on the Site and further provides a 15m setback from the Significant Woodlands. The implementing Zoning By-law zones the buffer area and natural hazard and natural heritage features as Hazard (H) zone to ensure limits of development are clearly defined. Given the identified limits of development and the provision of a buffer to the significant woodlot, the Proposed Development is not anticipated to cause any negative impacts on the natural features or the ecological functions of these lands.*

4.4.4 Town of Hanover Official Plan Summary

The Proposed Development conforms to the Official Plan as it intensifies a vacant site within the Primary Settlement Area by adding 177 dwelling units, consisting of medium- and high-density residential typologies, at a density that exceeds the Town's minimum requirement for multi-unit developments and contributes to the Official Plan's intensification target of ten percent new residential development occurring through intensification. As permitted through the interpretation policies of the Official Plan the Large Format Commercial area of the Development will be refined in the zoning by-law and a residential component will be introduced along the 24th Avenue Site frontage.

The Proposed Development will utilize existing municipal water and sanitary sewer services, and the apartment building is sited to ensure compatibility with adjacent low-density residential area. The Zoning By-law Amendment respects the required setbacks to the Significant Woodlands and the Hazard Lands and ensures the protection of the natural features and the ecological function.

4.5 Town of Hanover Comprehensive Zoning By-law 2912-15

The Site is currently zoned "Large Format Commercial (C3)," "Future Development (D)," and "Hazard (H)" with a Regulated Area overlay in the Town of Hanover Comprehensive Zoning By-law 2912-15 ("Zoning By-law") (**Figure 10)**. The Subject Application seeks to introduce site-specific permissions to the C3 zone to permit the proposed apartment building and to rezone the east part of the Site to "Residential Type 4 (R4)" to facilitate the construction of the proposed townhouse dwellings. The area of the Site zoned Hazard (H) will remain. The zoning of the associated parcel at 741 24th Avenue will remain Large Format Commercial (C3) zone (**Figure 11**).

The site-specific permissions to be added to the C3 Zone are reflective of the Residential Type (R5) Zoning regulations. With the exception of building height all of the regulations for the R5 Zone will be achieved with the proposed apartment building.

Below is a zoning compliance chart of the Proposed Development. Table 1 reviews the Apartment Building to the R5 Zone Regulations (which are to be carried forward as a site-specific regulation in the C3 Zone for this area of the Site) and Table 2 reviews the Townhouses to the R4 Zoning Regulations:

Table 1 - Residential Type 5 (R5) Zoning (Apartment Building)
(Regulations to be added as site-specific to C3 Zone)

Regulation	Required	Provided	Conforms (Y/N)
Uses Permitted:	Apartment Dwelling	Apartment Dwelling	Y
Min. Lot Frontage:	30.0 metres	98.4 metres (County Rd. 28)	Y
Min. Lot Area:	Minimum 846 square metres plus 100 square metres for every dwelling unit above 4 (9,146 square metres)	1.52 ha	Y
Min. Front Yard:	7.5 metres	14.0 metres (24th Avenue)	Y
Min. Interior Side Yard:	6.0 metres	12.26 metres (to north property boundary)	Y
Min. Exterior Side Yard:	7.5 metres	N/A	N/A
Min. Rear Yard:	10.5 metres	>10.5 metres	Y
Min. Floor Area/Dwelling Unit (One Bedroom):	51.0 square metres	> 51.0 sq. m	Y
Min. Floor Area/Dwelling Unit (Two Bedroom):	62.5 square metres	> 62.5 sq. m	Y
Max. Lot Coverage:	40.0 percent	10%	Y
Max. Building Height:	12.0 metres	20.0 metres	N
Min. Landscaped Open Space:	35.0 percent	> 40.0%	Y

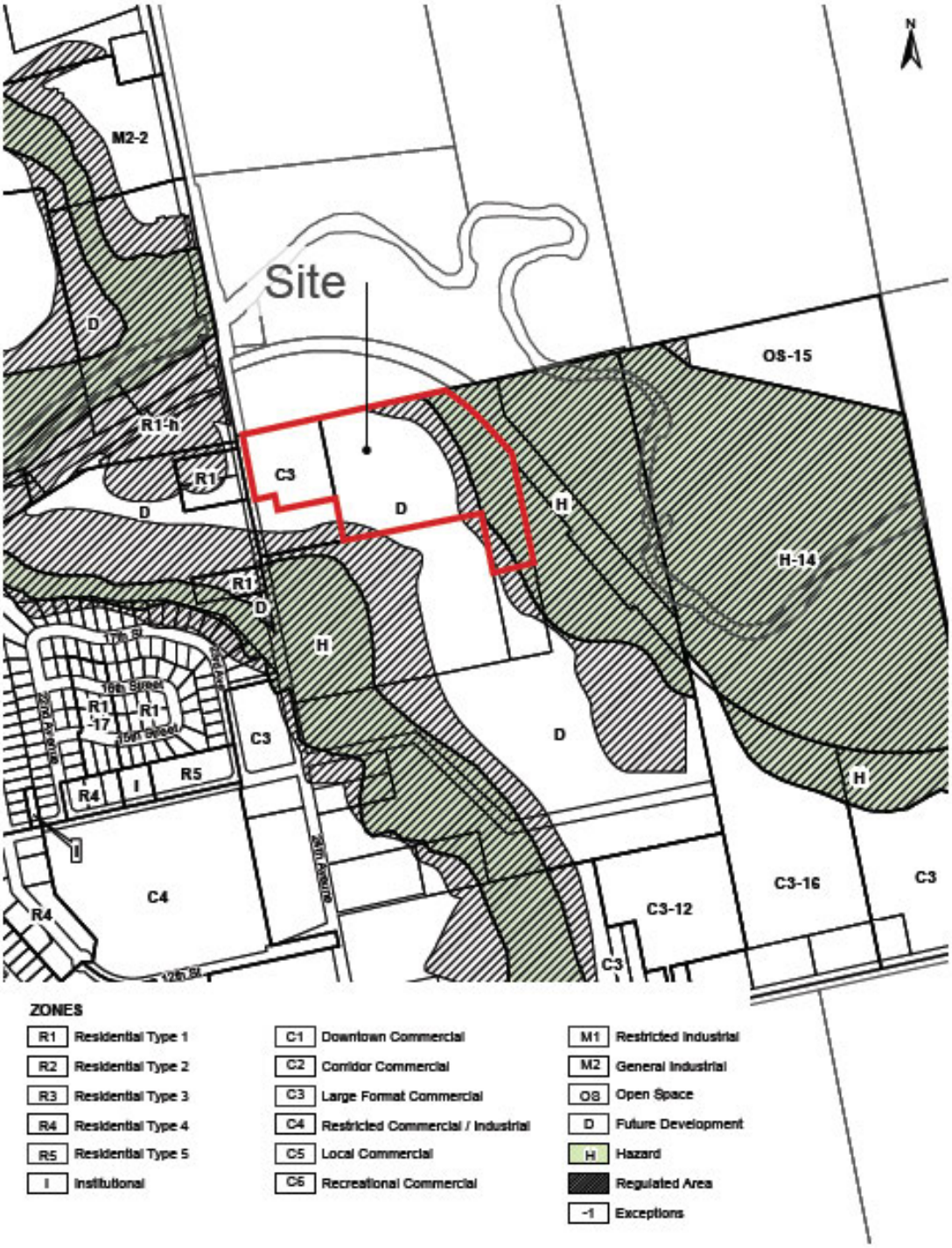
General Regulations			
Min. Required Parking (Multi-Family Apartment):	1.0 per dwelling unit (above 20 units) (87)	1.61 per dwelling unit (140)	Y
Min. Required Barrier-Free Parking:	On any property where more than 20 parking spaces are required by this By-law, the required number of parking spaces shall include the provision of designated accessible parking spaces for the use of physically disabled persons in the amount of 1 barrier-free parking space for the first required 20 parking spaces plus 1 space for each additional 100 parking spaces. (1 space required)	3 provided	Y
Required Parking Area Permitted Location:	For apartment buildings, required parking may be permitted in the interior side yard or rear yard.	Interior Side Yard	Y
Min. Parking Space Dimensions:	Every off-street parking space shall have dimensions of not less than 2.8 metres in width or less than 6 metres in length, excepting	2.80 metres by 6.0 metres	Y

	however that parallel parking spaces shall have a minimum width of 3.9 metres and a minimum length of 6.7 metres.		
Min. Drive Aisle Width:	Notwithstanding 6.13.10.1 above, the parking space shall be not less than 3.0 metres in width where it is accessed by a drive aisle having a width of less than 6.7 metres or 3.3 metres where both sides of the parking space is obstructed. The side of a parking space is considered obstructed when a fixed object such as a wall, column, bollard, fence or pipe is located within 0.3 metres of the side of the parking space, and is more than 1.0 metre from the front or rear of the parking space.	Drive aisle 6.7 metres wide	Y

Table 2 - Residential Type 4 (R4) Zoning (Townhouse Dwellings)

Regulation	Required	Provided	Conforms (Y/N)
Uses Permitted:	Townhouse Dwelling	Townhouse Dwelling	Y
Min. Lot Frontage:	30.5 metres	>30.5 m	Y
Min. Lot Area (per dwelling unit):	270 square metres	>270 sq. m	Y
Min. Front Yard:	6.0 metres	6.0m	Y
Min. Interior Side Yard:	4.5 metres	4.5m	Y
Min. Exterior Side Yard:	4.0 metres	4.0m	Y
Min. Rear Yard:	10.5 metres	10.5m	Y
Min. Floor Area/Unit	51 square metres	>51 sq. m	Y
Max. Lot Coverage:	40.0%	40 %	Y
Max. Building Height:	10.0 metres	10 m	Y
Min. Landscaped Open Space:	30.0%	30.0%	Y
General Regulations			
Min. Required Parking (Townhouse)	2.0 per dwelling unit	2 per dwelling unit	Y

Figure 10 – Town of Hanover Comprehensive Zoning By-law Schedule A – Zoning Map



5. Urban Design

5.1 Design Policy and Guideline References

5.1.1 Grey County Official Plan

The Site is designated as “Primary Settlement Area” in the County of Grey Official Plan on Schedule A – Land Use Types and is further designated as “Significant Woodlands” on Appendix B – Constraint Mapping. The Primary Settlement Area designation permits a full range of residential and commercial land uses.

The Grey County Official Plan does not contain any urban design policies or guidelines that are applicable to the Site and the Proposed Development.

5.1.2 Town of Hanover Official Plan

The Site is designated as “Large Format Commercial,” “Residential,” and “Hazard” with the Regulated Area overlay on Schedule A – Land Use and is further designated as “Significant Woodlands” on Schedule B – Constraints. The Large Format Commercial designation permits a full range of large-scale commercial uses which generally include automotive uses, restaurants, motels, and garden centres, among other uses. A portion of the Large Format Commercial designation will be maintained to accommodate a future commercial use on the Site. The Residential designation permits a full range of housing options, including medium-density housing options such as townhouses and high-density housing options such as apartment buildings. The Hazard and Significant Woodlands designations, along with the Regulated Areas overlay are to be maintained as the Proposed Development complies with its associated required setbacks.

The Town of Hanover Official Plan does not contain any urban design policies or guidelines that are applicable to the Site and the Proposed Development.

5.1.3 Urban Design Guidelines

The County of Grey and the Town of Hanover do not have any applicable urban design guidelines.

5.2 Urban Design Commentary

This Urban Design commentary provides an overview of the proposed apartment building (“Proposed Apartment Building”). Analysis of the urban design considerations for the proposed townhouse block can be completed during Site Plan Approval for the townhouse

block, which is proposed to be during Phase 2 of the Proposed Development, according to the Preliminary Phasing Plan illustrated on **Figure 7**.

The Proposed Apartment Building is six storeys in height and contains 87 dwelling units. The Proposed Apartment Building contains a mixture of one- and two-bedroom units. The ground floor will contain amenities such as a bicycle storage locker, three storage locker rooms, a gym and a lounge. Around the exterior of the building to the east, an amenity area and patio is provided. There are 140 parking stalls associated with the Proposed Apartment Building, provided at a rate of 1.61 spaces per unit, which includes 3 barrier-free parking spaces and six parking spaces dedicated to electric vehicles, with servicing for an additional 8 future EV parking stalls. One loading space is provided adjacent to the building's entrance.

5.2.1 Building Positioning

The Proposed Apartment Building is positioned at the northwest corner of the Site, setback 12.26 metres from the northern (side yard) lot line, 14.00 metres from the western (front) lot line, and directly north of the proposed surface parking lot. These setbacks, as well as on the front (south) and side (east) facades accommodate private balconies/patios associated with individual units, which are permitted to encroach into the setback.

Directly east of the proposed apartment building is an amenity area and patio, which will contain a pergola, seating and passive recreational open space.

5.2.2 Building Scale and Massing

The Proposed Apartment Building is six storeys in height in total, with an overall height of 18.60 metres. The building is rectangular in shape, measuring approximately 18.77 metres in width by 80.91 metres in length. The Proposed Apartment Building is considered a mid-rise building, and its building height does not warrant a defined podium and tower portion

Access to the entire Site is provided through two proposed access points, in alignment with the County of Grey's Official Plan policies on site access, with one being an extension of 25th Avenue into the Site and the other being a new site directly access from 19th Street into the Site. Currently, the parcel which would facilitate access to the Site has been conveyed to the County of Grey.

The Proposed Apartment Building has been sited to provide maximum compatibility with adjacent residential uses to the south, west, and north, being located away from these low-density uses. The uses to the south are further buffered by the proposed surface parking lot and the Large Format Commercial Block, which will eventually provide a transition in height between the Proposed Apartment Building and the low-density residential uses.

Appropriate transition is provided from the Proposed Apartment Building to the low-density residential uses to the west of the Site, including the 14.0-metre setback to the western (front) lot line, as well as further separation provided by the 24th Avenue right-of-way. The Proposed Apartment Building has been sited to provide appropriate separation to the single-detached dwelling to the north, with it being located directly adjacent to this dwelling's existing driveway, away from the dwelling itself.

The Proposed Apartment Building is designed to create a comfortable, safe, and engaging pedestrian environment. This is established through the inclusion of at-grade amenities, such as the amenity area/patio and pergola, as well as interior amenity space such as a bicycle storage room, which supports active transportation, three storage locker rooms, a dog wash, a gym and a lounge. The outdoor amenity space/landscaped area is discussed further in Section 5.4.7 of this Brief.

5.2.3 Parking

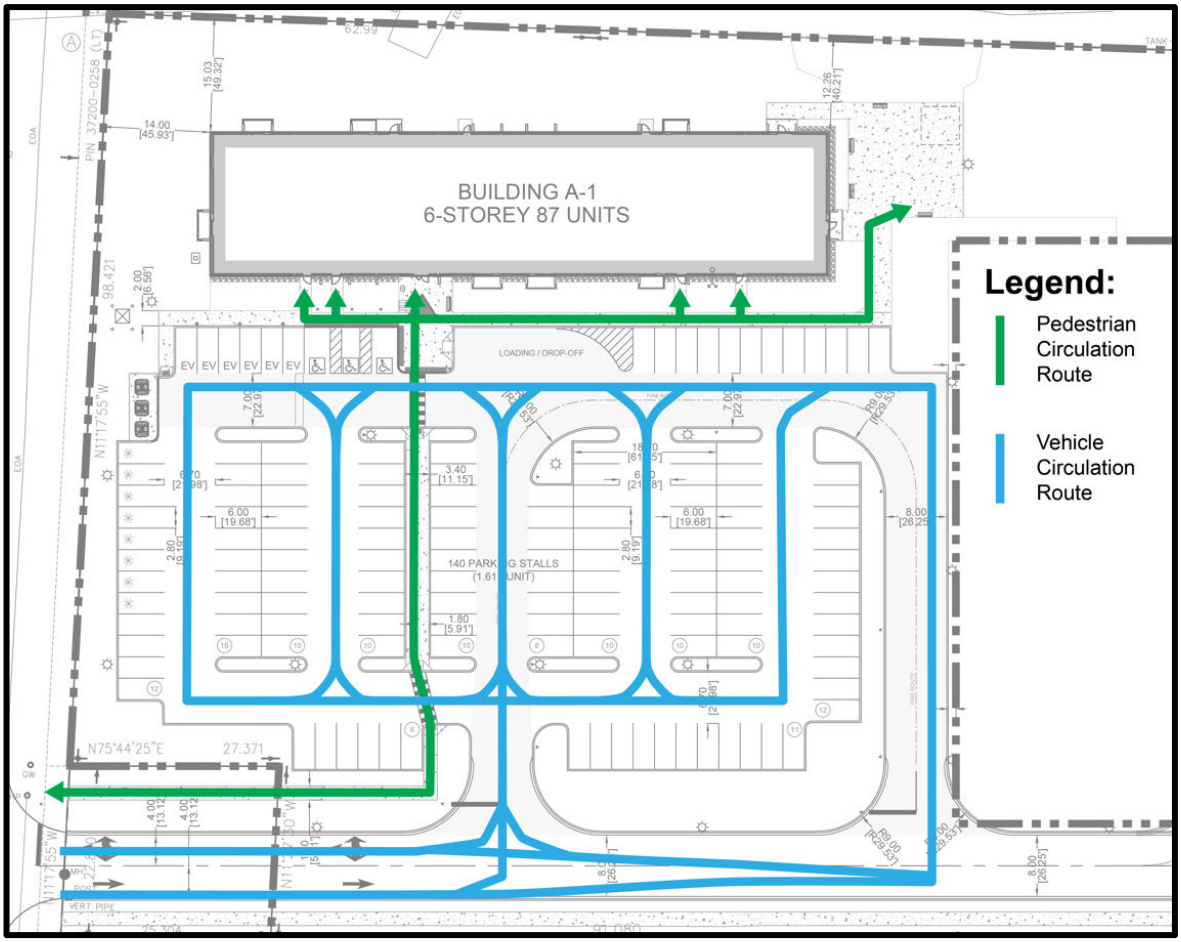
Parking is provided through a surface parking lot which is directly south of the Proposed Apartment Building and north of the proposed extension of 19th Street. The surface parking lot contains five north to south rows of parking, as well as parking spaces adjacent to the building at the north and along the southern area of the parking lot. In total, 140 surface parking spaces are provided at a rate of 1.61 spaces per unit, including three barrier-free parking spaces, and six electric vehicle parking spaces, located adjacent to the Proposed Apartment Building, proximal to the building's entrance.

Bicycle parking is proposed to be provided inside the building in a bicycle storage room. The exact amount of bicycle parking has not been determined and will be finalized during Site Plan Approval. Exterior bicycle parking will also be provided.

5.2.4 Access and Circulation

Two vehicular access points are provided to the parking lot, both along the southern portion of the parking lot, with one connecting directly to a parking aisle and one connecting to the drive aisle along the north of the parking lot. A central walkway is provided in the parking lot which connects the Proposed Apartment Building to 24th Avenue and includes crosswalks across parking aisles to ensure pedestrian comfort and safety to minimize potential conflict with vehicles. The pedestrian circulation route provides direct access to the move-in corridor, bicycle storage room, vestibule/mail room, an exit corridor, and the amenity space/patio to the east of the Proposed Apartment Building. Additionally, the loading space associated with the building is provided along the northern side of the parking lot, directly adjacent to the vestibule/mail room and within close proximity to the move-in corridor.

Vehicular and Pedestrian Circulation Diagram



5.2.5 Service and Loading Areas

One loading area is provided at the front of the building, adjacent to the main entrance/mail room. A move-in room is provided adjacent to the west of the entrance vestibule, which provides for easy access to the central elevator.

Three garbage bins are provided at the northwest corner of the surface parking lot. This garbage location has been chosen to allow for efficient garbage collection, allowing for garbage trucks to utilize the parking aisle to the south of the garbage collection area for egress, minimizing reversing and potential conflicts with pedestrian and other vehicles.

5.2.6 Streetscape Design

The Proposed Apartment Building is oriented toward the north of the Site, with the surface parking lot being located between the building and its associated internal road (19th Street extension). This surface parking lot accommodates the Proposed Apartment Building's

required parking, garbage collection area, loading space, and pedestrian circulation route, as well as individual private balconies and patios associated with individual respective units, providing a strong visual and functional connection between the building and the public realm while ensuring that appropriate separation distance is provided between the Proposed Apartment Building and adjacent low-density residential uses.

The proposed amenity area/patio is located to the east of the Proposed Apartment Building, which is connected to the surface parking lot through the pedestrian sidewalk network.

5.2.7 Landscape Plan and Amenity Area

A Landscape Plan has been prepared by GSP Group Inc. for the Proposed Apartment Building. The proposed amenity area/patio contains benches, a pergola, shrubbery, perennials, and trees, creating an urban room while ensuring natural surveillance can occur site-wide. Extensive landscaping is provided around the south (front) and east (side) of the building and includes shrubbery, perennials, and trees. Additionally, benches, a waste receptacle, and short-term bicycle storage (bicycle rack) is provided adjacent to the building entrance.

Around the rear (north) and west sides of the Proposed Apartment Building, extensive tree plantings are provided to provide further buffering between the Proposed Apartment Building and the adjacent low-density residential uses to the north and to the west of the Site. Within the surface parking lot, trees are provided along the perimeter of the Site, as well as in select parking lot islands to limit the urban heat island effect while also ensuring viewpoints and sightlines are maintained.

5.2.8 Architectural Treatment and Materials

A high-quality façade design is complemented to integrate with and complement the surrounding neighbourhood. The proposed design reflects key design principles of contemporary mid-rise apartment design whose façade emphasizes simplicity and a strong sense of rhythm through the repetition of balconies and vertical elements.

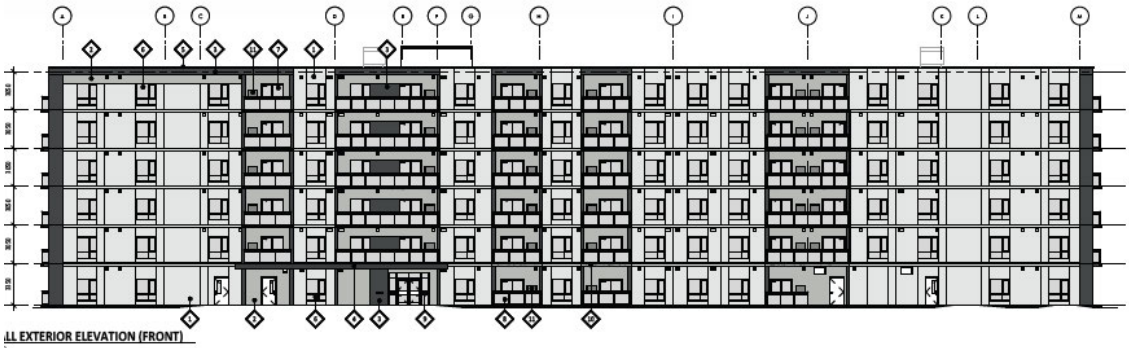
The façade is articulated through horizontal and vertical projections and recessions, projecting balconies, and material/colour changes. These articulations create depth and provide visual interest, helping to break monotony and limit the visual impact of the building’s overall length. Through the provision of large windows, including sections with floor-to-ceiling balcony/patio doors and windows, transparency is provided on the first floor and on upper floors, contributing to the natural surveillance of the Site and “eyes on the street.” Fenestration follows a regular and symmetrical pattern, which is a characteristic of the contemporary mid-rise apartment design.

Balconies are a defining element of the Proposed Apartment Building, contributing to the aesthetic rhythm as well as the provision of private outdoor amenity space. Balconies project outward and are lined with metal and glass railings, reinforcing the contemporary design style. The regular balcony placement animates the façade and provides opportunities for natural surveillance and “eyes on the street.” The building’s entrance is clearly defined with a canopy overhang and large floor-to-ceiling windows.

The material colour palette utilizes neutral colours, ensuring consistency with the materials and colours of the adjacent low-density residential subdivision to the south and to the west of the Site.

Building Elevations

FRONT ELEVATION CONCEPTUAL ISOMETRIC



LL EXTERIOR ELEVATION (FRONT)

6. Supporting Studies

This section presents a summary of principal findings and recommendations and is not intended to replace the other reports and studies submitted. All studies should be read in their entireties in conjunction with this Planning Justification Report.

6.1 Functional Servicing & Stormwater Management Report – KWA – July 2026

KWA Site Development Consulting Inc. (KWA) were retained by Skydev to prepare a Functional Servicing and Stormwater Management Report in support the Zoning By-law Amendment. The Functional Servicing and Stormwater Management Report was prepared as per requirements of the Town of Hanover and Saugeen Valley Conservation Authority, as specified in the pre-consultation letter dated December 2025. The report outlines how the proposed development can be adequately serviced in consideration of the new zoning.

Sanitary Servicing: The FSR concluded that that the sanitary flows generated by the subject site can be adequately conveyed by the existing downstream infrastructure without capacity concerns.

Water Servicing: The FSR provides for a proposed on-site water distribution system that will consist of 200 mm diameter watermains. The existing 200 mm watermain on 19th Street, installed as part of the Cedar Heights West Subdivision, will be extended into the site along Street A to its terminus near the secondary site access to the south subdivision. A 200 mm watermain stub will be provided to service the future commercial retail lands. Future Building A-1 will be serviced by a 100 mm domestic connection and a 200 mm fire service connection, supplied from the Street A watermain via a 200 mm connection. The future townhouse block will be serviced by 200 mm watermains along Streets B, C, and D, connected to the Street A watermain at Street B.

Stormwater Management: The site is currently vacant and maintained as agricultural land. Based on the sites topography stormwater runoff generally drains in three separate directions, northerly to the Saugeen River, to the northwest low point and the roadside ditch and to the southwest corner and a low point and the roadside ditch. Stormwater quantity control design has been completed to satisfy the criteria of controlling post-development peak runoff rates to the pre-development peak runoff rates. Stormwater quality control has been designed to meet the criteria of providing enhanced protection levels witch correspond to the removal of a minimum of 80%

total suspended solids. Oil/grit separators are proposed in parking lot area runoff areas.

6.2 Transportation Impact Study – Paradigm Transportation Solutions Limited – July 2026

Paradigm Transportation was retained by SkyDev Hanover LP to prepare a Transportation Impact Study (TIS) in support of the Proposed Development. The TIS undertook an analysis of the existing traffic conditions, prepared traffic forecasts for five years beyond expected project completion and prepared an assessment of traffic impacts along with providing recommendations for accommodate of the Proposed Development.

The TIS concluded that:

Existing Traffic Conditions: The study area intersections are operating at acceptable levels of service with no identified critical movements.

Development Trip Generation: The development is forecast to generate 103 weekday AM peak hour trips, 124 weekday PM peak hour trips and 114 Saturday peak hour trips.

2035 Background Traffic Conditions: The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.

2035 Total Traffic Conditions: The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.

Access Review: The site access intersection on 24th Avenue and the apartment block access is forecast to operate at satisfactory levels of service (LOS C or better) under 2035 total traffic conditions. A southbound auxiliary left-turn lane on 24th Avenue at the site access is not warranted under 2035 total traffic conditions.

Recommendations: Based on the findings and conclusions of the study, it is recommended that the development be considered for approval as proposed with no conditions related to off-site transportation improvements. Sight distance at the proposed access on 24th Avenue should be confirmed through detailed filed measurements during the detailed design and construction stage, and any required minor adjustments should be implemented, if necessary.

7. Planning Applications

7.1 Zoning By-law Amendment

The Site is currently zoned “Large Format Commercial (C3),” “Future Development (D),” and “Hazard (H)” with a Regulated Area overlay in the Town of Hanover Comprehensive Zoning By-law 2912-15 (“Zoning By-law”). The Subject Application seeks to introduce site-specific permissions to the C3 zone to permit the proposed apartment building and to rezone the east part of the Site to “Residential Type 4 (R4)” to facilitate the construction of the proposed townhouse dwellings. The area of the Site zoned Hazard (H) will remain. The zoning of the associated parcel at 741 24th Avenue will remain Large Format Commercial (C3) zone (**Figure 11**).

The site-specific permissions to be added to the C3 Zone are reflective of the Residential Type (R5) Zoning regulations. With the exception of building height all of the regulations for the R5 Zone will be achieved with the proposed apartment building.

7.1.1 Residential Type 4 (R4) Zone

Residential Type 4 (R4) Zone to be implemented with no special provisions.

7.1.2 Large Format Commercial – Site-Specific (C3-SP)

In addition to the existing permitted uses in the Large Format Commercial (C3) Zone, permissions for an Apartment Building reflective of the Residential Type 5 (R5) Zoning regulations are to be included as site-specific permissions. Further, a maximum building height of 20m is requested.

7.1.3 Additional Permitted Uses

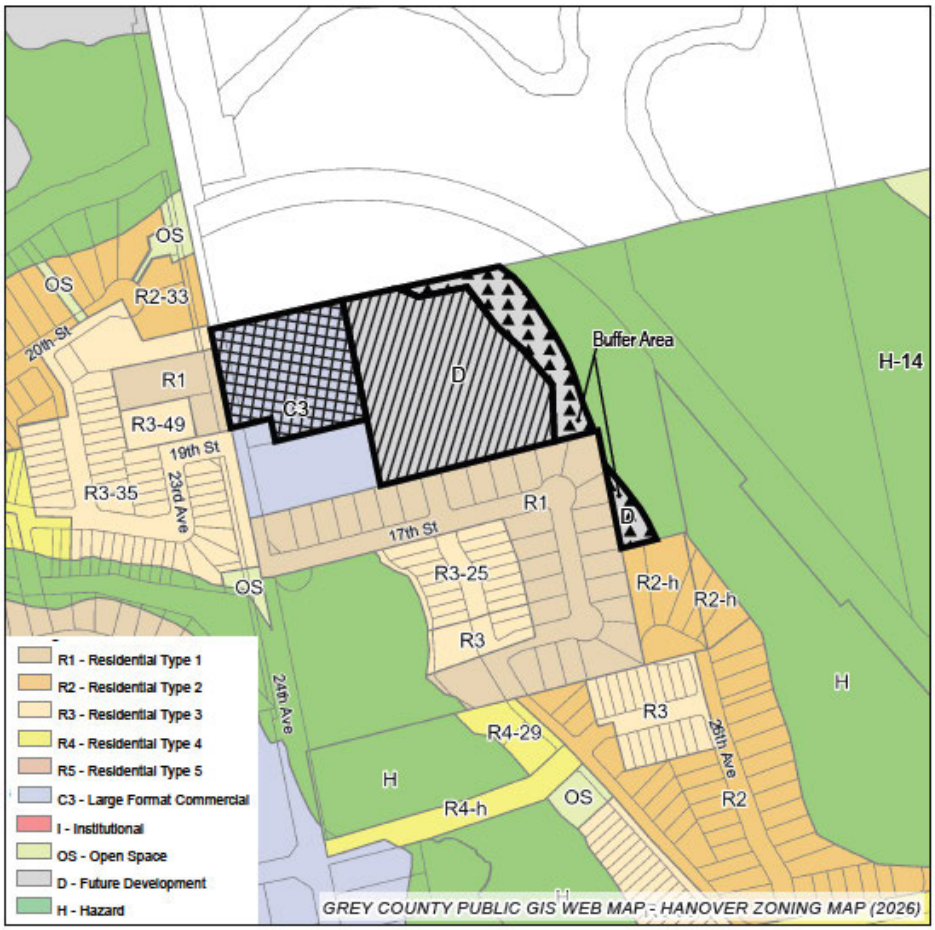
Notwithstanding Section 6.15 Prohibited Uses an Apiary (roof top beehives) shall be permitted on site.

Notwithstanding Section 6.15.11 Ground Mounted Solar Panels and Wind Turbines the placement of solar panels attached to and on top of buildings as well as on parking structures on site shall be permitted.

The Proposed Zoning is shown on the figure below:

SCHEDULE 'A'
ZONING BY-LAW AMENDMENT

TO THE
TOWN OF HANOVER
ZONING BY-LAW 2912-15



FROM FUTURE DEVELOPMENT (D) ZONE TO RESIDENTIAL TYPE 4 (R4) ZONE

FROM LARGE FORMAT COMMERCIAL (C3) ZONE TO LARGE FORMAT COMMERCIAL WITH SITE SPECIFIC PROVISION (C3-SP) ZONE

N

N.T.S
JULY 2026

8. Public Consultation

Upon acceptance and circulation of the application package in support of the Proposed Development, the Town requires the posting of Notice of Application sign(s) to inform surrounding property owners of the Proposed Development. GSP Group and SkyDev commit to post the required signage promptly with a clear, unobstructed view from the street, and agree to maintain the sign throughout the duration of processing of the applications by the Town.

GSP Group and SkyDev are agreeable to the scheduling of a Neighbourhood Information Meeting or open house, if required by the Town, as well as any additional informal public meeting(s), open house meeting(s) and/or neighborhood meetings required by the Town.

The proposed Zoning By-law Amendment applications requires a Statutory Public Meeting in accordance with the *Planning Act* R.S.O. 1990, c. P.13. GSP Group will attend the public meeting as scheduled by the Town and give a formal presentation regarding the Subject Application, as well as answer questions from residents, staff, and Councillors. During the public meeting, contact information for GSP Group will be provided to the public to address any follow-up questions or concerns.

Finally, GSP Group will provide direct written responses to comments raised throughout the public consultation process to Town and County staff for their review and consideration prior to the preparation of a final staff report and recommendations for the Subject Application.

9. Conclusion

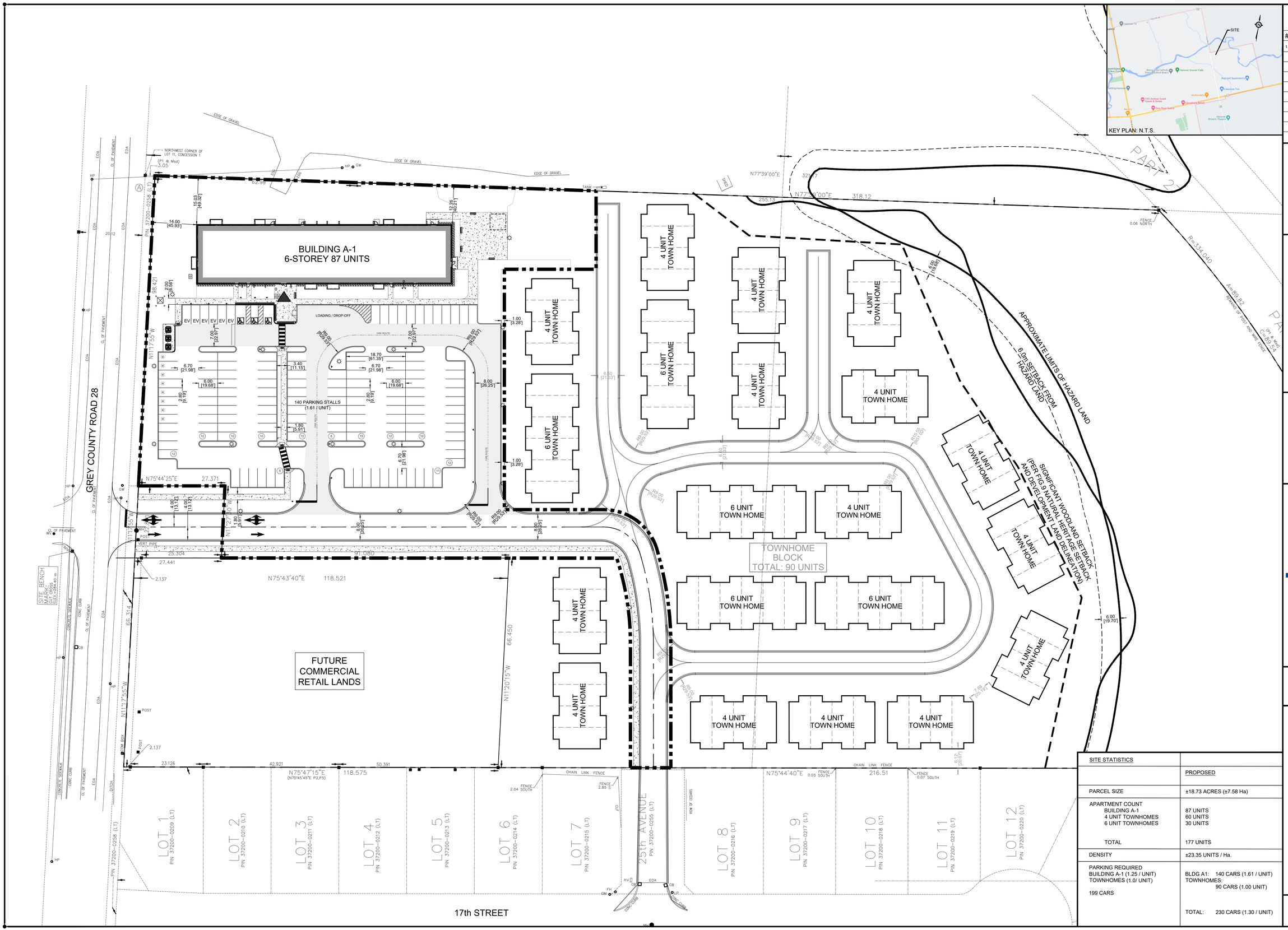
GSP Group Inc. has prepared a Planning Justification Report in support of a Zoning By-law Amendment applications at 853 Grey Road 28 in the Town of Hanover. The Proposed Development consists of one six-storey, 87-unit apartment building as well as 20 townhouse buildings containing 90 townhouse dwelling units. The Subject Application requests to apply the R4 and R5 zones with a Site-specific provision to the C3 Zone to implement the R5 Zoning Regulations for an Apartment Building as an additional permitted use and for building height increase to enable the Proposed Development. This Report has analyzed the applicable Provincial, County, and Local planning policy and concludes that it is consistent with the Provincial Planning Statement, conforms to the Grey County Official Plan, and conforms to the Town of Hanover Official Plan. The planning rationale can be summarized as follows:

- The Proposed Development and Subject Application are for lands located within the settlement area of the Town of Hanover
- The Proposed Development and Subject Application will permit a mixed residential form of development and will maintain Large Format Commercial opportunities.
- The Subject Application will permit a built form that is compatible with the surrounding land uses and provides for a range of housing opportunities for the Town of Hanover.
- The Proposed Development can be adequately serviced by existing municipal infrastructure.
- The Proposed Development maintains a buffer to the natural hazard limits and the natural heritage (significant woodlands) limits and is not anticipated to cause any negative effects to these features.

For the reasons stated above and throughout this Report, the Proposed Development represents good planning and supports the creation of complete communities while intensifying the Site and ensuring compatibility with surrounding uses.

Res[redacted]

Brandon Flewwelling, MCIP, RPP
Development Planning Manager – GSP Group Inc.



REVISION BLOCK

#	DATE	DESCRIPTION
1.	07/13/2026	ISSUED FOR ZBA

REGISTERED PROFESSIONAL ENGINEER
B.JACKSON
100210382
JULY 13, 2026
PROVINCE OF ONTARIO

KWA SITE DEVELOPMENT CONSULTING INC.
2453 Auckland Drive
Burlington, ON L7L 1A9

NORTH ARROW

SKYLINE SKYDEV

SCALE
1:500

SITE STATISTICS	
	PROPOSED
PARCEL SIZE	±18.73 ACRES (±7.58 Ha)
APARTMENT COUNT BUILDING A-1 4 UNIT TOWNHOMES 6 UNIT TOWNHOMES TOTAL	 87 UNITS 60 UNITS 30 UNITS 177 UNITS
DENSITY	±23.35 UNITS / Ha.
PARKING REQUIRED BUILDING A-1 (1.25 / UNIT) TOWNHOMES (1.0/ UNIT) 199 CARS	 BLDG A1: 140 CARS (1.61 / UNIT) TOWNHOMES: 90 CARS (1.00 UNIT) TOTAL: 230 CARS (1.30 / UNIT)

SITE PLAN

SKYDEV HANOVER LP
853 GREY ROAD 28
HANOVER, ONTARIO N4N 0B7

PROJECT No: 25041 | DRAWN BY: BH | CHECKED BY:

SA-001

741 24th Avenue & 853 Grey Road 28, Hanover

Transportation Impact Assessment

Paradigm Transportation Solutions Limited

2026-07
260040

ptsl.com

Project Summary

Project Number:

260040

Date and Version:

2026-07-14
1.0

Client:

SkyDev Hanover LP
5 Douglas Street, Suite 301
Guelph ON N1H 2S8

Client Contact:

Brandon Almeida

Consultant Project Team

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741 24th Avenue & 853 Grey Road 28, Hanover
Transportation Impact Assessment

<< Original Signed By >>
Jim Mallett, M.A.Sc., P.Eng., PTOE

Disclaimer

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Executive Summary

Content

SkyDev Hanover LP has retained Paradigm Transportation Solutions Limited to conduct this Transportation Impact Study (TIS) for a proposed Mixed-Use Development located at 741 24th Avenue & 853 Grey Road 28 in the Town of Hanover, Grey County.

This study includes existing traffic conditions analysis, a description of the proposed development, traffic forecasts for five years beyond development completion (2035), and an assessment of future traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The property owner is proposing to ultimately develop the currently vacant site as a mixed-use development. Phase 1 includes one six-storey apartment building with 87 units. Future phases are anticipated to include a commercial block with a total GFA of approximately 10,000 ft^2, located south of the Phase 1 lands, as well as an additional residential block to the east of the Phase 1 lands, comprising approximately 88 townhouse units. The exact unit count and layout of the future commercial and townhouse blocks have not yet been finalized.

A total of 140 parking spaces is proposed for the apartment building, which satisfies the Town's Zoning By-law requirements.

Vehicle access is proposed via direct access to 24th Avenue opposite 19th Street and access to 17th Street via a connection to 25th Avenue.

The development is assumed to be fully built out by 2030.

Conclusions

Based on the investigations conducted, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are operating at acceptable levels of service with no identified critical movements.
- **Development Trip Generation:** The development is forecast to generate 103 weekday AM peak hour trips, 124 weekday PM peak hour trips, and 114 Saturday peak hour trips.

- **2035 Background Traffic Conditions:** The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.
- **2035 Total Traffic Conditions:** The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.
- **Access Review:** The site access intersection on 24th Avenue is forecast to operate at satisfactory levels of service (LOS C or better) under 2035 total traffic conditions. A southbound auxiliary left-turn lane on 24th Avenue at the site access is not warranted under 2035 total traffic conditions.

  The available throat length between 24th Avenue and the apartment block access exceeds guidelines requirements.

  A preliminary desktop review indicates that intersection sight distance at the proposed access on 24th Avenue meets TAC requirements to the south (more than 300 m) but is slightly constrained for nighttime conditions to the north (approximately 124 m compared to the required 130 m) for left-turning traffic leaving the site and heading south on 24th Avenue.

  The available stopping sight distance (SSD) at the proposed access exceeds the minimum TAC requirement (85 metres) in both approach directions.

  Sight distance should be confirmed through detailed design of the proposed access.

  Site Circulation: Garbage, delivery, and fire trucks can safely circulate within the site with no issues.

Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed with no conditions related to off-site transportation improvements. Sight distance at the proposed access on 24th Avenue should be confirmed through detailed field measurements during the detailed design and construction stage, and any required minor adjustments should be implemented, if necessary.

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1 Introduction

1.1 Overview

SkyDev Hanover LP has retained Paradigm Transportation Solutions Limited to conduct this Transportation Impact Study (TIS) for the proposed Mixed-Use Development located at 741 24th Avenue & 853 Grey Road 28 in the Town of Hanover, Grey County.

Figure 1.1 illustrates the subject development location.

The property owner is proposing to ultimately develop the currently vacant site as a mixed-use development. Phase 1 includes one six-storey apartment building with 87 units. Future phases are anticipated to include a commercial block with a total GFA of approximately 10,000 ft^2, located south of the Phase 1 lands, as well as an additional residential block to the east of the Phase 1 lands, comprising approximately 88 townhouse units. The exact unit count and layout of the future commercial and townhouse blocks have not yet been finalized.

A total of 140 parking spaces is proposed for the apartment building, which satisfies the Town's Zoning By-law requirements.

Vehicle access is proposed via direct access to 24th Avenue opposite 19th Street and access to 17th Street via a connection to 25th Avenue.

The development is assumed to be fully built out by 2030.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with Town of Hanover and Grey County staff via e-mail in April 2026, includes:

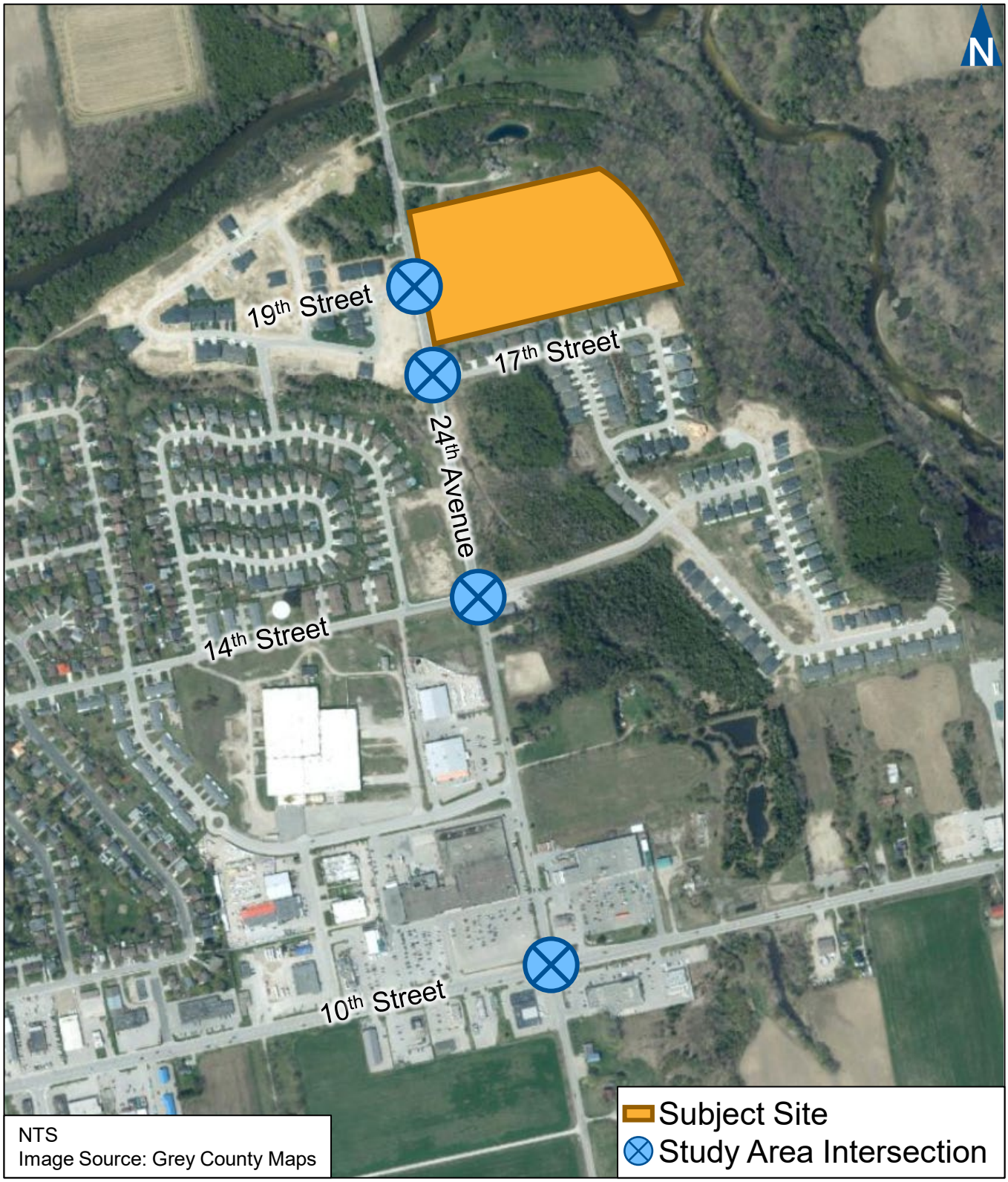
- assessing the current traffic and site conditions within the study area;
- forecasting background traffic growth for five years after development completion (2035);
- forecasting additional site-generated traffic arising from the proposed development;
- analysing future traffic impacts on the surrounding road network, and at the following study area intersections:
  - 24th Avenue and 19th Street/Site Access (unsignalized);

  - 24th Avenue and 17th Street (unsignalized);
  - 24th Avenue and 14th Street (unsignalized); and
  - 24th Avenue and 10th Street (signalized).
- providing any necessary recommendations to mitigate the site-generated traffic in a satisfactory manner.

Appendix A contains the pre-study consultation material and responses from Grey County and the Town of Hanover.

This study has been prepared in accordance with the requirements detailed by the Grey County Transportation Impact Study Guidelines[1].

[1] "Grey County Development Application Guidelines: Transportation Impact Report".



NTS
Image Source: Grey County Maps

paradigm TRANSPORTATION SOLUTIONS LIMITED

Location of Subject Site

741 24th Avenue & 853 Grey Rd 28, Hanover TIA
260040

Figure 1.1

2 Existing Conditions

2.1 Existing Roadways

The main roadways near the subject site considered in assessing the traffic impacts of the development include:

- **10th Street (Grey Road 4)** is an east-west arterial road[2] with a four-lane cross-section west of 24th Avenue and a two-lane cross-section to the east. Sidewalks are provided on both sides of the roadway. No dedicated cycling facilities are available. The posted speed limit is 50 km/h.
- **24th Avenue (Grey Road 28)** is a north-south arterial road[3] with a two-lane cross section. No dedicated cycling facilities are available. The posted speed limit is 50 km/h.
- **14th Street** is an east-west arterial road[4] with a two-lane cross-section. A sidewalk is provided on the north side of the roadway. The posted speed limit is 50 km/h.
- **17th Street** is an east-west local road[5] with a two-lane cross-section. A sidewalk is provided on the north side of the roadway. The posted speed limit is 50 km/h.
- **19th Street** is an east-west local road[6] with a two-lane cross-section. No sidewalks are provided on either side of the roadway. No dedicated cycling facilities are available. The assumed speed limit is 50 km/h.

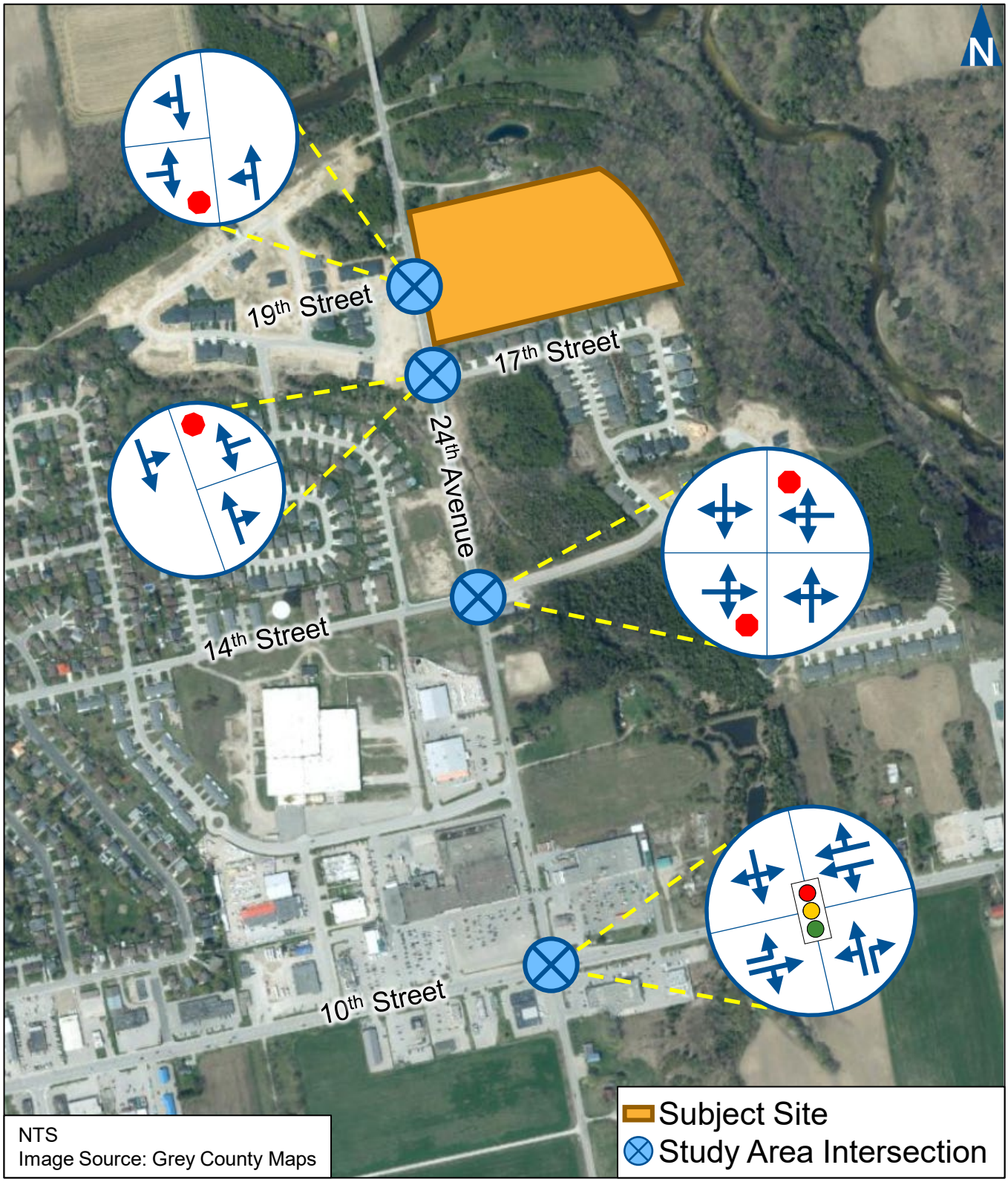
10th Street and 24th Avenue operate under the jurisdiction of the County. 14th Street and 19th Street operate under the jurisdiction of the Town.

The intersections of 24th Avenue and 19th Street; 24th Avenue and 17th Street; and 24th Avenue and 14th Street all operate under side-street stop-control.

Figure 2.1 illustrates the existing lane configuration and traffic control at the study area intersections.

---

2 *Town of Hanover Official Plan Schedule 'C' Transportation*, February 2016.
3 *Town of Hanover Official Plan Schedule 'C' Transportation*, February 2016.
4 *Town of Hanover Official Plan Schedule 'C' Transportation*, February 2016.
5 *Town of Hanover Official Plan Schedule 'C' Transportation*, February 2016.
6 *Town of Hanover Official Plan Schedule 'C' Transportation*, February 2016.



NTS
Image Source: Grey County Maps

paradigm TRANSPORTATION SOLUTIONS LIMITED

Existing Lane Configuration and Traffic Control

741 24th Avenue & 853 Grey Rd 28, Hanover TIA
260040

Figure 2.1

2.2 Transit Service

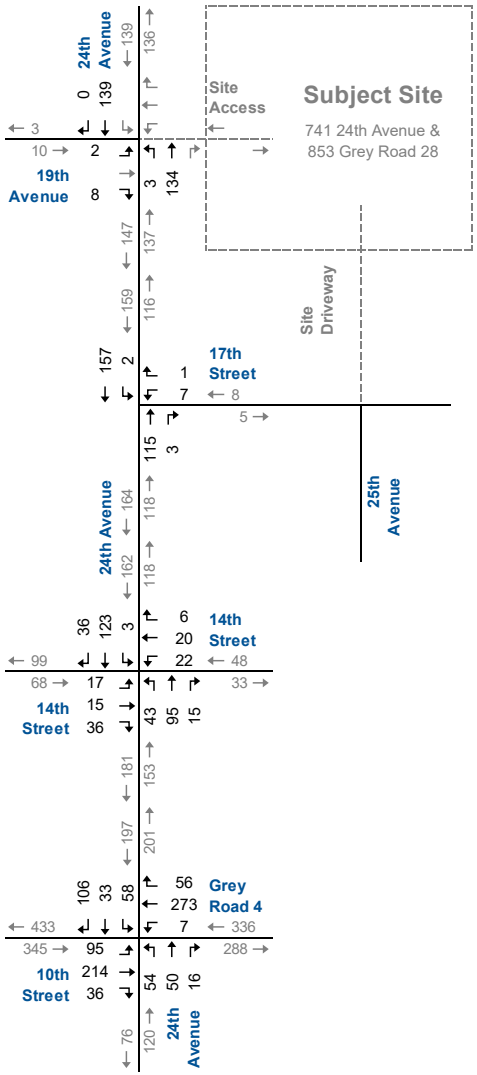
No transit service is provided within the study area.

2.3 Traffic Volumes

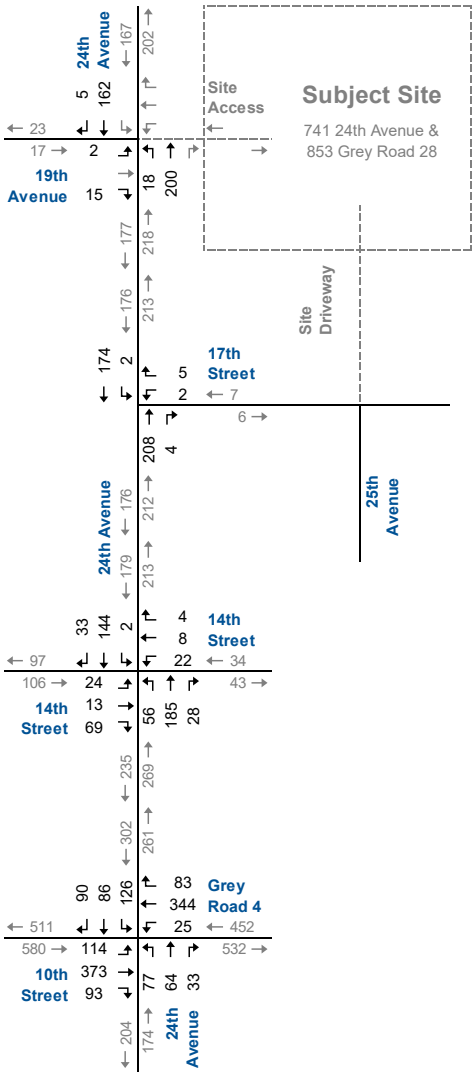
Paradigm collected turning movement counts at the study area intersections on 23 and 25 April 2026. **Appendix B** contains the detailed traffic counts and traffic control signal phasing/timings for the study area intersections.

Figure 2.2 illustrates the existing AM and PM weekday and Saturday peak hour traffic volumes.

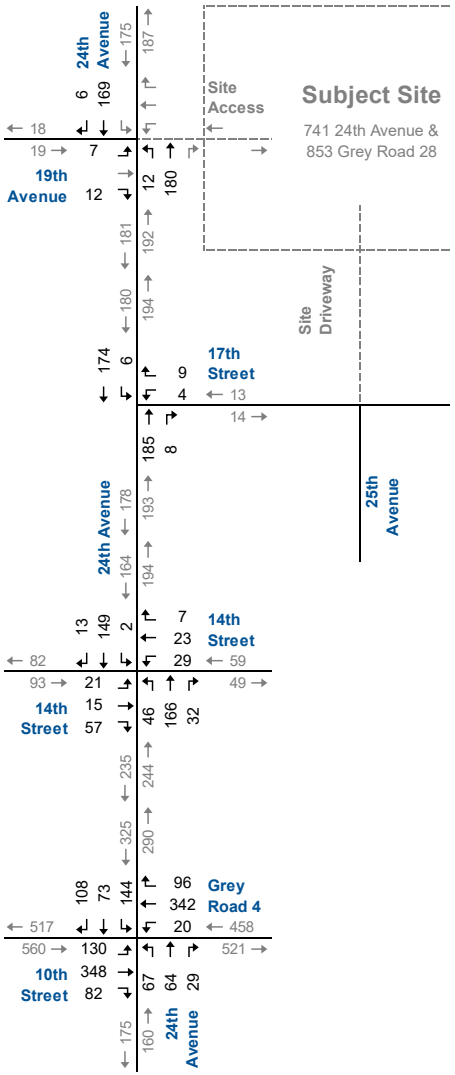
AM Peak Hour



PM Peak Hour



Saturday Peak Hour



Existing Traffic Volumes

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 2.2

2.4 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal to or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity (v/c) ratio is greater than 1.00, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations at the study area intersections have been assessed using Synchro 12. Movements at are considered critical under the following conditions:

- LOS F for individual movements or overall intersection operations, or v/c ratios for individual movements increased to 0.85 or above; and
- queues for an individual movement are projected to exceed available turning lane storage.

Table 2.1 summarizes the results of the intersection operational analysis under existing conditions, including the weekday AM and PM and Saturday peak hour LOS, v/c ratios, and 95th percentile queues.

The results indicate that the study area intersections are operating at acceptable levels of service.

Appendix C contains the detailed Synchro 12 reports.

TABLE 2.1: EXISTING TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	24th Avenue & 19th Street	TWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	**A**
			Delay	10		>	**10**					<	8		**0**		0	>	**0**	**0**
			V/C	0.02		>						<	0.00				0.00	>		
			Q	0		>						<	0				0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					10		>	**10**		0	>	**0**	<	8		**0**	**0**
			V/C					0.01		>			0.00	>		<	0.00			
			Q					0		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	11	>	**11**	<	12	>	**12**	<	8	>	**2**	<	8	>	**0**	**4**
			V/C	<	0.12	>		<	0.10	>		<	0.04	>		<	0.00	>		
			Q	<	3	>		<	2	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	A	A	>	**A**	<	B	>	**B**	<	C	B	**C**	<	C	>	**C**	**B**
			Delay	7	7	>	**7**	<	11	>	**11**	<	21	20	**21**	<	23	>	**23**	**13**
			V/C	0.17	0.26	>		<	0.24	>		<	0.26	0.05		<	0.50	>		
			Q	0	1	>		<	1	>		<	6	1		<	12	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	29		<	-	>		
PM Peak Hour	24th Avenue & 19th Street	TWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	**A**
			Delay	10		>	**10**					<	8		**1**		0	>	**0**	**1**
			V/C	0.02		>						<	0.01				0.00	>		
			Q	1		>						<	0				0	>		
	24th Avenue & 17th Street	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	**A**
			Delay					10		>	**10**		0	>	**0**	<	8		**0**	**0**
			V/C					0.01		>			0.00	>		<	0.00			
			Q					0		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	12	>	**12**	<	15	>	**15**	<	8	>	**2**	<	8	>	**0**	**4**
			V/C	<	0.20	>		<	0.10	>		<	0.05	>		<	0.00	>		
			Q	<	5	>		<	2	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	B	B	>	**B**	<	B	>	**B**	<	B	B	**B**	<	C	>	**C**	**B**
			Delay	12	14	>	**14**	<	17	>	**17**	<	19	17	**19**	<	25	>	**25**	**17**
			V/C	0.24	0.54	>		<	0.35	>		<	0.29	0.06		<	0.63	>		
			Q	2	4	>		<	9	>		<	8	2		<	26	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	28		<	-	>		
Saturday Peak Hour	24th Avenue & 19th Street	TWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	**A**
			Delay	10		>	**10**					<	8		**0**		0	>	**0**	**1**
			V/C	0.03		>						<	0.01				0.00	>		
			Q	1		>						<	0				0	>		
	24th Avenue & 17th Street	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	**A**
			Delay					10		>	**10**		0	>	**0**	<	8		**0**	**0**
			V/C					0.02		>			0.00	>		<	0.01			
			Q					1		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	12	>	**12**	<	14	>	**14**	<	8	>	**1**	<	8	>	**0**	**4**
			V/C	<	0.15	>		<	0.13	>		<	0.04	>		<	0.00	>		
			Q	<	4	>		<	4	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	B	B	>	**B**	<	B	>	**B**	<	B	B	**B**	<	C	>	**C**	**B**
			Delay	13	14	>	**14**	<	18	>	**18**	<	19	17	**18**	<	25	>	**25**	**18**
			V/C	0.28	0.50	>		<	0.37	>		<	0.26	0.06		<	0.64	>		
			Q	2	6	>		<	11	>		<	8	2		<	30	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	28		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

3 Development Concept

3.1 Development Description

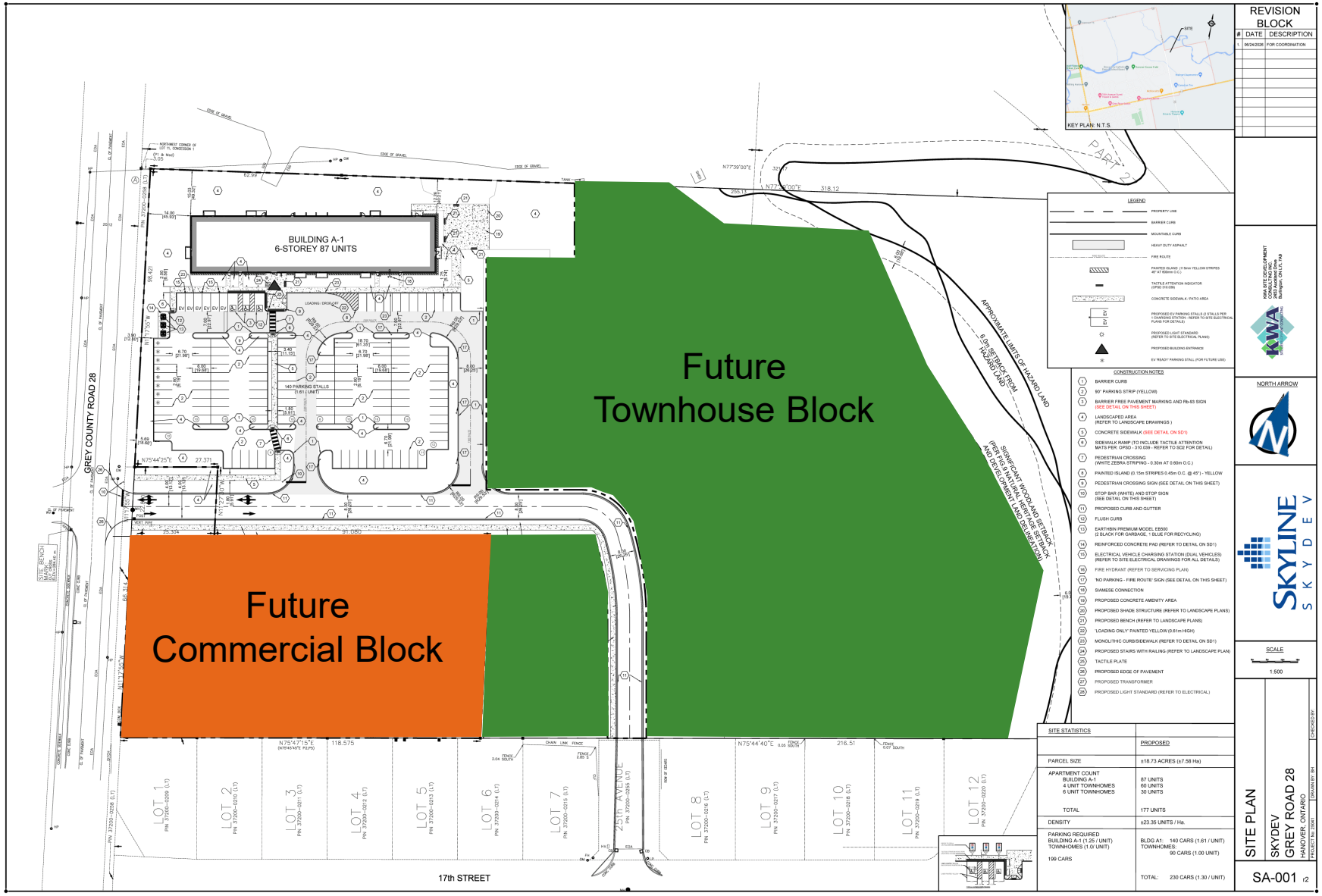
The property owner is proposing to ultimately develop the currently vacant site as a mixed-use development. Phase 1 includes one six-storey apartment building with 87 units. Future phases are anticipated to include a commercial block with a total GFA of approximately 10,000 ft^2, located south of the Phase 1 lands, as well as an additional residential block to the east of the Phase 1 lands, comprising approximately 88 townhouse units. The exact unit count and layout of the future commercial and townhouse blocks have not yet been finalized.

A total of 140 parking spaces is proposed for the apartment building, which satisfies the Town's Zoning By-law requirements.

Vehicle access is proposed via direct access to 24th Avenue opposite 19th Street and access to 17th Street via a connection to 25th Avenue.

The development is assumed to be fully built out by 2030.

Figure 3.1 illustrates the development concept.



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Concept Site Plan

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 3.1

3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual[7] rates were used to forecast the peak hour traffic volumes generated by the subject development based on following ITE Land Use Codes:

- 215, Single-Family Attached Housing;
- 221, Multifamily Housing (Mid-Rise); and
- 822, Strip Retail Plaza (<40k GFA).

Internal trips between the residential and commercial uses have been estimated based on the National Cooperative Highway Research Program (NCHRP)[8] Internal Trip Capture Estimation Tool included in **Appendix D**.

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development.

TABLE 3.1: TRIP GENERATION

Land Use Code	Units/GFA		AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
			Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
215: Single-Family Attached Housing	88	Units	Eq	9	28	**37**	Eq	24	18	**42**	0.47	20	21	**41**
221: Multifamily Housing (Mid-Rise)	87	Units	Eq	7	22	**29**	Eq	22	12	**34**	0.36	16	15	**31**
822: Strip Retail Plaza (<40k)	10,000	sq. ft.	3.93	21	18	**39**	Eq	38	38	**76**	6.63	33	33	**66**
Internal Trip Reduction				*-1*	*-1*	***-2***		*-14*	*-14*	***-28***		*-12*	*-12*	***-24***
Total Trip Generation				**36**	**67**	**103**		**70**	**54**	**124**		**57**	**57**	**114**

LUC 215 | **AM:** T = 0.59(X) - 15.25 | **PM:** T = 0.57(X) - 7.84
LUC 221 | **AM:** T = 0.42(X) - 7.77 | **PM:** T = 0.36(X) + 3.07
LUC 822 | **PM:** Ln(T) = 0.68 Ln(X) + 2.77

3.3 Development Trip Distribution and Assignment

The trip distribution was determined based on observed north-south travel patterns of traffic to/from the residential subdivision immediately south of the subject site, accessed via 17th Street and the east leg of 14th Street.

An overall directional split of 20% to/from the north and 80% to/from the south was applied to site-generated traffic on 24th Avenue. The southbound traffic was then further distributed across the study area intersections based on the observed turning movement patterns at the study area intersections.

---

7 Institute of Transportation Engineers, *Trip Generation Manual,* 12th ed., (Washington, DC: ITE, 2025).

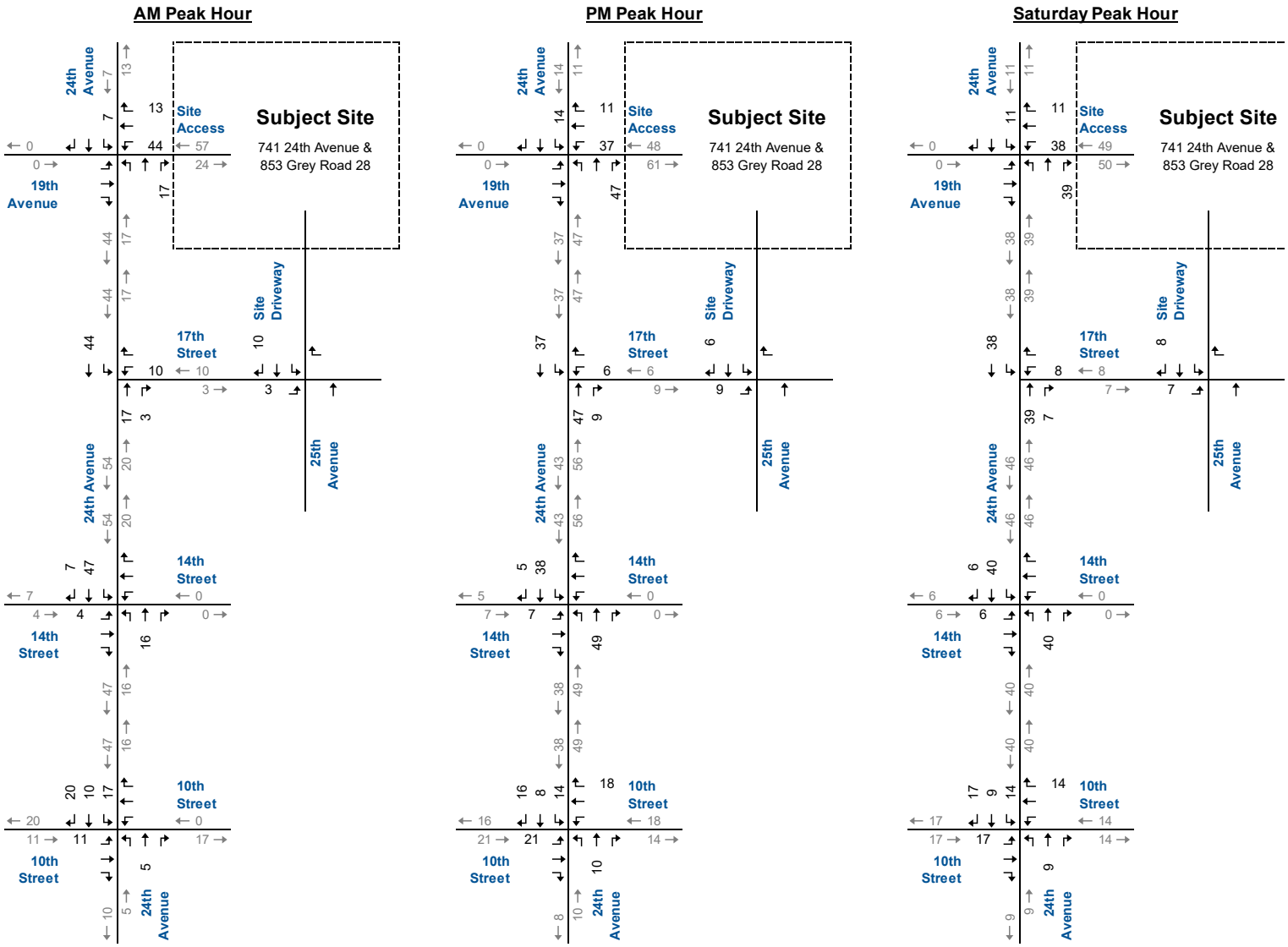
8 NCHRP, "Enhancing Internal Trip Capture Estimation for Mixed-Use Developments", 2010.

Table 3.2 summarizes the breakdown of trip distributions used in this study.

TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Distribution
North via 24th Avenue	20%
South via 24th Avenue	15%
East via 10th Street	25%
West via 14th Street	10%
West via 10th Street	30%
Total	**100%**

Figure 3.2 illustrates the site-generated traffic volumes for the weekday AM and PM and Saturday peak hours.



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Site Generated Traffic Volumes

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 3.2

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions in this section includes forecast future background and total traffic volumes, and the analyses at a future horizon five years after development completion (2035).

4.1 Background Traffic Forecasts

To derive the generalized background traffic volumes, a growth rate of 2% was applied to the existing roadway volumes. The growth rate is based on the projected 1.9% per annum population growth between 2026 and 2036 detailed in the 2026 Growth Management Strategy Update Report.

4.1.1 Other Area Developments

The residential subdivision development located on the west side of 24th Avenue, opposite the subject development and accessed via 19th Street. This development is proposed to consist of 91 residential units, comprising 73 single-family homes and 18 semi-detached homes. The weekday AM and PM site-generated traffic volumes for this development were estimated and assigned as part of other area developments in a 2018 TIS[9] prepared by WSP for the now-completed Saugeen Cedar Heights East subdivision. Saturday site trip information was not included in the TIS. Based on the ITE Trip Generation Manual, the development is forecast to generate 85 Saturday peak hour trips[10]. This development is currently under construction and is assumed to be completed by 2035.

Figure 4.1 illustrates the location of the other area development.

Figure 4.2 illustrates the other area development traffic volumes.

---

9 Prepared by WSP, *Saugeen Cedar Heights East, Town of Hanover*, July 2018.

10 Based on the 12th Edition of the Trip Generation Manual, the development is forecast to generate 63 AM peak hour trips and 74 PM peak hour trips. As shown in the Saugeen Cedar Heights TIS, the development is forecast to generate 68 AM peak hour trips and 91 PM peak hours trips. Thus, the original volumes are conservatively used.

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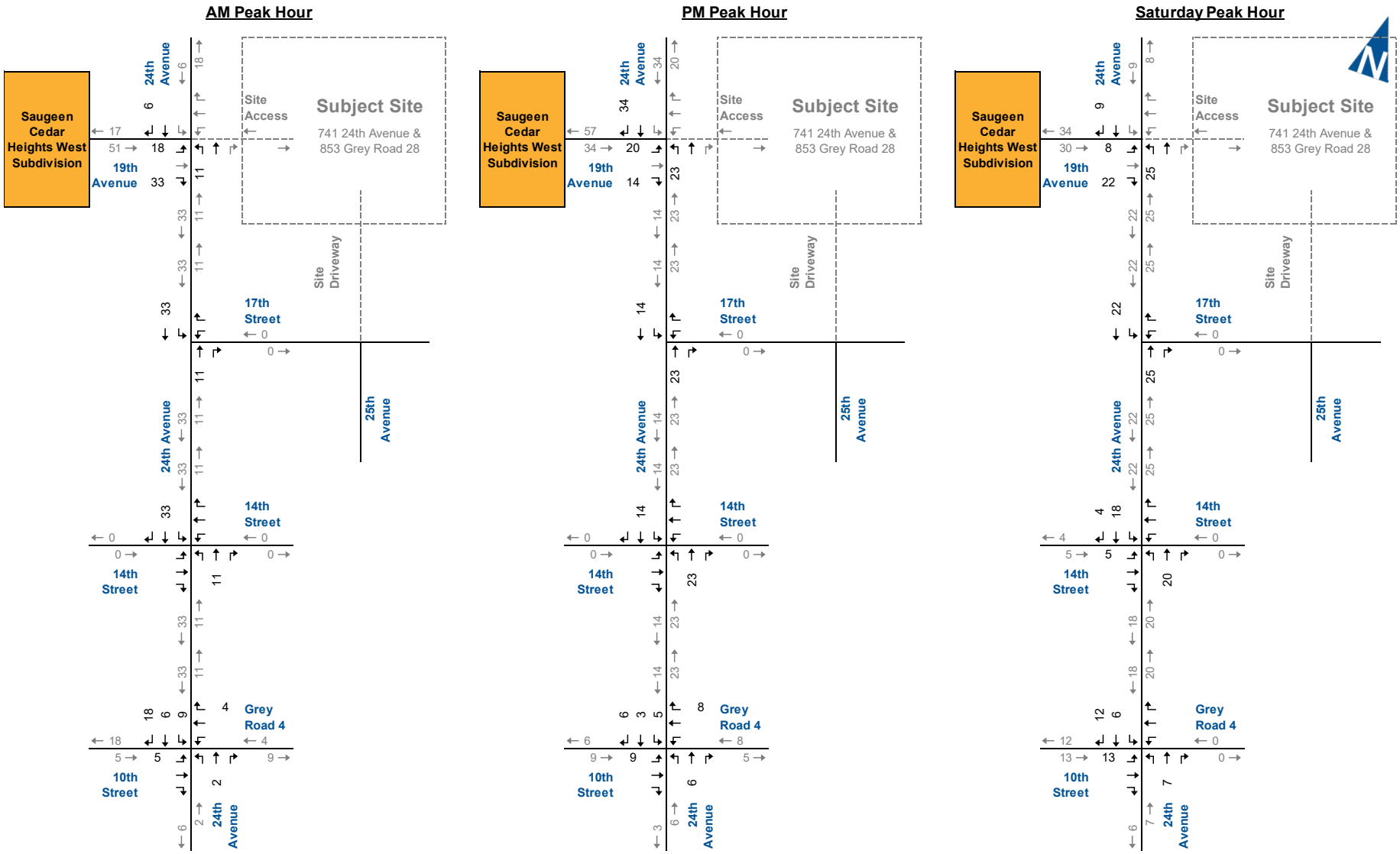
Location of Other Area Development

741 24th Avenue & 853 Grey Rd 28, Hanover TIA
260040

Figure 4.1



Other Area Development Traffic Volumes
Saugeen Cedar Heights West

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 4.2

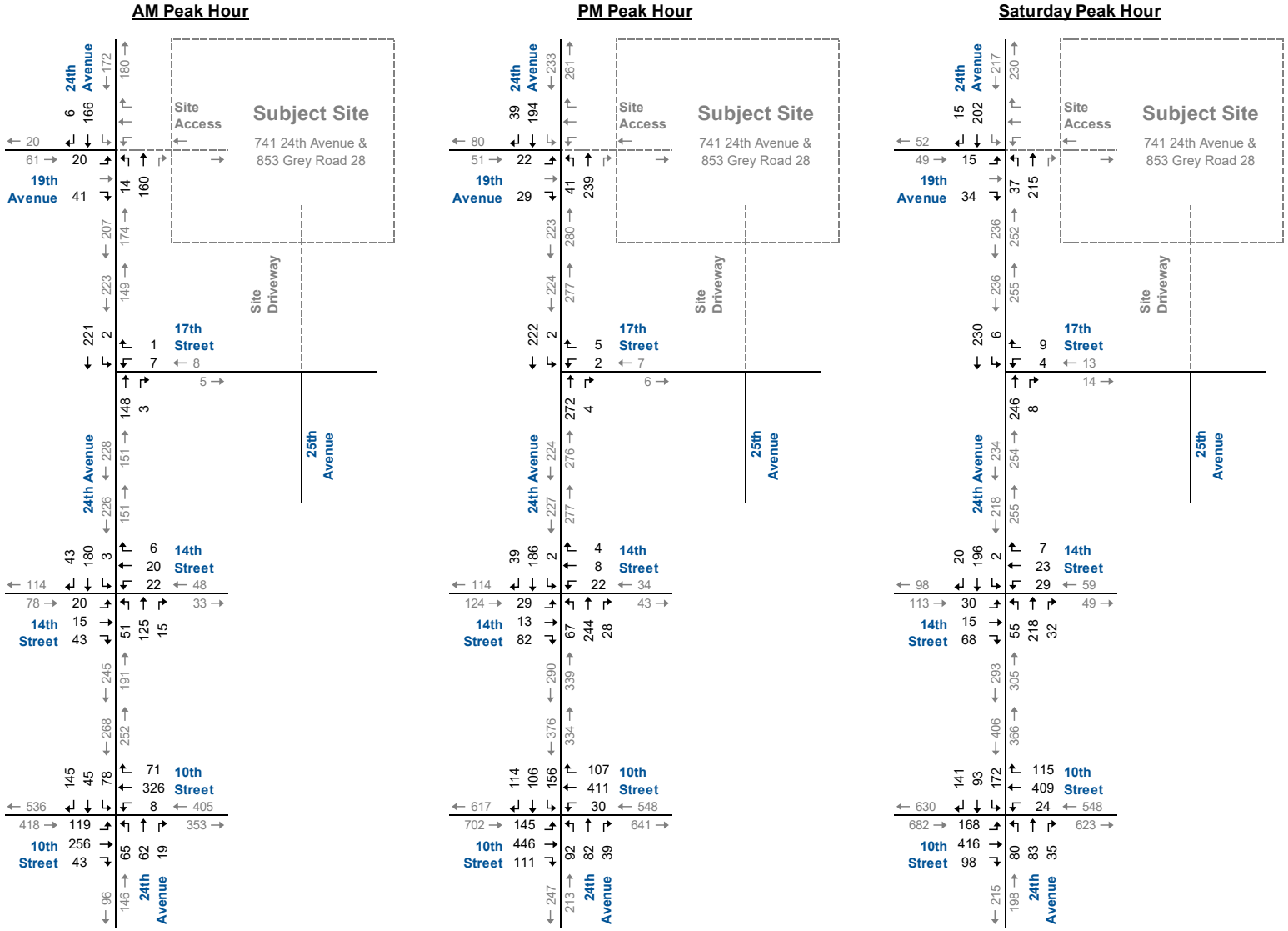
4.2 2035 Background Traffic Operations

Figure 4.3 illustrates the 2035 background traffic volumes, including road traffic growth and future development traffic.

The 2035 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

Table 4.1 summarizes the results of the 2035 background traffic operations. The results indicate that the study area intersections are forecast to operate at acceptable levels of service with no noted critical movements.

Appendix E contains the supporting detailed Synchro 12 reports.



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2035 Background Traffic Volumes

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 4.3

TABLE 4.1: 2035 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	24th Avenue & 19th Street	TWSC	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	11		>	**11**					<	8		**1**		0	>	**0**	**2**
			V/C	0.11		>						<	0.01				0.00	>		
			Q	3		>						<	0				0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					11		>	**11**		0	>	**0**	<	8		**0**	**0**
			V/C					0.02		>			0.00	>		<	0.00			
			Q					1		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	13	>	**13**	<	14	>	**14**	<	8	>	**2**	<	8	>	**0**	**4**
			V/C	<	0.16	>		<	0.12	>		<	0.05	>		<	0.00	>		
			Q	<	4	>		<	3	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	A	A	>	**A**	<	B	>	**B**	<	C	B	**B**	<	C	>	**C**	**B**
			Delay	10	10	>	**10**	<	14	>	**14**	<	20	18	**20**	<	24	>	**24**	**16**
			V/C	0.24	0.34	>		<	0.32	>		<	0.30	0.05		<	0.60	>		
			Q	1	1	>		<	4	>		<	8	1		<	19	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	29		<	-	>		
PM Peak Hour	24th Avenue & 19th Street	TWSC	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	12		>	**12**					<	8		**1**		0	>	**0**	**2**
			V/C	0.09		>						<	0.03				0.00	>		
			Q	2		>						<	1				0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					10		>	**11**		0	>	**0**	<	8		**0**	**0**
			V/C					0.01		>			0.00	>		<	0.00			
			Q					0		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	14	>	**14**	<	18	>	**18**	<	8	>	**2**	<	8	>	**0**	**4**
			V/C	<	0.27	>		<	0.12	>		<	0.06	>		<	0.00	>		
			Q	<	8	>		<	3	>		<	2	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	B	C	>	**C**	<	C	>	**C**	<	B	B	**B**	<	C	>	**C**	**C**
			Delay	17	22	>	**21**	<	24	>	**24**	<	18	16	**18**	<	28	>	**28**	**23**
			V/C	0.38	0.72	>		<	0.51	>		<	0.33	0.06		<	0.72	>		
			Q	8	41	>		<	27	>		<	12	2		<	46	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	28		<	-	>		
Saturday Peak Hour	24th Avenue & 19th Street	TWSC	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	11		>	**11**					<	8		**1**		0	>	**0**	**2**
			V/C	0.08		>						<	0.03				0.00	>		
			Q	2		>						<	1				0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					10		>	**10**		0	>	**0**	<	8		**0**	**0**
			V/C					0.02		>			0.00	>		<	0.01			
			Q					1		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	13	>	**13**	<	16	>	**16**	<	8	>	**1**	<	8	>	**0**	**4**
			V/C	<	0.22	>		<	0.16	>		<	0.04	>		<	0.00	>		
			Q	<	6	>		<	4	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	B	C	>	**C**	<	C	>	**C**	<	B	B	**B**	<	C	>	**C**	**C**
			Delay	18	21	>	**21**	<	26	>	**26**	<	18	16	**18**	<	29	>	**29**	**24**
			V/C	0.44	0.66	>		<	0.52	>		<	0.30	0.06		<	0.74	>		
			Q	11	41	>		<	32	>		<	12	2		<	55	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	28		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.3 2035 Total Traffic Operations

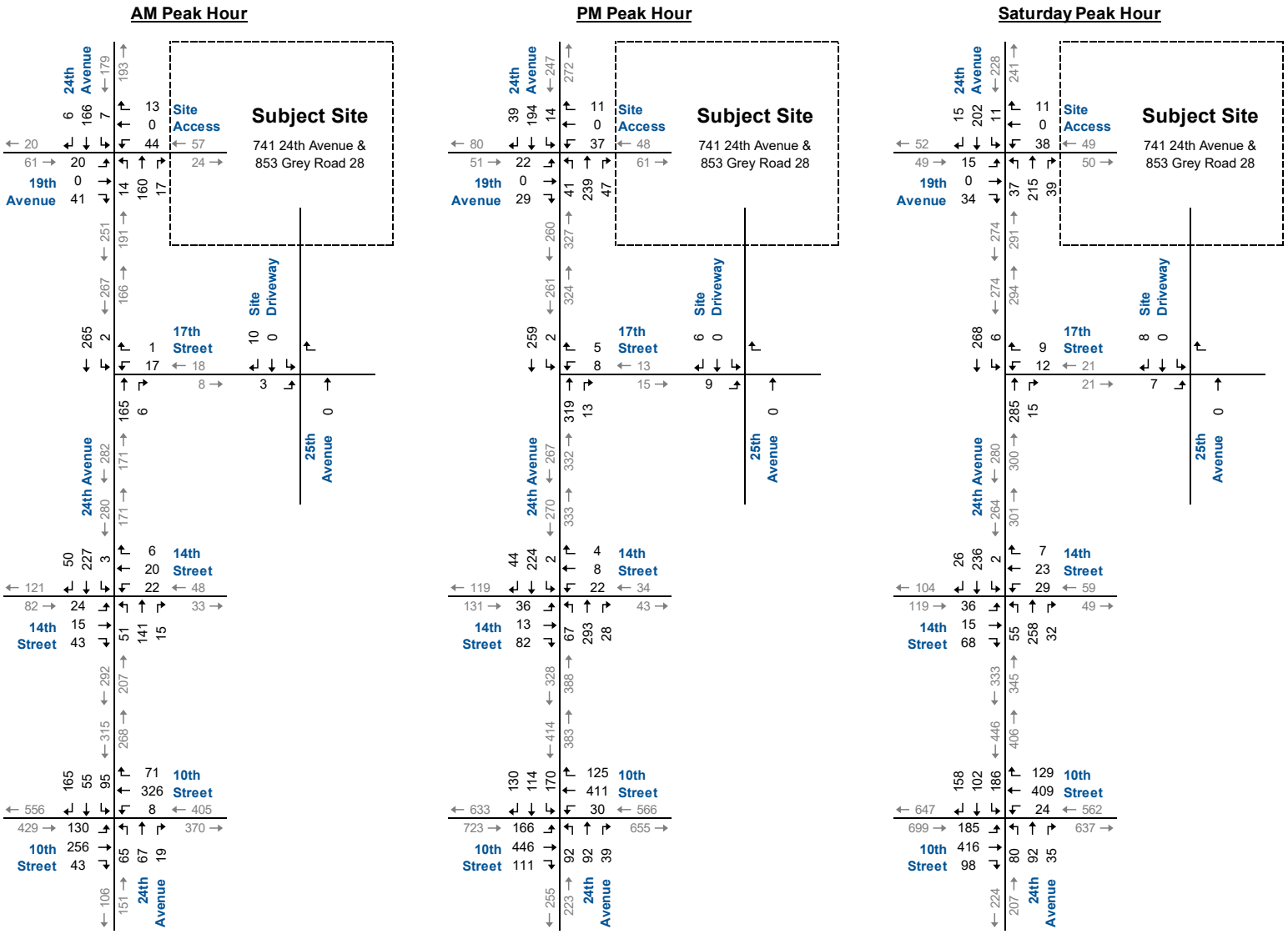
Figure 4.4 illustrates the 2035 total traffic volumes, including trips generated by the proposed development.

The 2035 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions.

Table 4.2 summarizes the results of the 2035 total traffic operations. The results indicate that the study area intersections are forecast to operate at acceptable levels of service with no noted critical movements.

The site access intersection on 24th Avenue is forecast to operate at satisfactory levels of service (LOS C or better).

Appendix F contains the supporting detailed Synchro 12 reports.



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2035 Total Traffic Volumes

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 4.4

TABLE 4.2: 2035 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	24th Avenue & 19th Street/Site Access	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	11	>	**11**	<	13	>	**13**	<	8	>	**1**	<	8	>	**0**	**3**
			V/C	<	0.12	>		<	0.12	>		<	0.01	>		<	0.01	>		
			Q	<	3	>		<	3	>		<	0	>		<	0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					12		>	**12**		0	>	**0**	<	8		**0**	**0**
			V/C					0.04		>			0.00	>		<	0.01			
			Q					1		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	14	>	**14**	<	16	>	**15**	<	8	>	**2**	<	8	>	**0**	**4**
			V/C	<	0.19	>		<	0.14	>		<	0.05	>		<	0.00	>		
			Q	<	5	>		<	4	>		<	2	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	B	B	>	**B**	<	B	>	**B**	<	B	B	**B**	<	C	>	**C**	**B**
			Delay	12	12	>	**12**	<	17	>	**17**	<	20	18	**19**	<	25	>	**25**	**18**
			V/C	0.28	0.36	>		<	0.35	>		<	0.30	0.04		<	0.65	>		
			Q	2	2	>		<	9	>		<	8	1		<	25	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	29		<	-	>		
PM Peak Hour	24th Avenue & 19th Street/Site Access	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	12	>	**12**	<	15	>	**15**	<	8	>	**1**	<	8	>	**0**	**3**
			V/C	<	0.10	>		<	0.13	>		<	0.03	>		<	0.01	>		
			Q	<	2	>		<	3	>		<	1	>		<	0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					12		>	**12**		0	>	**0**	<	8		**0**	**0**
			V/C					0.03		>			0.00	>		<	0.03			
			Q					1		>			0	>		<	1			
	24th Avenue & 14th Street	TWSC	LOS	<	C	>	**C**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	17	>	**17**	<	21	>	**21**	<	8	>	**1**	<	8	>	**0**	**4**
			V/C	<	0.33	>		<	0.15	>		<	0.06	>		<	0.00	>		
			Q	<	10	>		<	4	>		<	2	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	C	C	>	**C**	<	C	>	**C**	<	B	B	**B**	<	C	>	**C**	**C**
			Delay	20	25	>	**24**	<	29	>	**28**	<	18	16	**18**	<	32	>	**32**	**26**
			V/C	0.46	0.74	>		<	0.57	>		<	0.34	0.06		<	0.76	>		
			Q	14	59	>		<	38	>		<	14	3		<	61	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	27		<	-	>		
Saturday Peak Hour	24th Avenue & 19th Street/Site Access	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	11	>	**11**	<	14	>	**14**	<	8	>	**1**	<	8	>	**0**	**3**
			V/C	<	0.08	>		<	0.12	>		<	0.03	>		<	0.01	>		
			Q	<	2	>		<	3	>		<	1	>		<	0	>		
	24th Avenue & 17th Street	TWSC	LOS					B		>	**B**		A	>	**A**	<	A		**A**	**A**
			Delay					12		>	**12**		0	>	**0**	<	8		**0**	**0**
			V/C					0.04		>			0.00	>		<	0.01			
			Q					1		>			0	>		<	0			
	24th Avenue & 14th Street	TWSC	LOS	<	C	>	**C**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	15	>	**15**	<	18	>	**18**	<	8	>	**1**	<	8	>	**0**	**4**
			V/C	<	0.27	>		<	0.19	>		<	0.05	>		<	0.00	>		
			Q	<	8	>		<	5	>		<	1	>		<	0	>		
	24th Avenue & 10th Street	TCS	LOS	C	C	>	**C**	<	C	>	**C**	<	B	B	**B**	<	C	>	**C**	**C**
			Delay	21	24	>	**23**	<	30	>	**30**	<	18	16	**18**	<	33	>	**33**	**27**
			V/C	0.50	0.68	>		<	0.57	>		<	0.30	0.05		<	0.78	>		
			Q	16	56	>		<	40	>		<	14	2		<	70	>		
			Stor.	-	-	>		<	-	>		<	-	30		<	-	>		
			Avail.	-	-	>		<	-	>		<	-	28		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

5 Access and Circulation Review

The proposed development will be served by a primary all-moves access on 24th Avenue, aligned opposite 19th Street. The access will form the fourth leg of the intersection, connecting perpendicularly (at a 90-degree angle) to 24th Avenue.

A secondary connection is provided via 17th Street, accessed through a connection to 25th Avenue. This provides additional network connectivity and reduces the reliance on a single access point.

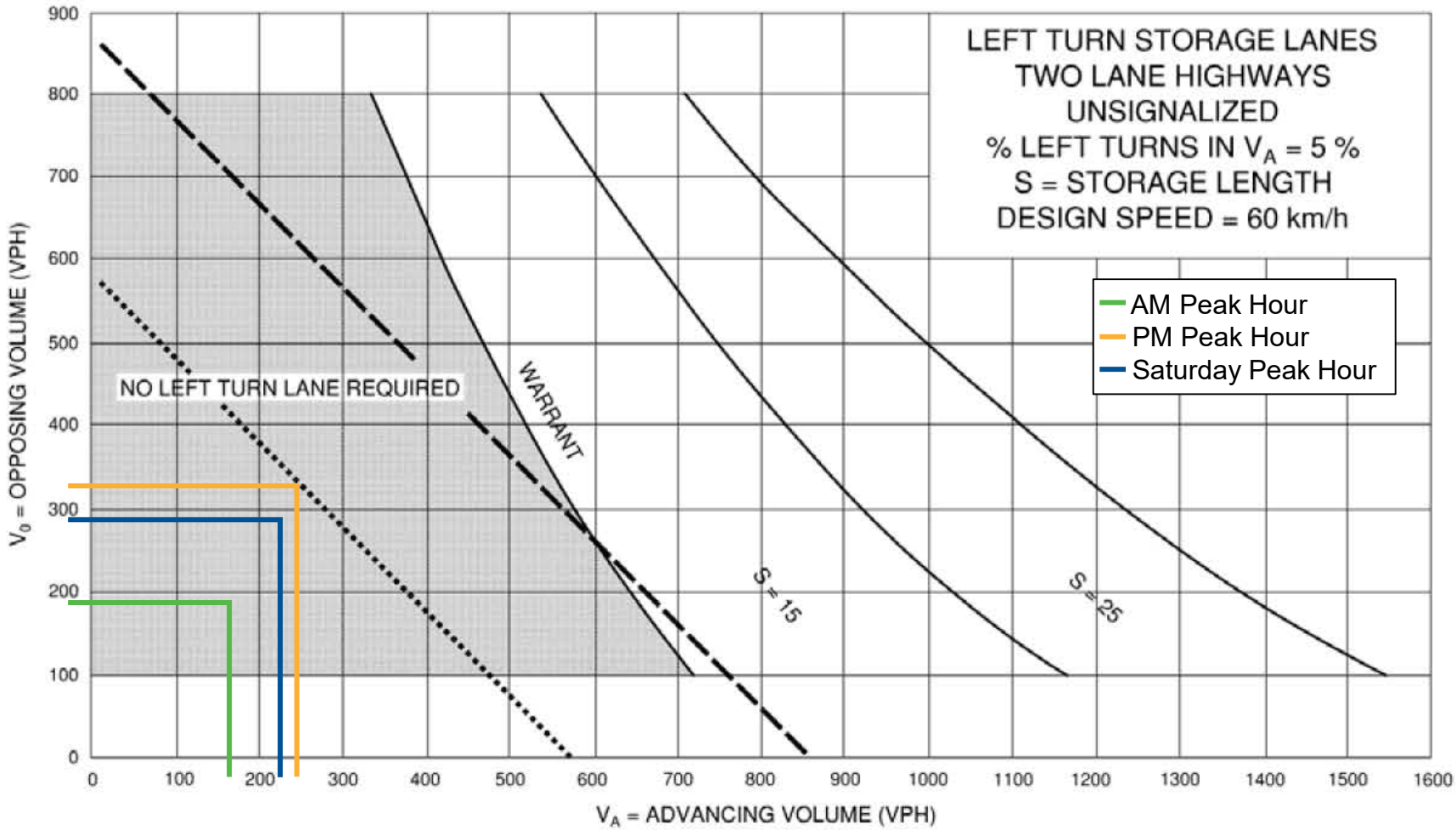
5.1 Auxiliary Left-Turn Lane

The need for an auxiliary southbound left-turn turning lane on 24th Avenue at the site access was assessed based on the requirements and procedures detailed in the Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads[11].The warrant has been calculated using the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 60 km/h (10 km/h over the assumed speed limit).

Based on these criteria, a southbound left-turn lane is not warranted on 24th Avenue at the site access intersection under 2035 total traffic conditions.

Figure 5.1 illustrates the warrant nomographs.

[11] *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*, October 2023.



Southbound Left-Turn Lane Warrant
24th Avenue and Site Access
2035 Total Traffic Conditions

741 24th Avenue & 853 Grey Road 4, Hanover TIA
260040

Figure 5.1

5.2 Throat Length and Queue Storage

The available driveway throat length from 24th Avenue to the apartment complex access is approximately 50 metres, which exceeds the TAC recommended minimum of 15 metres[12].

The projected outbound (westbound) queue length at the site access on 24th Avenue is projected to reach approximately three metres during each of the weekday AM and PM and Saturday peak hours. The available throat length provides sufficient storage for outbound vehicles without impeding the apartment block access.

Future access points associated with the commercial block should similarly be designed to meet or exceed TAC minimum throat length requirements.

5.3 Sight Distance Assessment

A preliminary desktop review of intersection sight distance (ISD) at the proposed access on 24th Avenue indicates:

- the available ISD to the south measures more than 300 metres, which exceeds TAC requirements; and
- the available ISD to the north (left turn from the site access onto 24th Avenue) measures approximately 124 metres under nighttime conditions, which is below the TAC minimum requirement of 130 metres for the operating conditions.

As such, the ISD to the north is currently slightly constrained and should be verified during the detailed design and construction stages.

The available stopping sight distance (SSD) at the proposed site access exceeds the minimum TAC requirement (85 metres) in both approach directions.

5.4 Site Circulation

Vehicle circulation analyses were performed using AutoTURN assessment software on the subject Site Plan provided to Paradigm. The following AutoTURN (AT) drawings are attached hereto in **Appendix G**:

- AT 01 – HSU (Garbage Truck);

[12] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads*, Table 8.9.3: Suggested Minimum Clear Throat Lengths for Major Driveways, 2017.

- AT 02 – HSU (Delivery Truck); and
- AT 03 & AT 04 – Fire Truck.

As shown in the above drawings, the garbage, delivery, and fire trucks can safely circulate through the subject site with no issues.

6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations conducted, it is concluded that:

- **Existing Traffic Conditions:** The study area intersections are operating at acceptable levels of service with no identified critical movements.
- **Development Trip Generation:** The development is forecast to generate 103 weekday AM peak hour trips, 124 weekday PM peak hour trips, and 114 Saturday peak hour trips.
- **2035 Background Traffic Conditions:** The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.
- **2035 Total Traffic Conditions:** The study area intersections are forecast to operate at acceptable levels of service with no identified critical movements.
- **Access Review:** The site access intersection on 24th Avenue is forecast to operate at satisfactory levels of service (LOS C or better) under 2035 total traffic conditions. A southbound auxiliary left-turn lane on 24th Avenue at the site access is identified as not warranted under 2035 total traffic conditions.

  The available throat length between 24th Avenue and the apartment block access exceeds guidelines requirements.

  A preliminary desktop review indicates that intersection sight distance at the proposed access on 24th Avenue meets TAC requirements to the south (more than 300 m) but is constrained to the north (approximately 75 m). Sight distance should be confirmed through detailed design and field verification.
- **Site Circulation:** Garbage, delivery, and fire trucks can safely circulate within the site with no issues.

6.2 Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed with no conditions related to off-site transportation improvements. Confirmation of intersection sight distance at the proposed access on 24th Avenue should be undertaken at the detailed design and construction stage, with any required mitigation implemented, if necessary.

Appendix A

Pre-Study Consultation

From:	Jamie McCarthy
To:	Patrick Neal
Cc:	Jim Mallett; Sean Potter; Trevor Ireton
Subject:	RE: (260040) 741 24th Avenue & 853 Grey Road 28, Hanover TIA - Pre-Study Consultation
Date:	April 24, 2026 8:28:47 AM
Attachments:	image002.png image003.png

Hi Patrick,

The Town is in agreement with your approach and thank you to Sean for the information! It is appreciated that you provided this.

If you have any further questions, please feel free to reach out.

Take care,
Jamie

Jamie McCarthy
Manager of Public Works & Projects
Town of Hanover
341 10th St. Hanover ON N4N 1P5
t 519.364.2780 x 1229 | **f** 519.364.6456
e jmccarthy@hanover.ca | **hanover.ca**

This communication is confidential and may contain information protected by privacy legislation. Unauthorized use is strictly prohibited. If you have received this communication in error, please notify sender immediately by telephone.

Please consider the environment before printing this e-mail

From: Sean Potter <sean.potter@grey.ca>
Sent: April 24, 2026 8:00 AM
To: Patrick Neal <pneal@ptsl.com>; Jamie McCarthy <jmccarthy@hanover.ca>; Trevor Ireton <Trevor.Ireton@grey.ca>
Cc: Jim Mallett <jmallett@ptsl.com>
Subject: RE: (260040) 741 24th Avenue & 853 Grey Road 28, Hanover TIA - Pre-Study Consultation

Good morning Patrick,

Our Planning and Engineering staff have had an opportunity to review your requests. Engineering Services is happy with your approach and has attached the current signal timing for the Grey Road 28 and Grey Road 4 intersection. We have also attached two previous traffic impact studies close to your area of assessment that may be of help.

Growth related data can best be found here: https://www.grey.ca/government/strategic-planning-and-studies/growth-management-strategy

West Grey and Hanover have just ratified and agreement to transfer lands from West Grey to the Town. While there is still some planning process to go to get these lands into the settlement area, there will be the potential for future urban growth and development on these lands, which may be applicable to study considerations. See: https://www.hanover.ca/boundaryadjustment

Lastley, there is another proposed development located at 936 10th Street in Hanover. However, we have not yet deemed that one complete yet, so the information is not publicly available at this time. Our Planning staff recommend that you reach out to the agents for this proposal for further information regarding the specifics, to include within the calculations. The contact information is:

Agent: Gagnon Walker Domes Ltd.
Address: 7685 Hurontario Street Suite 501
Email Address: rdomes@gwdplanners.com
Telephone Number: 950-796-5790

Please do not infer that our response represents the views or wishes of the Town of Hanover. Ensure you have heard from the Town of Hanover prior completing this TIA.

Regards,

Sean Potter
Supervisor – Capital Assets Transportation
Phone: +1-548-877-0892

From: Patrick Neal <pneal@ptsl.com>
Sent: April 22, 2026 10:17 AM
To: jmccarthy@hanover.ca; Trevor Ireton <Trevor.Ireton@grey.ca>
Cc: Jim Mallett <jmallett@ptsl.com>; Sean Potter <sean.potter@grey.ca>
Subject: (260040) 741 24th Avenue & 853 Grey Road 28, Hanover TIA - Pre-Study Consultation

> Some people who received this message don't often get email from pneal@ptsl.com. Learn why this is important

[EXTERNAL EMAIL]

Hi Jamie and Trevor,

We have been retained to complete the Transportation Impact Assessment (TIA) for the proposed Mixed-Use Development located at 741 24th Avenue & 853 Grey Road 28 in the

Town of Hanover, Grey County.

The property owner is proposing to ultimately develop the currently vacant site as a mixed-use development. Phase 1 includes one six-storey apartment building with 87 units. Future phases are anticipated to include a commercial block with a total GFA of approximately 10,000 ft^2, located south of the Phase 1 lands, as well as an additional residential block to the east of the Phase 1 lands, comprising approximately 88 townhouse units. The exact unit count and layout of the future commercial and townhouse blocks have not yet been finalized.

A total of 140 parking spaces are proposed for the apartment building, which satisfies the Town's Zoning By-law requirements.

Vehicle access is proposed via direct access to Grey Road 28 opposite 19th Street and access to 17th Street via a connection to 25th Avenue.

The Concept Site Plan is attached.

Based on the above information, we have prepared the following scope of work for review/approval:

- Analysis Periods: Weekday AM/PM peak hours.
- Study Area intersections:
  - Grey Road 28 and 19th Street/Site Access (unsignalized);
  - Grey Road 28 and 17th Street (unsignalized);
  - Grey Road 28 and 14th Street (unsignalized); and
  - Grey Road 28 and 10th Street (signalized).
- We will record turning movement counts at the above intersections.
- **Please provide the signal timing plan for the intersection of Grey Road 28 and 10th Street.**
- Horizon Year: five years from full development completion.
- Background Growth: 2.0% compounded per annum, **please confirm.**
- Background Developments: **Please confirm.**
- Trip Generation: ITE Trip Generation Manual 12th Edition.
- Trip Distribution: Existing traffic patterns.
- Access Review.

Please let us know if you have any questions or comments.

Regards,

Patrick Neal, P.Eng.
Transportation Engineer

Paradigm Transportation Solutions Limited
5A-150 Pinebush Road, Cambridge ON N1R 8J8
pneal@ptsl.com | 416.688.7338 | www.ptsl.com

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Appendix B

Existing Traffic Data

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

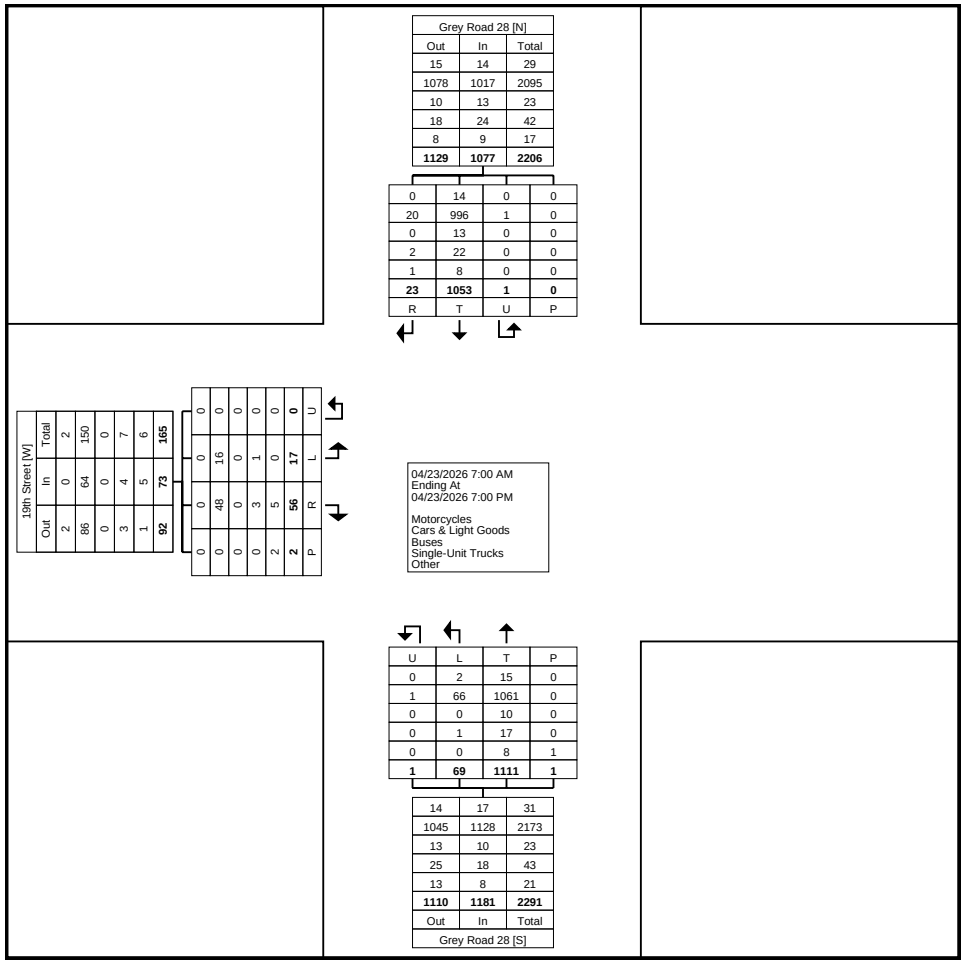
Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	1	1	15	0	0	16	14	3	0	0	17	34
7:15 AM	2	2	0	0	4	2	18	1	0	21	22	0	0	0	22	47
7:30 AM	0	0	0	0	0	1	17	0	0	18	30	0	0	0	30	48
7:45 AM	1	2	0	0	3	1	18	0	0	19	36	0	0	0	36	58
Hourly Total	3	5	0	0	8	5	68	1	0	74	102	3	0	0	105	187
8:00 AM	0	4	0	0	4	1	14	0	0	15	29	1	0	0	30	49
8:15 AM	1	1	0	0	2	4	32	0	0	36	49	0	0	0	49	87
8:30 AM	0	2	0	0	2	1	25	0	0	26	39	1	0	0	40	68
8:45 AM	0	2	0	0	2	2	23	0	0	25	32	0	0	0	32	59
Hourly Total	1	9	0	0	10	8	94	0	0	102	149	2	0	0	151	263
9:00 AM	1	1	0	0	2	1	30	0	0	31	35	0	0	0	35	68
9:15 AM	0	0	0	0	0	1	32	0	0	33	25	0	0	0	25	58
9:30 AM	0	2	0	0	2	0	33	0	0	33	33	0	0	0	33	68
9:45 AM	1	5	0	0	6	1	39	0	0	40	46	0	0	0	46	92
Hourly Total	2	8	0	0	10	3	134	0	0	137	139	0	0	0	139	286
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	0	0	0	3	30	0	0	33	31	1	0	0	32	65
11:45 AM	1	1	0	0	2	1	46	0	0	47	31	1	0	0	32	81
Hourly Total	1	1	0	0	2	4	76	0	0	80	62	2	0	0	64	146
12:00 PM	0	0	0	0	0	4	30	0	0	34	38	0	0	0	38	72
12:15 PM	1	1	0	0	2	3	48	0	0	51	32	0	0	0	32	85
12:30 PM	1	1	0	0	2	6	38	0	0	44	28	0	0	0	28	74
12:45 PM	1	0	0	0	1	5	39	0	0	44	41	2	0	0	43	88
Hourly Total	3	2	0	0	5	18	155	0	0	173	139	2	0	0	141	319
1:00 PM	0	2	0	0	2	1	58	0	0	59	27	2	0	0	29	90
1:15 PM	1	3	0	0	4	2	47	0	0	49	34	1	0	0	35	88
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	5	0	0	6	3	105	0	0	108	61	3	0	0	64	178
4:00 PM	0	2	0	0	2	4	42	0	0	46	43	1	0	0	44	92
4:15 PM	0	1	0	0	1	3	49	0	0	52	33	1	0	0	34	87
4:30 PM	1	3	0	0	4	0	35	0	0	35	38	0	0	0	38	77
4:45 PM	1	7	0	0	8	6	40	0	1	46	38	2	0	0	40	94
Hourly Total	2	13	0	0	15	13	166	0	1	179	152	4	0	0	156	350
5:00 PM	1	4	0	1	5	4	49	0	0	53	51	2	0	0	53	111
5:15 PM	0	2	0	0	2	6	53	0	0	59	41	0	0	0	41	102
5:30 PM	0	2	0	0	2	2	58	0	0	60	32	1	0	0	33	95

5:45 PM	0	2	0	0	2	3	36	0	0	39	35	1	0	0	36	77
Hourly Total	1	10	0	1	11	15	196	0	0	211	159	4	0	0	163	385
6:00 PM	1	1	0	1	2	0	41	0	0	41	30	1	0	0	31	74
6:15 PM	1	1	0	0	2	0	25	0	0	25	21	2	1	0	24	51
6:30 PM	1	1	0	0	2	0	25	0	0	25	17	0	0	0	17	44
6:45 PM	0	0	0	0	0	0	26	0	0	26	22	0	0	0	22	48
Hourly Total	3	3	0	1	6	0	117	0	0	117	90	3	1	0	94	217
Grand Total	17	56	0	2	73	69	1111	1	1	1181	1053	23	1	0	1077	2331
Approach %	23.3	76.7	0.0	-	-	5.8	94.1	0.1	-	-	97.8	2.1	0.1	-	-	-
Total %	0.7	2.4	0.0	-	3.1	3.0	47.7	0.0	-	50.7	45.2	1.0	0.0	-	46.2	-
Motorcycles	0	0	0	-	0	2	15	0	-	17	14	0	0	-	14	31
% Motorcycles	0.0	0.0	-	-	0.0	2.9	1.4	0.0	-	1.4	1.3	0.0	0.0	-	1.3	1.3
Cars & Light Goods	16	48	0	-	64	66	1061	1	-	1128	996	20	1	-	1017	2209
% Cars & Light Goods	94.1	85.7	-	-	87.7	95.7	95.5	100.0	-	95.5	94.6	87.0	100.0	-	94.4	94.8
Buses	0	0	0	-	0	0	10	0	-	10	13	0	0	-	13	23
% Buses	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	0.8	1.2	0.0	0.0	-	1.2	1.0
Single-Unit Trucks	1	3	0	-	4	1	17	0	-	18	22	2	0	-	24	46
% Single-Unit Trucks	5.9	5.4	-	-	5.5	1.4	1.5	0.0	-	1.5	2.1	8.7	0.0	-	2.2	2.0
Articulated Trucks	0	0	0	-	0	0	8	0	-	8	8	0	0	-	8	16
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	0.7	0.8	0.0	0.0	-	0.7	0.7
Bicycles on Road	0	5	0	-	5	0	0	0	-	0	0	1	0	-	1	6
% Bicycles on Road	0.0	8.9	-	-	6.8	0.0	0.0	0.0	-	0.0	0.0	4.3	0.0	-	0.1	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	0.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

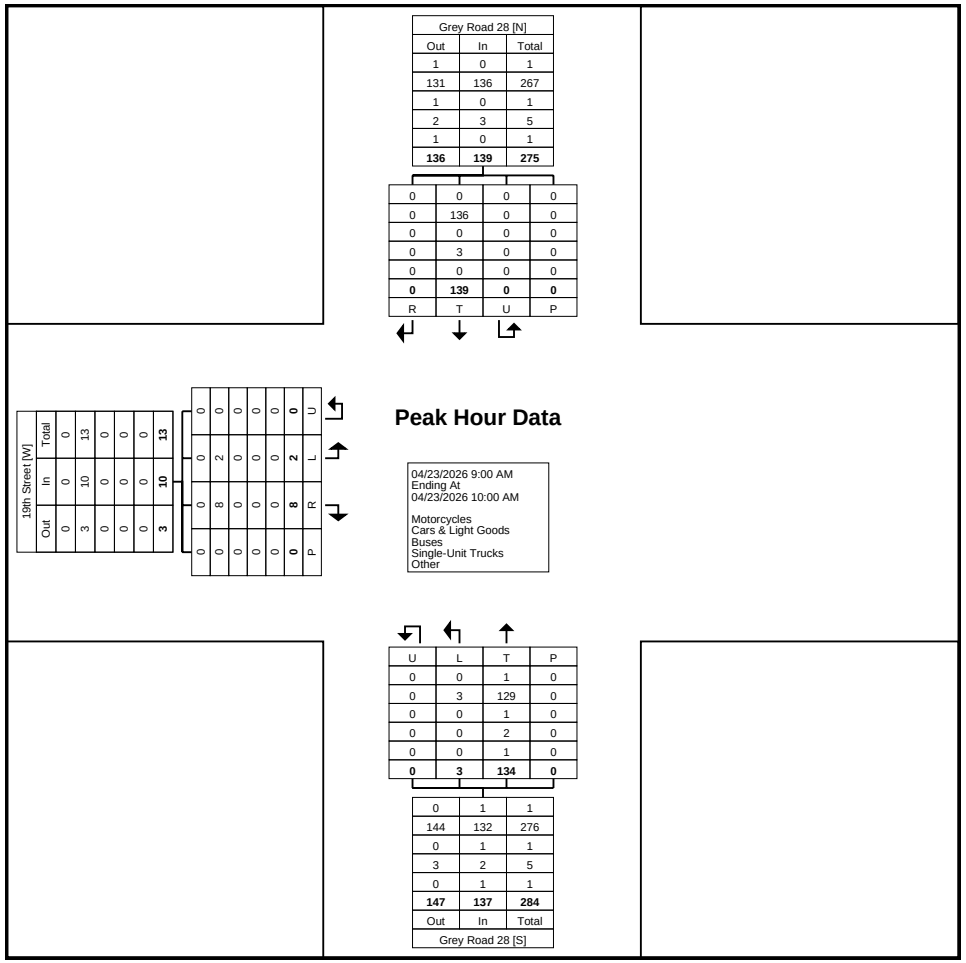
Turning Movement Peak Hour Data (9:00 AM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	1	1	0	0	2	1	30	0	0	31	35	0	0	0	35	68
9:15 AM	0	0	0	0	0	1	32	0	0	33	25	0	0	0	25	58
9:30 AM	0	2	0	0	2	0	33	0	0	33	33	0	0	0	33	68
9:45 AM	1	5	0	0	6	1	39	0	0	40	46	0	0	0	46	92
Total	2	8	0	0	10	3	134	0	0	137	139	0	0	0	139	286
Approach %	20.0	80.0	0.0	-	-	2.2	97.8	0.0	-	-	100.0	0.0	0.0	-	-	-
Total %	0.7	2.8	0.0	-	3.5	1.0	46.9	0.0	-	47.9	48.6	0.0	0.0	-	48.6	-
PHF	0.500	0.400	0.000	-	0.417	0.750	0.859	0.000	-	0.856	0.755	0.000	0.000	-	0.755	0.777
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Cars & Light Goods	2	8	0	-	10	3	129	0	-	132	136	0	0	-	136	278
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	96.3	-	-	96.4	97.8	-	-	-	97.8	97.2
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	3	0	0	-	3	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	1.5	-	-	1.5	2.2	-	-	-	2.2	1.7
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

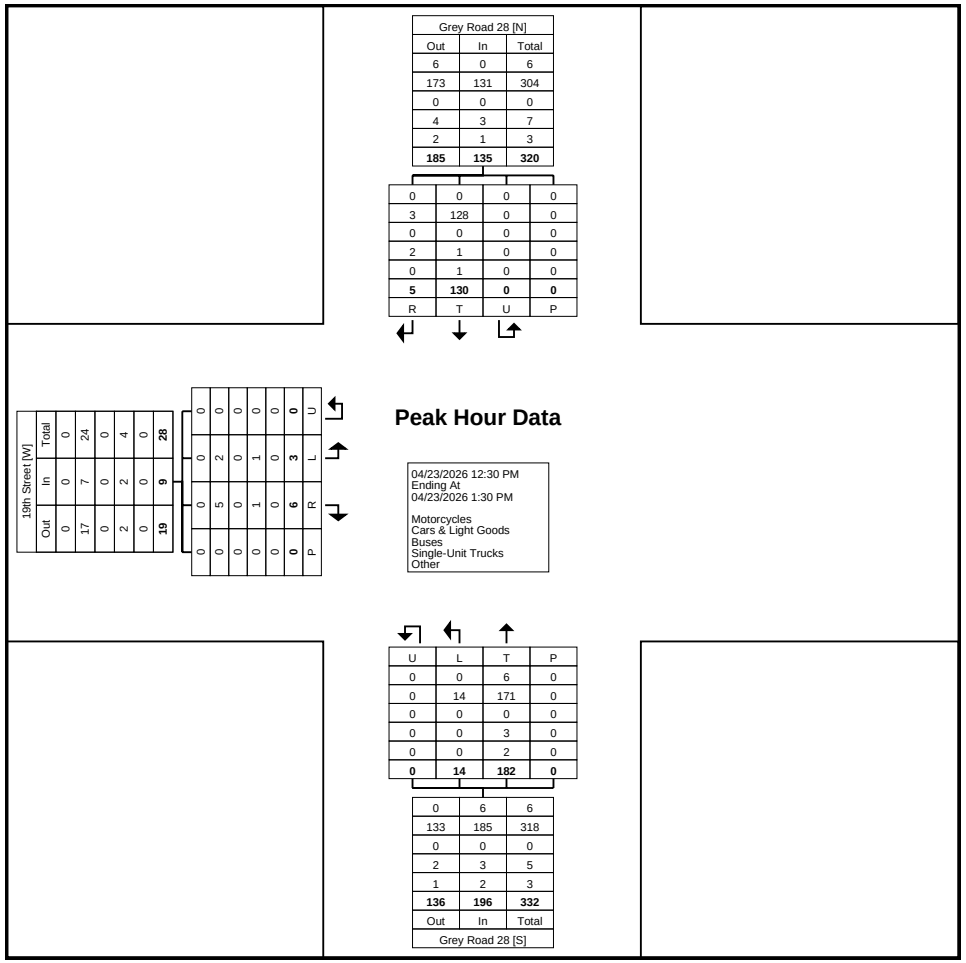
Turning Movement Peak Hour Data (12:30 PM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	1	1	0	0	2	6	38	0	0	44	28	0	0	0	28	74
12:45 PM	1	0	0	0	1	5	39	0	0	44	41	2	0	0	43	88
1:00 PM	0	2	0	0	2	1	58	0	0	59	27	2	0	0	29	90
1:15 PM	1	3	0	0	4	2	47	0	0	49	34	1	0	0	35	88
Total	3	6	0	0	9	14	182	0	0	196	130	5	0	0	135	340
Approach %	33.3	66.7	0.0	-	-	7.1	92.9	0.0	-	-	96.3	3.7	0.0	-	-	-
Total %	0.9	1.8	0.0	-	2.6	4.1	53.5	0.0	-	57.6	38.2	1.5	0.0	-	39.7	-
PHF	0.750	0.500	0.000	-	0.563	0.583	0.784	0.000	-	0.831	0.793	0.625	0.000	-	0.785	0.944
Motorcycles	0	0	0	-	0	0	6	0	-	6	0	0	0	-	0	6
% Motorcycles	0.0	0.0	-	-	0.0	0.0	3.3	-	-	3.1	0.0	0.0	-	-	0.0	1.8
Cars & Light Goods	2	5	0	-	7	14	171	0	-	185	128	3	0	-	131	323
% Cars & Light Goods	66.7	83.3	-	-	77.8	100.0	94.0	-	-	94.4	98.5	60.0	-	-	97.0	95.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	1	0	-	2	0	3	0	-	3	1	2	0	-	3	8
% Single-Unit Trucks	33.3	16.7	-	-	22.2	0.0	1.6	-	-	1.5	0.8	40.0	-	-	2.2	2.4
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	1	0	0	-	1	3
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	1.1	-	-	1.0	0.8	0.0	-	-	0.7	0.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (12:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

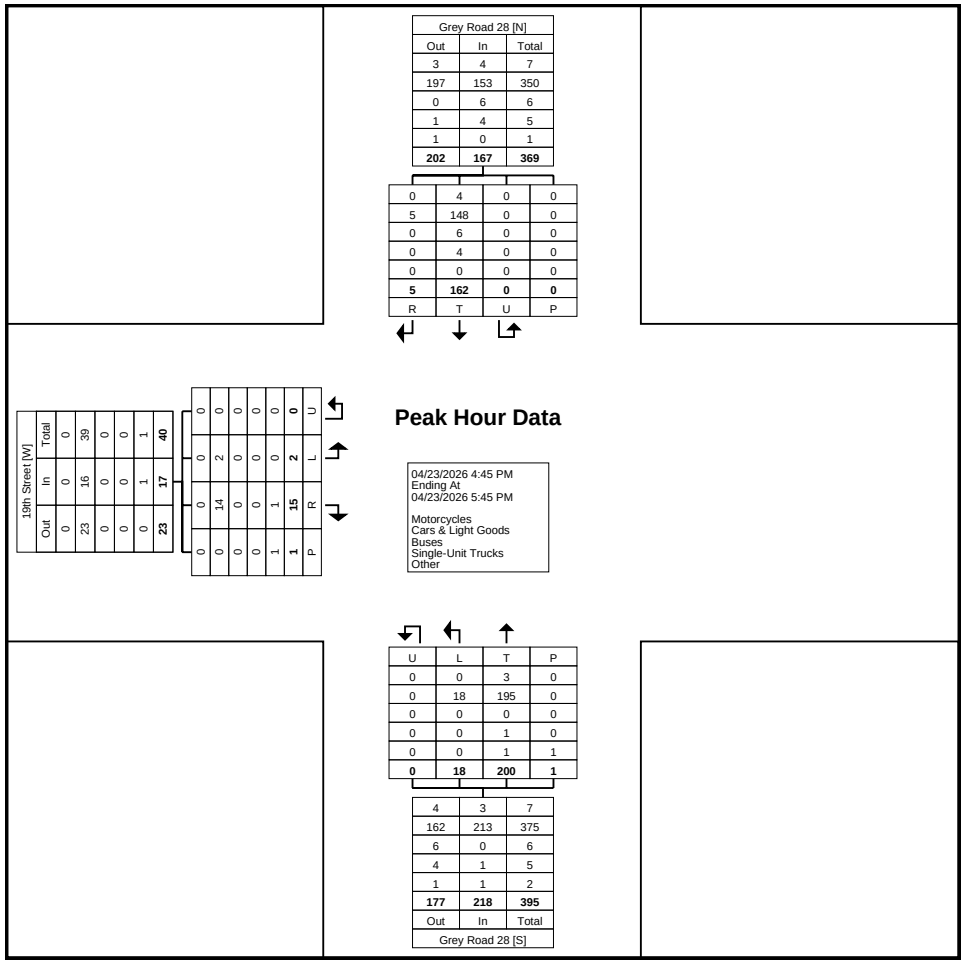
Turning Movement Peak Hour Data (4:45 PM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	1	7	0	0	8	6	40	0	1	46	38	2	0	0	40	94
5:00 PM	1	4	0	1	5	4	49	0	0	53	51	2	0	0	53	111
5:15 PM	0	2	0	0	2	6	53	0	0	59	41	0	0	0	41	102
5:30 PM	0	2	0	0	2	2	58	0	0	60	32	1	0	0	33	95
Total	2	15	0	1	17	18	200	0	1	218	162	5	0	0	167	402
Approach %	11.8	88.2	0.0	-	-	8.3	91.7	0.0	-	-	97.0	3.0	0.0	-	-	-
Total %	0.5	3.7	0.0	-	4.2	4.5	49.8	0.0	-	54.2	40.3	1.2	0.0	-	41.5	-
PHF	0.500	0.536	0.000	-	0.531	0.750	0.862	0.000	-	0.908	0.794	0.625	0.000	-	0.788	0.905
Motorcycles	0	0	0	-	0	0	3	0	-	3	4	0	0	-	4	7
% Motorcycles	0.0	0.0	-	-	0.0	0.0	1.5	-	-	1.4	2.5	0.0	-	-	2.4	1.7
Cars & Light Goods	2	14	0	-	16	18	195	0	-	213	148	5	0	-	153	382
% Cars & Light Goods	100.0	93.3	-	-	94.1	100.0	97.5	-	-	97.7	91.4	100.0	-	-	91.6	95.0
Buses	0	0	0	-	0	0	0	0	-	0	6	0	0	-	6	6
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	3.7	0.0	-	-	3.6	1.5
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	4	0	0	-	4	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.5	2.5	0.0	-	-	2.4	1.2
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.5	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	6.7	-	-	5.9	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	0.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

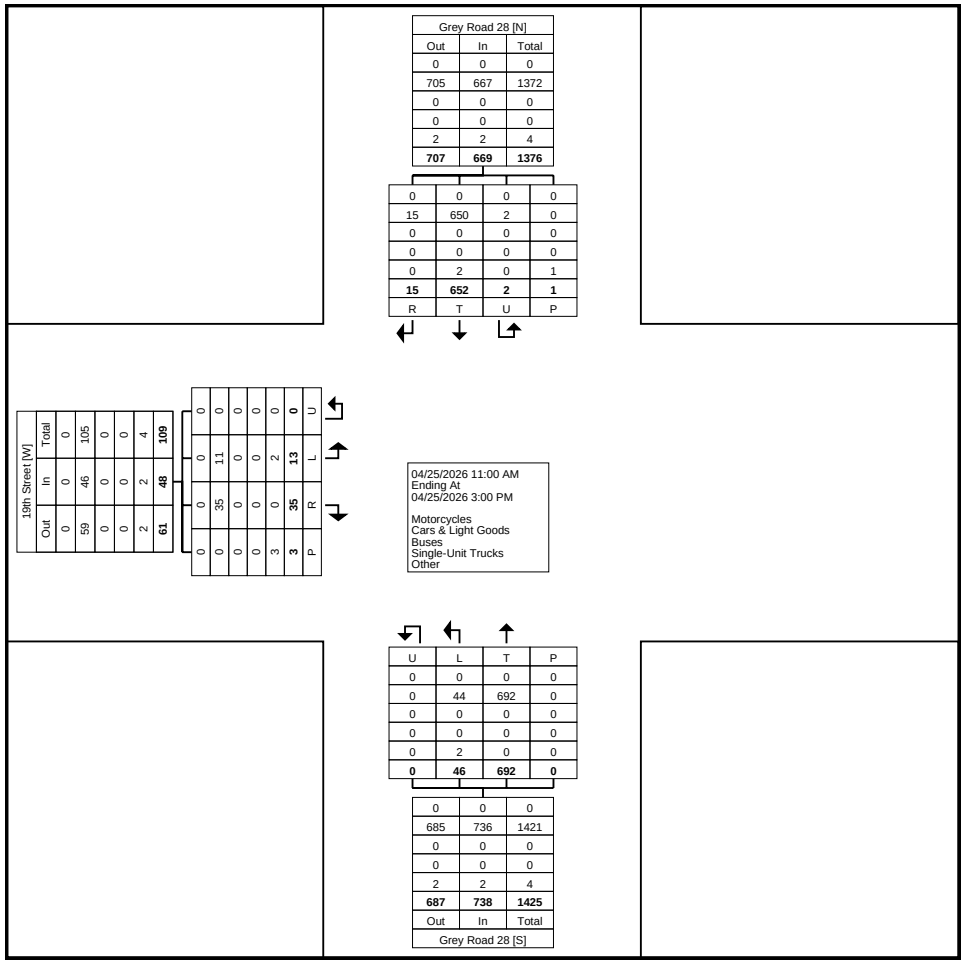
Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	0	1	0	0	1	1	39	0	0	40	38	0	0	0	38	79
11:15 AM	1	2	0	0	3	6	39	0	0	45	37	1	0	0	38	86
11:30 AM	1	1	0	0	2	1	54	0	0	55	43	1	2	0	46	103
11:45 AM	2	3	0	3	5	7	47	0	0	54	41	2	0	0	43	102
Hourly Total	4	7	0	3	11	15	179	0	0	194	159	4	2	0	165	370
12:00 PM	3	4	0	0	7	0	36	0	0	36	48	0	0	0	48	91
12:15 PM	1	4	0	0	5	4	43	0	0	47	37	3	0	0	40	92
12:30 PM	1	3	0	0	4	7	39	0	0	46	50	1	0	0	51	101
12:45 PM	0	2	0	0	2	2	35	0	0	37	40	0	0	0	40	79
Hourly Total	5	13	0	0	18	13	153	0	0	166	175	4	0	0	179	363
1:00 PM	0	3	0	0	3	2	46	0	0	48	42	0	0	0	42	93
1:15 PM	2	3	0	0	5	6	42	0	0	48	34	0	0	0	34	87
1:30 PM	1	3	0	0	4	3	48	0	0	51	44	1	0	0	45	100
1:45 PM	0	0	0	0	0	1	51	0	0	52	38	0	0	0	38	90
Hourly Total	3	9	0	0	12	12	187	0	0	199	158	1	0	0	159	370
2:00 PM	1	4	0	0	5	1	47	0	0	48	32	4	0	0	36	89
2:15 PM	0	1	0	0	1	2	36	0	0	38	44	0	0	1	44	83
2:30 PM	0	1	0	0	1	2	45	0	0	47	46	0	0	0	46	94
2:45 PM	0	0	0	0	0	1	45	0	0	46	38	2	0	0	40	86
Hourly Total	1	6	0	0	7	6	173	0	0	179	160	6	0	1	166	352
Grand Total	13	35	0	3	48	46	692	0	0	738	652	15	2	1	669	1455
Approach %	27.1	72.9	0.0	-	-	6.2	93.8	0.0	-	-	97.5	2.2	0.3	-	-	-
Total %	0.9	2.4	0.0	-	3.3	3.2	47.6	0.0	-	50.7	44.8	1.0	0.1	-	46.0	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	11	35	0	-	46	44	692	0	-	736	650	15	2	-	667	1449
% Cars & Light Goods	84.6	100.0	-	-	95.8	95.7	100.0	-	-	99.7	99.7	100.0	100.0	-	99.7	99.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	0.3	0.1
Bicycles on Road	2	0	0	-	2	2	0	0	-	2	0	0	0	-	0	4
% Bicycles on Road	15.4	0.0	-	-	4.2	4.3	0.0	-	-	0.3	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026
Page No: 3



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

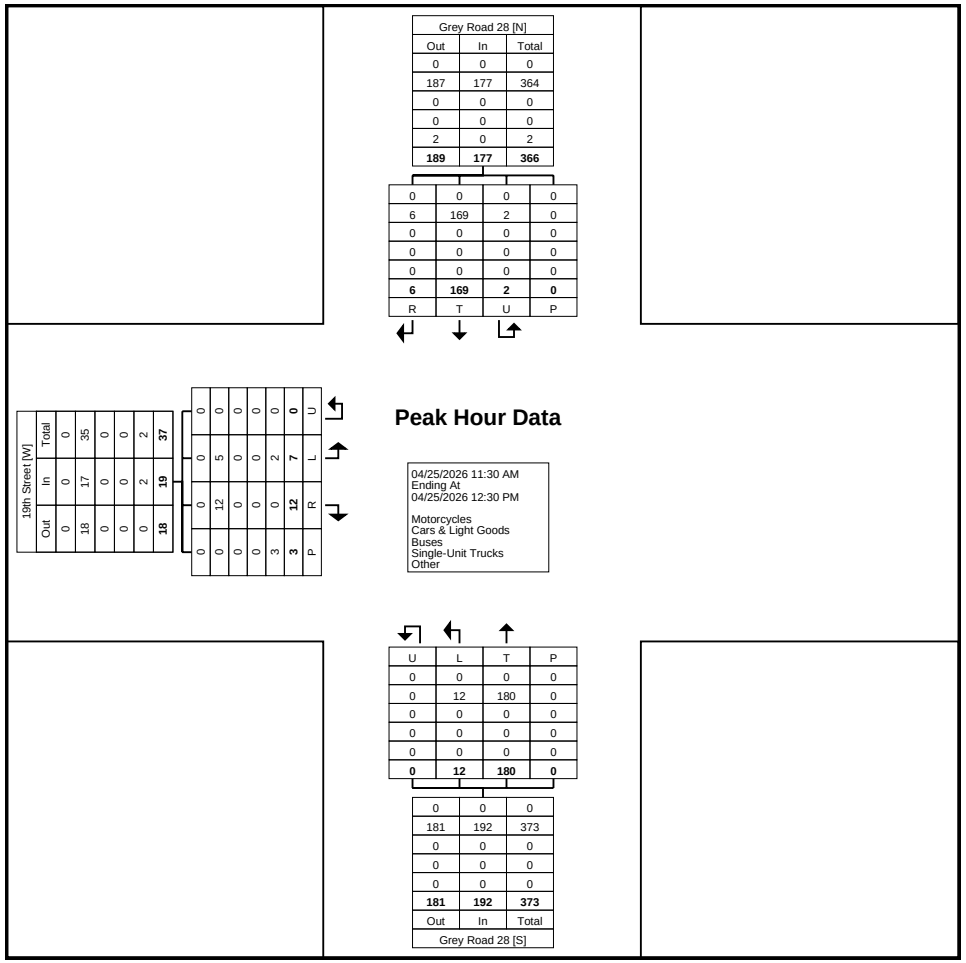
Turning Movement Peak Hour Data (11:30 AM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:30 AM	1	1	0	0	2	1	54	0	0	55	43	1	2	0	46	103
11:45 AM	2	3	0	3	5	7	47	0	0	54	41	2	0	0	43	102
12:00 PM	3	4	0	0	7	0	36	0	0	36	48	0	0	0	48	91
12:15 PM	1	4	0	0	5	4	43	0	0	47	37	3	0	0	40	92
Total	7	12	0	3	19	12	180	0	0	192	169	6	2	0	177	388
Approach %	36.8	63.2	0.0	-	-	6.3	93.8	0.0	-	-	95.5	3.4	1.1	-	-	-
Total %	1.8	3.1	0.0	-	4.9	3.1	46.4	0.0	-	49.5	43.6	1.5	0.5	-	45.6	-
PHF	0.583	0.750	0.000	-	0.679	0.429	0.833	0.000	-	0.873	0.880	0.500	0.250	-	0.922	0.942
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	5	12	0	-	17	12	180	0	-	192	169	6	2	-	177	386
% Cars & Light Goods	71.4	100.0	-	-	89.5	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	99.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	2	0	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	28.6	0.0	-	-	10.5	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

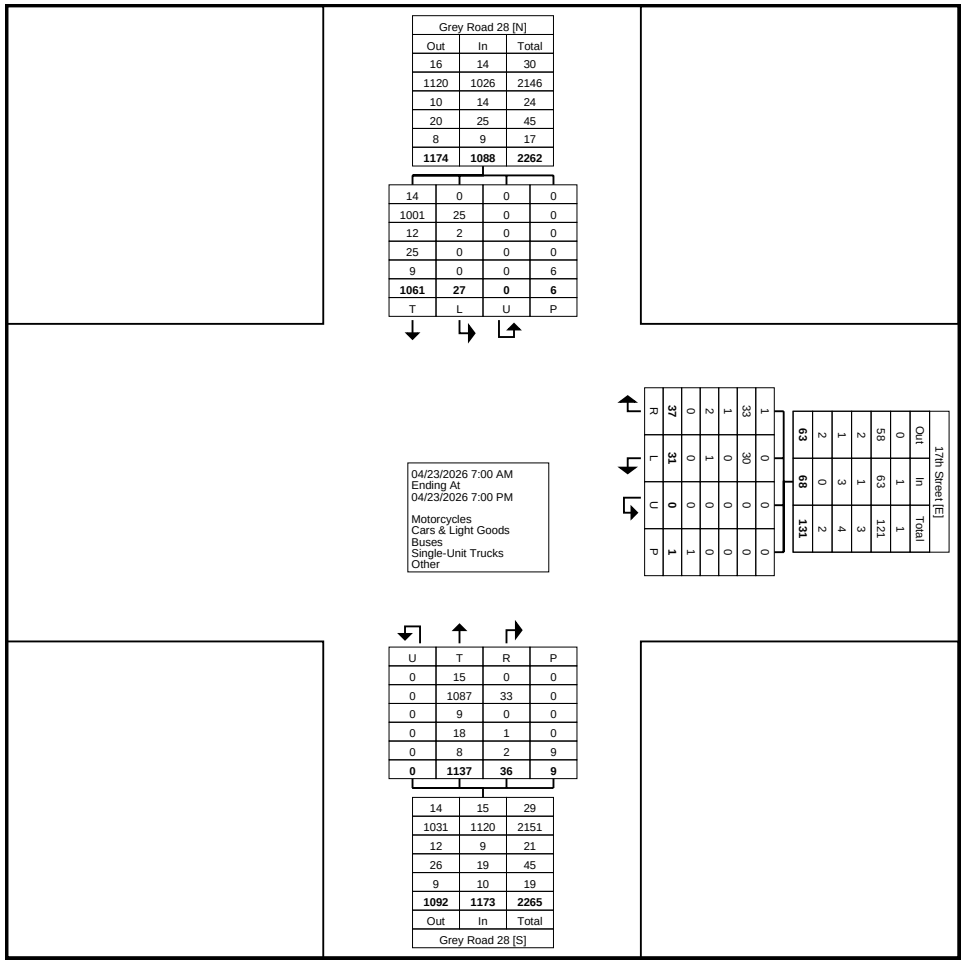
Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	1	0	0	2	15	1	0	1	16	0	15	0	0	15	33
7:15 AM	0	1	0	0	1	20	1	0	0	21	1	23	0	0	24	46
7:30 AM	0	2	0	0	2	15	1	0	0	16	0	30	0	0	30	48
7:45 AM	1	1	0	0	2	18	1	0	0	19	2	35	0	0	37	58
Hourly Total	2	5	0	0	7	68	4	0	1	72	3	103	0	0	106	185
8:00 AM	0	1	0	0	1	14	0	0	0	14	0	31	0	1	31	46
8:15 AM	2	1	0	1	3	35	2	0	1	37	2	46	0	0	48	88
8:30 AM	3	0	0	0	3	26	0	0	0	26	0	41	0	0	41	70
8:45 AM	2	0	0	0	2	25	1	0	0	26	0	36	0	1	36	64
Hourly Total	7	2	0	1	9	100	3	0	1	103	2	154	0	2	156	268
9:00 AM	0	0	0	0	0	29	0	0	0	29	0	34	0	0	34	63
9:15 AM	0	1	0	0	1	30	1	0	0	31	0	26	0	0	26	58
9:30 AM	1	3	0	0	4	30	1	0	2	31	1	32	0	0	33	68
9:45 AM	1	1	0	0	2	38	1	0	0	39	1	43	0	0	44	85
Hourly Total	2	5	0	0	7	127	3	0	2	130	2	135	0	0	137	274
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	1	0	0	0	1	32	0	0	0	32	1	30	0	0	31	64
11:45 AM	4	1	0	0	5	46	1	0	0	47	0	32	0	0	32	84
Hourly Total	5	1	0	0	6	78	1	0	0	79	1	62	0	0	63	148
12:00 PM	1	2	0	0	3	34	2	0	0	36	1	37	0	0	38	77
12:15 PM	0	1	0	0	1	46	1	0	2	47	1	32	0	0	33	81
12:30 PM	1	3	0	0	4	41	2	0	0	43	0	29	0	0	29	76
12:45 PM	0	3	0	0	3	41	1	0	0	42	0	38	0	0	38	83
Hourly Total	2	9	0	0	11	162	6	0	2	168	2	136	0	0	138	317
1:00 PM	2	0	0	0	2	59	0	0	0	59	3	25	0	0	28	89
1:15 PM	3	3	0	0	6	47	4	0	0	51	0	36	0	1	36	93
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	5	3	0	0	8	106	4	0	0	110	3	61	0	1	64	182
4:00 PM	1	1	0	0	2	46	1	0	0	47	3	40	0	0	43	92
4:15 PM	2	1	0	0	3	52	2	0	0	54	0	34	0	0	34	91
4:30 PM	2	0	0	0	2	37	0	0	0	37	3	40	0	1	43	82
4:45 PM	1	2	0	0	3	44	3	0	0	47	1	43	0	0	44	94
Hourly Total	6	4	0	0	10	179	6	0	0	185	7	157	0	1	164	359
5:00 PM	0	1	0	0	1	52	0	0	0	52	0	53	0	0	53	106
5:15 PM	1	2	0	0	3	56	0	0	0	56	1	42	0	0	43	102
5:30 PM	0	0	0	0	0	56	1	0	2	57	0	36	0	0	36	93

5:45 PM	0	0	0	0	0	37	3	0	0	40	1	33	0	0	34	74
Hourly Total	1	3	0	0	4	201	4	0	2	205	2	164	0	0	166	375
6:00 PM	1	2	0	0	3	38	2	0	0	40	1	33	0	2	34	77
6:15 PM	0	0	0	0	0	29	2	0	0	31	2	18	0	0	20	51
6:30 PM	0	1	0	0	1	24	0	0	1	24	1	17	0	0	18	43
6:45 PM	0	2	0	0	2	25	1	0	0	26	1	21	0	0	22	50
Hourly Total	1	5	0	0	6	116	5	0	1	121	5	89	0	2	94	221
Grand Total	31	37	0	1	68	1137	36	0	9	1173	27	1061	0	6	1088	2329
Approach %	45.6	54.4	0.0	-	-	96.9	3.1	0.0	-	-	2.5	97.5	0.0	-	-	-
Total %	1.3	1.6	0.0	-	2.9	48.8	1.5	0.0	-	50.4	1.2	45.6	0.0	-	46.7	-
Motorcycles	0	1	0	-	1	15	0	0	-	15	0	14	0	-	14	30
% Motorcycles	0.0	2.7	-	-	1.5	1.3	0.0	-	-	1.3	0.0	1.3	-	-	1.3	1.3
Cars & Light Goods	30	33	0	-	63	1087	33	0	-	1120	25	1001	0	-	1026	2209
% Cars & Light Goods	96.8	89.2	-	-	92.6	95.6	91.7	-	-	95.5	92.6	94.3	-	-	94.3	94.8
Buses	0	1	0	-	1	9	0	0	-	9	2	12	0	-	14	24
% Buses	0.0	2.7	-	-	1.5	0.8	0.0	-	-	0.8	7.4	1.1	-	-	1.3	1.0
Single-Unit Trucks	1	2	0	-	3	18	1	0	-	19	0	25	0	-	25	47
% Single-Unit Trucks	3.2	5.4	-	-	4.4	1.6	2.8	-	-	1.6	0.0	2.4	-	-	2.3	2.0
Articulated Trucks	0	0	0	-	0	8	0	0	-	8	0	9	0	-	9	17
% Articulated Trucks	0.0	0.0	-	-	0.0	0.7	0.0	-	-	0.7	0.0	0.8	-	-	0.8	0.7
Bicycles on Road	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	5.6	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	1	-	-	-	-	9	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	83.3	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

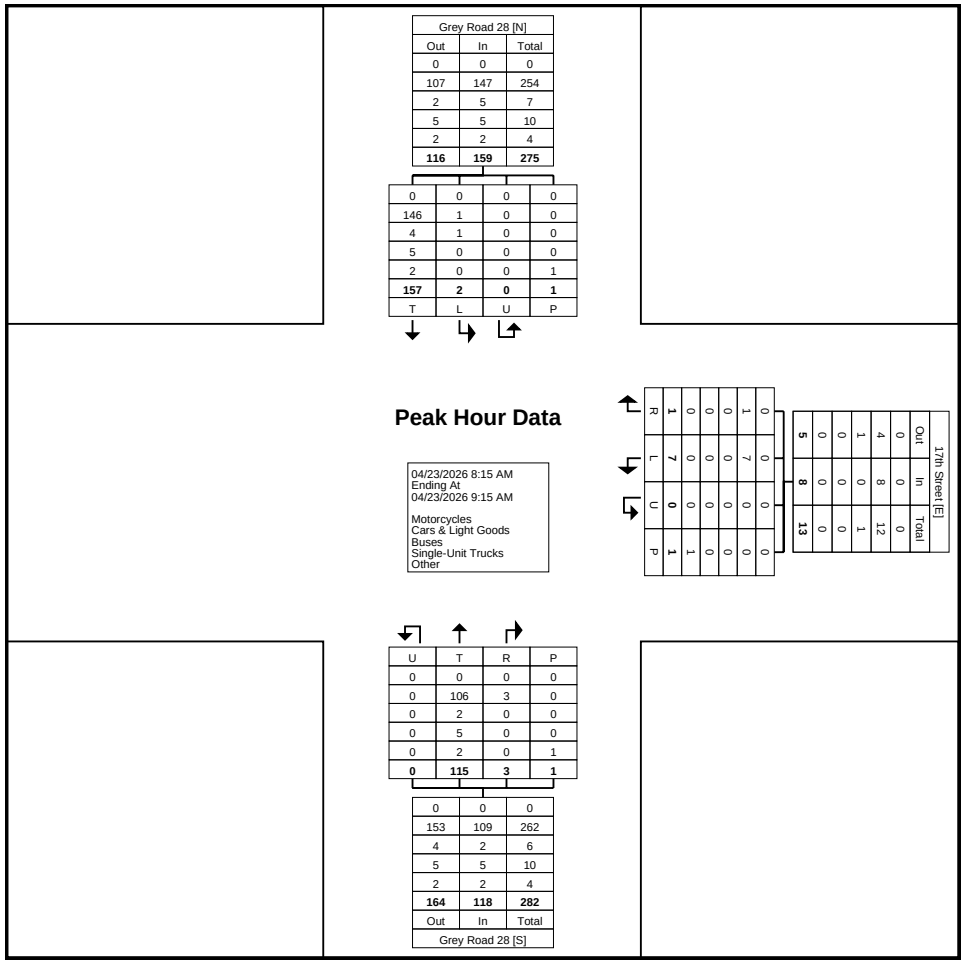
Turning Movement Peak Hour Data (8:15 AM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
8:15 AM	2	1	0	1	3	35	2	0	1	37	2	46	0	0	48	88
8:30 AM	3	0	0	0	3	26	0	0	0	26	0	41	0	0	41	70
8:45 AM	2	0	0	0	2	25	1	0	0	26	0	36	0	1	36	64
9:00 AM	0	0	0	0	0	29	0	0	0	29	0	34	0	0	34	63
Total	7	1	0	1	8	115	3	0	1	118	2	157	0	1	159	285
Approach %	87.5	12.5	0.0	-	-	97.5	2.5	0.0	-	-	1.3	98.7	0.0	-	-	-
Total %	2.5	0.4	0.0	-	2.8	40.4	1.1	0.0	-	41.4	0.7	55.1	0.0	-	55.8	-
PHF	0.583	0.250	0.000	-	0.667	0.821	0.375	0.000	-	0.797	0.250	0.853	0.000	-	0.828	0.810
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	7	1	0	-	8	106	3	0	-	109	1	146	0	-	147	264
% Cars & Light Goods	100.0	100.0	-	-	100.0	92.2	100.0	-	-	92.4	50.0	93.0	-	-	92.5	92.6
Buses	0	0	0	-	0	2	0	0	-	2	1	4	0	-	5	7
% Buses	0.0	0.0	-	-	0.0	1.7	0.0	-	-	1.7	50.0	2.5	-	-	3.1	2.5
Single-Unit Trucks	0	0	0	-	0	5	0	0	-	5	0	5	0	-	5	10
% Single-Unit Trucks	0.0	0.0	-	-	0.0	4.3	0.0	-	-	4.2	0.0	3.2	-	-	3.1	3.5
Articulated Trucks	0	0	0	-	0	2	0	0	-	2	0	2	0	-	2	4
% Articulated Trucks	0.0	0.0	-	-	0.0	1.7	0.0	-	-	1.7	0.0	1.3	-	-	1.3	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 5



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

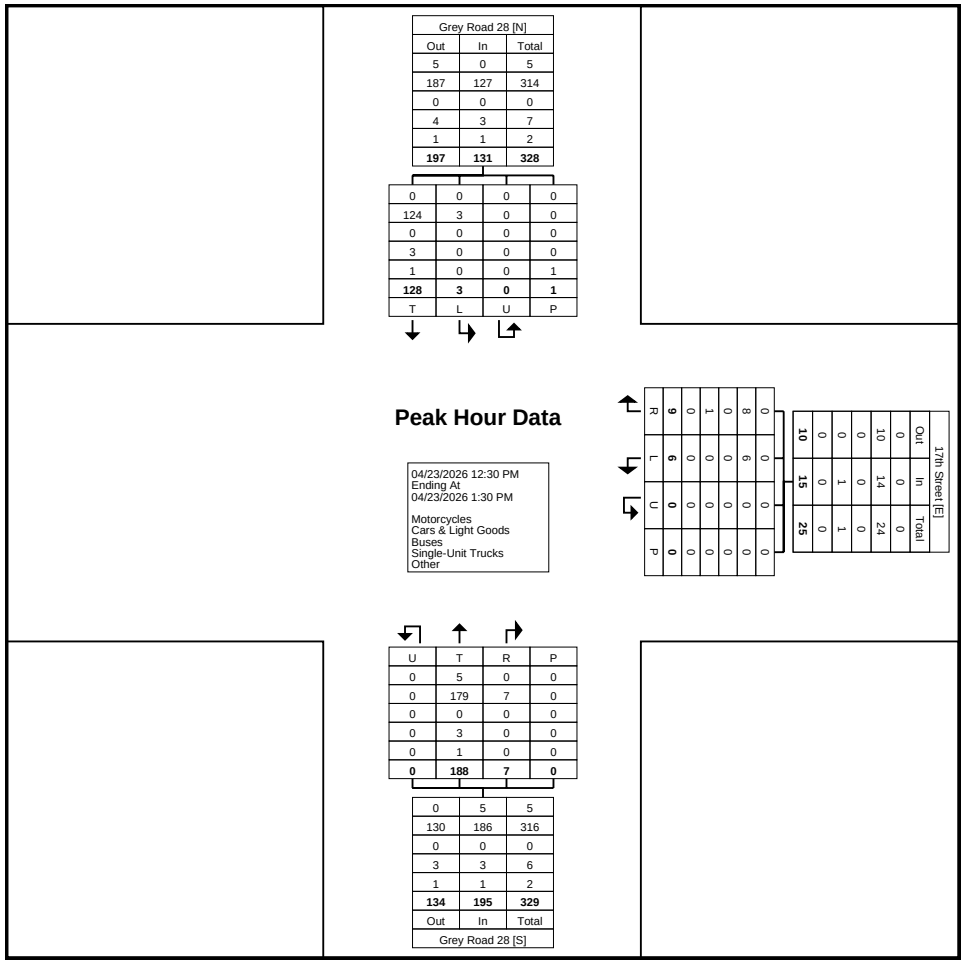
Turning Movement Peak Hour Data (12:30 PM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
12:30 PM	1	3	0	0	4	41	2	0	0	43	0	29	0	0	29	76
12:45 PM	0	3	0	0	3	41	1	0	0	42	0	38	0	0	38	83
1:00 PM	2	0	0	0	2	59	0	0	0	59	3	25	0	0	28	89
1:15 PM	3	3	0	0	6	47	4	0	0	51	0	36	0	1	36	93
Total	6	9	0	0	15	188	7	0	0	195	3	128	0	1	131	341
Approach %	40.0	60.0	0.0	-	-	96.4	3.6	0.0	-	-	2.3	97.7	0.0	-	-	-
Total %	1.8	2.6	0.0	-	4.4	55.1	2.1	0.0	-	57.2	0.9	37.5	0.0	-	38.4	-
PHF	0.500	0.750	0.000	-	0.625	0.797	0.438	0.000	-	0.826	0.250	0.842	0.000	-	0.862	0.917
Motorcycles	0	0	0	-	0	5	0	0	-	5	0	0	0	-	0	5
% Motorcycles	0.0	0.0	-	-	0.0	2.7	0.0	-	-	2.6	0.0	0.0	-	-	0.0	1.5
Cars & Light Goods	6	8	0	-	14	179	7	0	-	186	3	124	0	-	127	327
% Cars & Light Goods	100.0	88.9	-	-	93.3	95.2	100.0	-	-	95.4	100.0	96.9	-	-	96.9	95.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	3	0	0	-	3	0	3	0	-	3	7
% Single-Unit Trucks	0.0	11.1	-	-	6.7	1.6	0.0	-	-	1.5	0.0	2.3	-	-	2.3	2.1
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	0.8	-	-	0.8	0.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (12:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

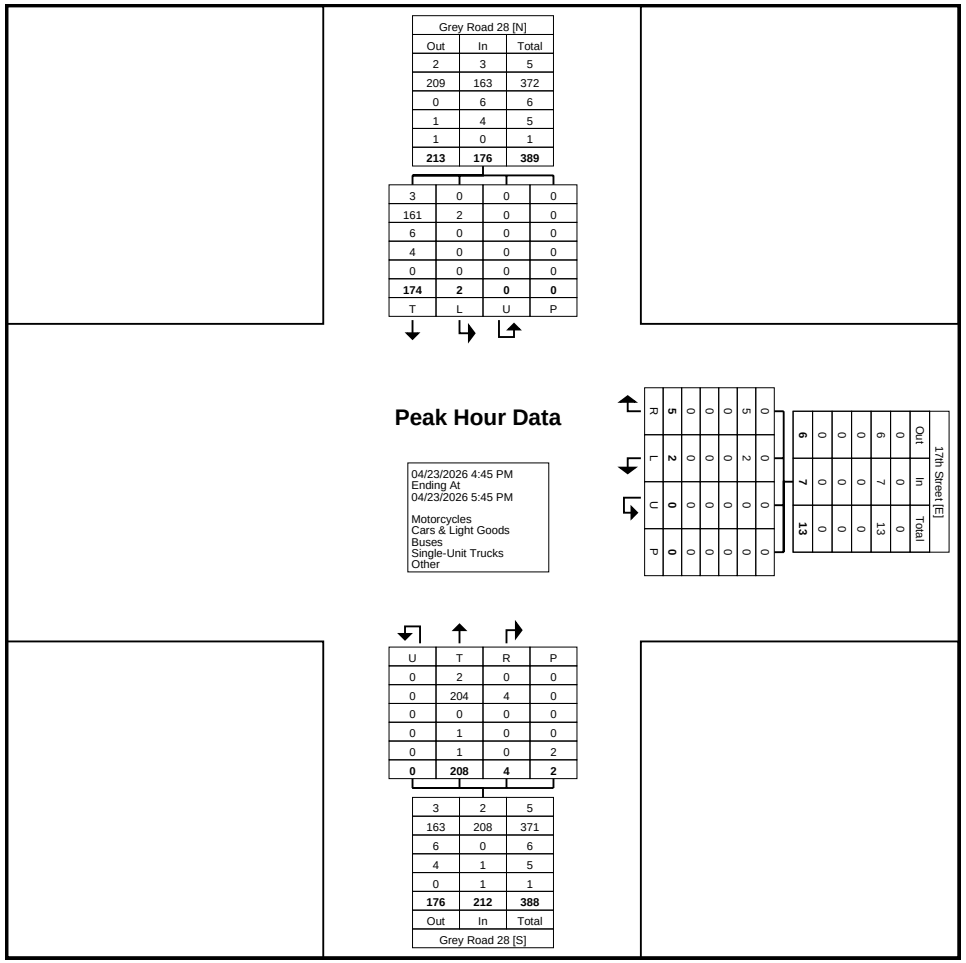
Turning Movement Peak Hour Data (4:45 PM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:45 PM	1	2	0	0	3	44	3	0	0	47	1	43	0	0	44	94
5:00 PM	0	1	0	0	1	52	0	0	0	52	0	53	0	0	53	106
5:15 PM	1	2	0	0	3	56	0	0	0	56	1	42	0	0	43	102
5:30 PM	0	0	0	0	0	56	1	0	2	57	0	36	0	0	36	93
Total	2	5	0	0	7	208	4	0	2	212	2	174	0	0	176	395
Approach %	28.6	71.4	0.0	-	-	98.1	1.9	0.0	-	-	1.1	98.9	0.0	-	-	-
Total %	0.5	1.3	0.0	-	1.8	52.7	1.0	0.0	-	53.7	0.5	44.1	0.0	-	44.6	-
PHF	0.500	0.625	0.000	-	0.583	0.929	0.333	0.000	-	0.930	0.500	0.821	0.000	-	0.830	0.932
Motorcycles	0	0	0	-	0	2	0	0	-	2	0	3	0	-	3	5
% Motorcycles	0.0	0.0	-	-	0.0	1.0	0.0	-	-	0.9	0.0	1.7	-	-	1.7	1.3
Cars & Light Goods	2	5	0	-	7	204	4	0	-	208	2	161	0	-	163	378
% Cars & Light Goods	100.0	100.0	-	-	100.0	98.1	100.0	-	-	98.1	100.0	92.5	-	-	92.6	95.7
Buses	0	0	0	-	0	0	0	0	-	0	0	6	0	-	6	6
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	3.4	-	-	3.4	1.5
Single-Unit Trucks	0	0	0	-	0	1	0	0	-	1	0	4	0	-	4	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	2.3	-	-	2.3	1.3
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

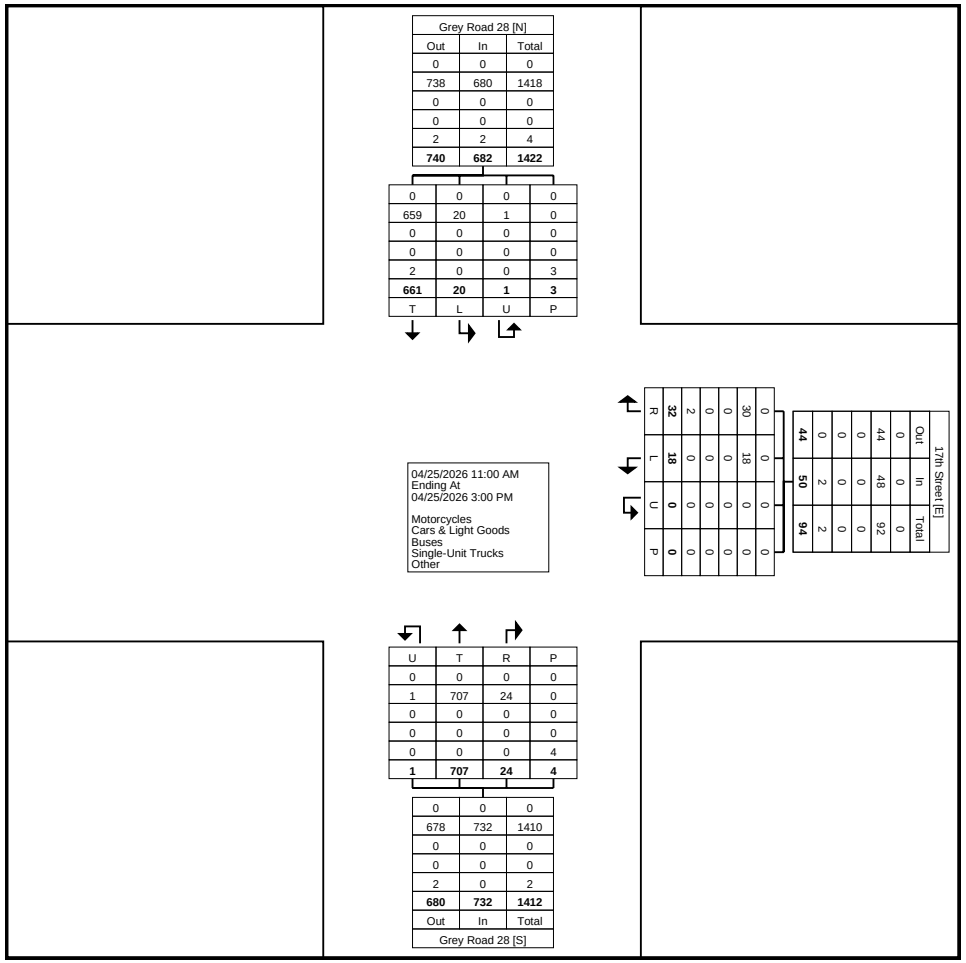
Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
11:00 AM	1	0	0	0	1	40	2	0	1	42	1	38	0	0	39	82
11:15 AM	1	6	0	0	7	39	3	0	0	42	2	37	0	0	39	88
11:30 AM	2	2	0	0	4	53	0	0	0	53	1	42	0	0	43	100
11:45 AM	1	1	0	0	2	54	3	0	1	57	2	42	0	0	44	103
Hourly Total	5	9	0	0	14	186	8	0	2	194	6	159	0	0	165	373
12:00 PM	1	2	0	0	3	35	4	0	0	39	1	52	0	0	53	95
12:15 PM	0	4	0	0	4	43	1	0	1	44	2	38	1	0	41	89
12:30 PM	2	1	0	0	3	45	0	0	0	45	0	52	0	1	52	100
12:45 PM	1	3	0	0	4	35	0	0	0	35	0	42	0	0	42	81
Hourly Total	4	10	0	0	14	158	5	0	1	163	3	184	1	1	188	365
1:00 PM	1	2	0	0	3	45	2	0	0	47	1	42	0	0	43	93
1:15 PM	0	4	0	0	4	45	0	1	0	46	1	35	0	0	36	86
1:30 PM	2	2	0	0	4	49	3	0	0	52	1	46	0	0	47	103
1:45 PM	1	1	0	0	2	49	1	0	1	50	1	38	0	0	39	91
Hourly Total	4	9	0	0	13	188	6	1	1	195	4	161	0	0	165	373
2:00 PM	1	1	0	0	2	48	2	0	0	50	3	33	0	2	36	88
2:15 PM	1	0	0	0	1	38	1	0	0	39	0	44	0	0	44	84
2:30 PM	2	2	0	0	4	47	0	0	0	47	3	44	0	0	47	98
2:45 PM	1	1	0	0	2	42	2	0	0	44	1	36	0	0	37	83
Hourly Total	5	4	0	0	9	175	5	0	0	180	7	157	0	2	164	353
Grand Total	18	32	0	0	50	707	24	1	4	732	20	661	1	3	682	1464
Approach %	36.0	64.0	0.0	-	-	96.6	3.3	0.1	-	-	2.9	96.9	0.1	-	-	-
Total %	1.2	2.2	0.0	-	3.4	48.3	1.6	0.1	-	50.0	1.4	45.2	0.1	-	46.6	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	18	30	0	-	48	707	24	1	-	732	20	659	1	-	680	1460
% Cars & Light Goods	100.0	93.8	-	-	96.0	100.0	100.0	100.0	-	100.0	100.0	99.7	100.0	-	99.7	99.7
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.1
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	6.3	-	-	4.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	4	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

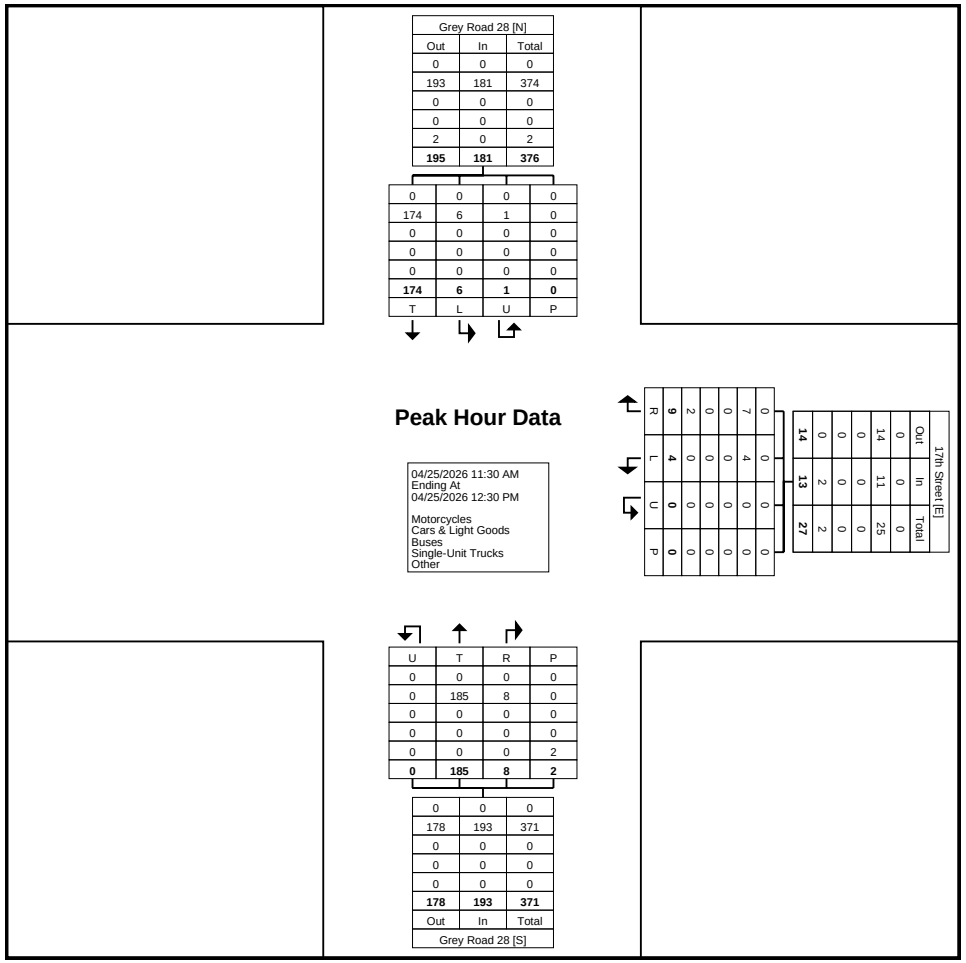
Turning Movement Peak Hour Data (11:30 AM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
11:30 AM	2	2	0	0	4	53	0	0	0	53	1	42	0	0	43	100
11:45 AM	1	1	0	0	2	54	3	0	1	57	2	42	0	0	44	103
12:00 PM	1	2	0	0	3	35	4	0	0	39	1	52	0	0	53	95
12:15 PM	0	4	0	0	4	43	1	0	1	44	2	38	1	0	41	89
Total	4	9	0	0	13	185	8	0	2	193	6	174	1	0	181	387
Approach %	30.8	69.2	0.0	-	-	95.9	4.1	0.0	-	-	3.3	96.1	0.6	-	-	-
Total %	1.0	2.3	0.0	-	3.4	47.8	2.1	0.0	-	49.9	1.6	45.0	0.3	-	46.8	-
PHF	0.500	0.563	0.000	-	0.813	0.856	0.500	0.000	-	0.846	0.750	0.837	0.250	-	0.854	0.939
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	4	7	0	-	11	185	8	0	-	193	6	174	1	-	181	385
% Cars & Light Goods	100.0	77.8	-	-	84.6	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	99.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	22.2	-	-	15.4	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

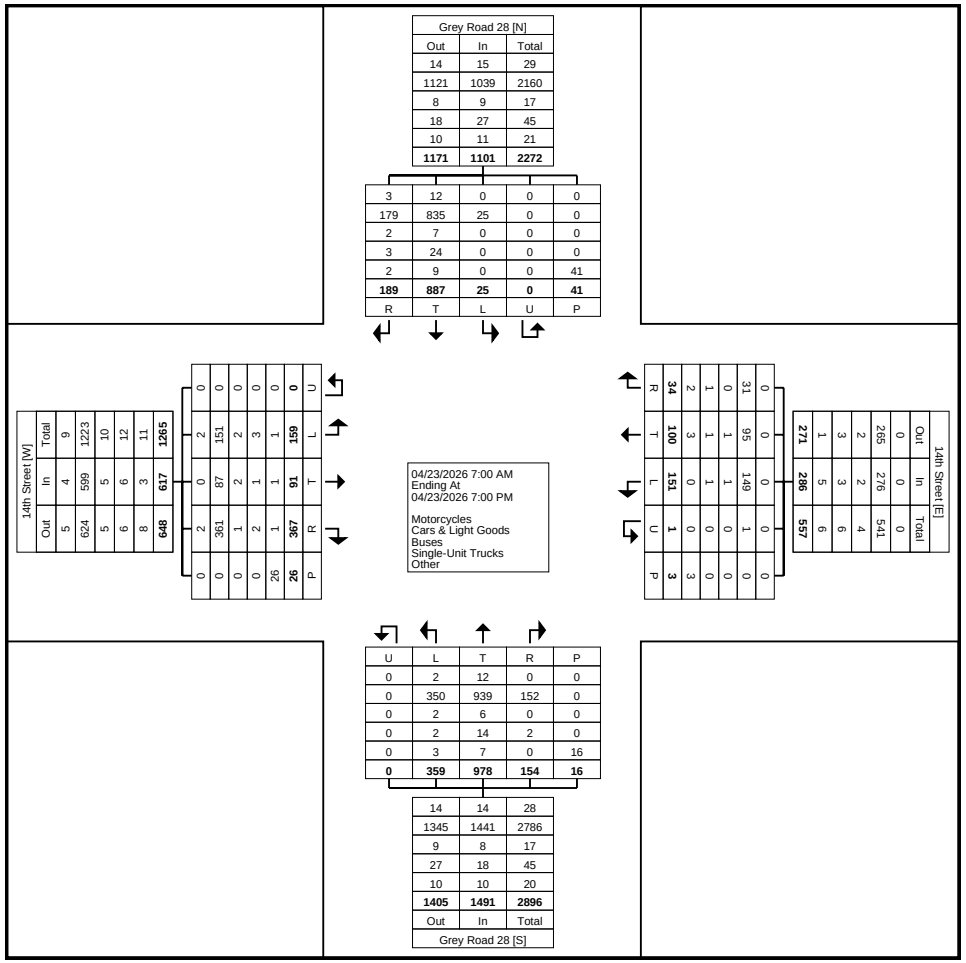
Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	5	0	1	0	0	6	2	4	0	0	0	6	4	10	1	0	2	15	1	16	1	0	0	18	45
7:15 AM	4	0	6	0	0	10	4	1	1	0	0	6	8	16	0	0	0	24	1	18	5	0	1	24	64
7:30 AM	3	1	8	0	0	12	2	0	1	0	0	3	6	12	4	0	1	22	1	24	7	0	0	32	69
7:45 AM	8	7	7	0	0	22	5	8	0	0	0	13	11	11	1	0	0	23	0	30	5	0	0	35	93
Hourly Total	20	8	22	0	0	50	13	13	2	0	0	28	29	49	6	0	3	84	3	88	18	0	1	109	271
8:00 AM	4	0	9	0	1	13	7	2	0	0	0	9	8	11	3	0	0	22	0	24	8	0	0	32	76
8:15 AM	5	3	11	0	4	19	4	5	0	0	0	9	15	31	3	0	2	49	1	29	17	0	1	47	124
8:30 AM	6	1	4	0	0	11	5	6	2	0	0	13	13	18	3	0	0	34	1	38	5	0	0	44	102
8:45 AM	2	6	12	0	2	20	10	4	2	0	0	16	8	22	5	0	0	35	1	27	10	0	2	38	109
Hourly Total	17	10	36	0	7	63	26	17	4	0	0	47	44	82	14	0	2	140	3	118	40	0	3	161	411
9:00 AM	4	5	9	0	3	18	3	5	2	0	0	10	7	24	4	0	0	35	0	29	4	0	3	33	96
9:15 AM	6	4	7	0	1	17	6	1	1	0	1	8	11	24	9	0	1	44	1	22	3	0	5	26	95
9:30 AM	4	2	10	0	0	16	4	5	1	0	0	10	10	26	6	0	1	42	1	29	4	0	6	34	102
9:45 AM	4	3	11	0	1	18	6	2	1	0	0	9	8	34	5	0	1	47	0	40	3	0	3	43	117
Hourly Total	18	14	37	0	5	69	19	13	5	0	1	37	36	108	24	0	3	168	2	120	14	0	17	136	410
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	1	10	0	0	11	6	3	0	0	0	9	10	31	4	0	0	45	1	23	7	0	0	31	96
11:45 AM	7	5	14	0	0	26	3	5	3	0	0	11	13	38	4	0	0	55	1	26	7	0	0	34	126
Hourly Total	7	6	24	0	0	37	9	8	3	0	0	20	23	69	8	0	0	100	2	49	14	0	0	65	222
12:00 PM	4	8	15	0	0	27	6	3	1	0	0	10	11	31	1	0	0	43	1	35	6	0	0	42	122
12:15 PM	2	4	16	0	0	22	7	1	1	0	1	9	10	45	7	0	2	62	0	28	4	0	1	32	125
12:30 PM	7	2	11	0	0	20	4	2	2	0	0	8	9	33	4	0	0	46	0	26	2	0	1	28	102
12:45 PM	5	4	7	0	0	16	4	3	1	0	0	8	10	38	8	0	1	56	2	28	10	0	2	40	120
Hourly Total	18	18	49	0	0	85	21	9	5	0	1	35	40	147	20	0	3	207	3	117	22	0	4	142	469
1:00 PM	11	4	12	0	0	27	6	4	1	0	0	11	8	45	5	0	0	58	1	26	1	0	2	28	124
1:15 PM	5	2	13	0	0	20	8	2	1	0	0	11	13	45	8	0	1	66	1	30	7	0	1	38	135
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	16	6	25	0	0	47	14	6	2	0	0	22	21	90	13	0	1	124	2	56	8	0	3	66	259
4:00 PM	6	4	19	0	1	29	4	8	1	0	0	13	11	43	8	0	0	62	1	31	10	0	1	42	146
4:15 PM	8	1	24	0	3	33	4	3	4	0	0	11	16	40	7	0	0	63	2	33	3	0	0	38	145
4:30 PM	2	3	7	0	2	12	6	4	1	0	0	11	22	34	5	0	0	61	0	28	11	0	2	39	123
4:45 PM	6	1	18	0	3	25	5	4	0	0	0	9	13	41	13	0	0	67	0	36	10	0	0	46	147
Hourly Total	22	9	68	0	9	99	19	19	6	0	0	44	62	158	33	0	0	253	3	128	34	0	3	165	561
5:00 PM	9	7	23	0	0	39	7	2	0	0	0	9	18	43	7	0	1	68	1	45	8	0	2	54	170
5:15 PM	6	2	13	0	2	21	5	0	1	0	0	6	13	49	6	0	0	68	1	35	9	0	3	45	140

5:30 PM	3	3	15	0	1	21	5	2	3	0	0	10	12	52	2	0	0	66	0	28	6	0	1	34	131
5:45 PM	9	0	16	0	2	25	3	2	2	0	1	7	16	27	7	0	3	50	0	31	3	0	1	34	116
Hourly Total	27	12	67	0	5	106	20	6	6	0	1	32	59	171	22	0	4	252	2	139	26	0	7	167	557
6:00 PM	5	2	8	0	0	15	4	0	1	1	0	6	15	33	4	0	0	52	3	25	5	0	0	33	106
6:15 PM	4	4	15	0	0	23	0	2	0	0	0	2	6	26	4	0	0	36	0	17	2	0	2	19	80
6:30 PM	2	0	11	0	0	13	6	4	0	0	0	10	13	22	2	0	0	37	1	14	2	0	0	17	77
6:45 PM	3	2	5	0	0	10	0	3	0	0	0	3	11	23	4	0	0	38	1	16	4	0	1	21	72
Hourly Total	14	8	39	0	0	61	10	9	1	1	0	21	45	104	14	0	0	163	5	72	13	0	3	90	335
Grand Total	159	91	367	0	26	617	151	100	34	1	3	286	359	978	154	0	16	1491	25	887	189	0	41	1101	3495
Approach %	25.8	14.7	59.5	0.0	-	-	52.8	35.0	11.9	0.3	-	-	24.1	65.6	10.3	0.0	-	-	2.3	80.6	17.2	0.0	-	-	-
Total %	4.5	2.6	10.5	0.0	-	17.7	4.3	2.9	1.0	0.0	-	8.2	10.3	28.0	4.4	0.0	-	42.7	0.7	25.4	5.4	0.0	-	31.5	-
Motorcycles	2	0	2	0	-	4	0	0	0	0	-	0	2	12	0	0	-	14	0	12	3	0	-	15	33
% Motorcycles	1.3	0.0	0.5	-	-	0.6	0.0	0.0	0.0	0.0	-	0.0	0.6	1.2	0.0	-	-	0.9	0.0	1.4	1.6	-	-	1.4	0.9
Cars & Light Goods	151	87	361	0	-	599	149	95	31	1	-	276	350	939	152	0	-	1441	25	835	179	0	-	1039	3355
% Cars & Light Goods	95.0	95.6	98.4	-	-	97.1	98.7	95.0	91.2	100.0	-	96.5	97.5	96.0	98.7	-	-	96.6	100.0	94.1	94.7	-	-	94.4	96.0
Buses	2	2	1	0	-	5	1	1	0	0	-	2	2	6	0	0	-	8	0	7	2	0	-	9	24
% Buses	1.3	2.2	0.3	-	-	0.8	0.7	1.0	0.0	0.0	-	0.7	0.6	0.6	0.0	-	-	0.5	0.0	0.8	1.1	-	-	0.8	0.7
Single-Unit Trucks	3	1	2	0	-	6	1	1	1	0	-	3	2	14	2	0	-	18	0	24	3	0	-	27	54
% Single-Unit Trucks	1.9	1.1	0.5	-	-	1.0	0.7	1.0	2.9	0.0	-	1.0	0.6	1.4	1.3	-	-	1.2	0.0	2.7	1.6	-	-	2.5	1.5
Articulated Trucks	1	0	1	0	-	2	0	0	0	0	-	0	2	7	0	0	-	9	0	8	1	0	-	9	20
% Articulated Trucks	0.6	0.0	0.3	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.6	0.7	0.0	-	-	0.6	0.0	0.9	0.5	-	-	0.8	0.6
Bicycles on Road	0	1	0	0	-	1	0	3	2	0	-	5	1	0	0	0	-	1	0	1	1	0	-	2	9
% Bicycles on Road	0.0	1.1	0.0	-	-	0.2	0.0	3.0	5.9	0.0	-	1.7	0.3	0.0	0.0	-	-	0.1	0.0	0.1	0.5	-	-	0.2	0.3
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	15.4	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	4.9	-	-
Pedestrians	-	-	-	-	22	-	-	-	-	-	3	-	-	-	-	-	16	-	-	-	-	-	39	-	-
% Pedestrians	-	-	-	-	84.6	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	95.1	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

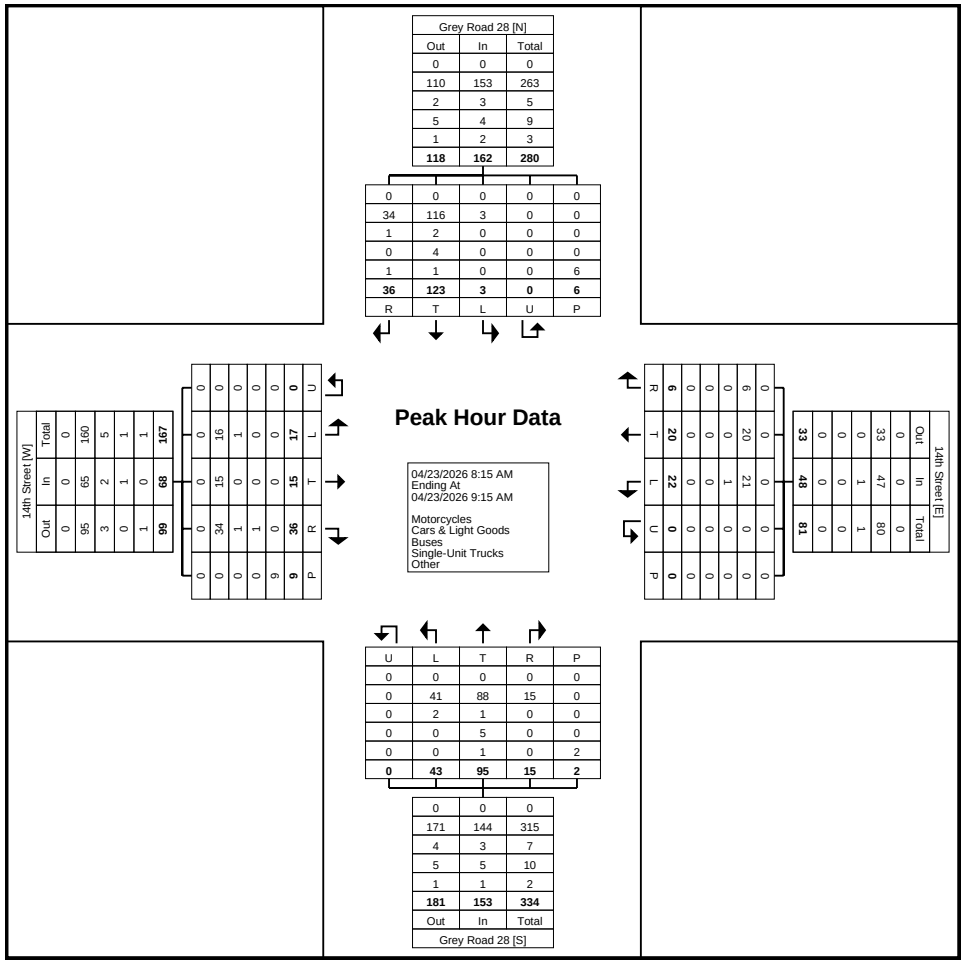
Turning Movement Peak Hour Data (8:15 AM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	5	3	11	0	4	19	4	5	0	0	0	9	15	31	3	0	2	49	1	29	17	0	1	47	124
8:30 AM	6	1	4	0	0	11	5	6	2	0	0	13	13	18	3	0	0	34	1	38	5	0	0	44	102
8:45 AM	2	6	12	0	2	20	10	4	2	0	0	16	8	22	5	0	0	35	1	27	10	0	2	38	109
9:00 AM	4	5	9	0	3	18	3	5	2	0	0	10	7	24	4	0	0	35	0	29	4	0	3	33	96
Total	17	15	36	0	9	68	22	20	6	0	0	48	43	95	15	0	2	153	3	123	36	0	6	162	431
Approach %	25.0	22.1	52.9	0.0	-	-	45.8	41.7	12.5	0.0	-	-	28.1	62.1	9.8	0.0	-	-	1.9	75.9	22.2	0.0	-	-	-
Total %	3.9	3.5	8.4	0.0	-	15.8	5.1	4.6	1.4	0.0	-	11.1	10.0	22.0	3.5	0.0	-	35.5	0.7	28.5	8.4	0.0	-	37.6	-
PHF	0.708	0.625	0.750	0.000	-	0.850	0.550	0.833	0.750	0.000	-	0.750	0.717	0.766	0.750	0.000	-	0.781	0.750	0.809	0.529	0.000	-	0.862	0.869
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	16	15	34	0	-	65	21	20	6	0	-	47	41	88	15	0	-	144	3	116	34	0	-	153	409
% Cars & Light Goods	94.1	100.0	94.4	-	-	95.6	95.5	100.0	100.0	-	-	97.9	95.3	92.6	100.0	-	-	94.1	100.0	94.3	94.4	-	-	94.4	94.9
Buses	1	0	1	0	-	2	1	0	0	0	-	1	2	1	0	0	-	3	0	2	1	0	-	3	9
% Buses	5.9	0.0	2.8	-	-	2.9	4.5	0.0	0.0	-	-	2.1	4.7	1.1	0.0	-	-	2.0	0.0	1.6	2.8	-	-	1.9	2.1
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	5	0	0	-	5	0	4	0	0	-	4	10
% Single-Unit Trucks	0.0	0.0	2.8	-	-	1.5	0.0	0.0	0.0	-	-	0.0	0.0	5.3	0.0	-	-	3.3	0.0	3.3	0.0	-	-	2.5	2.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	1	0	-	2	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	0.7	0.0	0.8	2.8	-	-	1.2	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 5



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

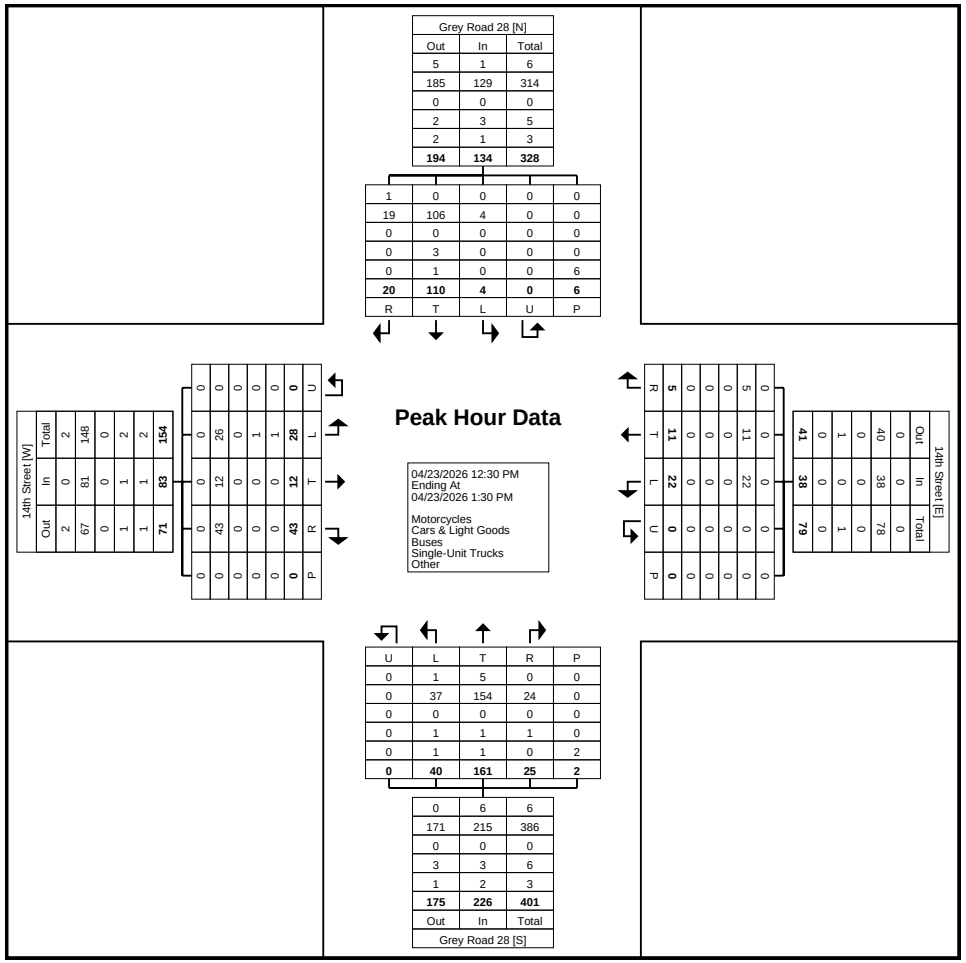
Turning Movement Peak Hour Data (12:30 PM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	7	2	11	0	0	20	4	2	2	0	0	8	9	33	4	0	0	46	0	26	2	0	1	28	102
12:45 PM	5	4	7	0	0	16	4	3	1	0	0	8	10	38	8	0	1	56	2	28	10	0	2	40	120
1:00 PM	11	4	12	0	0	27	6	4	1	0	0	11	8	45	5	0	0	58	1	26	1	0	2	28	124
1:15 PM	5	2	13	0	0	20	8	2	1	0	0	11	13	45	8	0	1	66	1	30	7	0	1	38	135
Total	28	12	43	0	0	83	22	11	5	0	0	38	40	161	25	0	2	226	4	110	20	0	6	134	481
Approach %	33.7	14.5	51.8	0.0	-	-	57.9	28.9	13.2	0.0	-	-	17.7	71.2	11.1	0.0	-	-	3.0	82.1	14.9	0.0	-	-	-
Total %	5.8	2.5	8.9	0.0	-	17.3	4.6	2.3	1.0	0.0	-	7.9	8.3	33.5	5.2	0.0	-	47.0	0.8	22.9	4.2	0.0	-	27.9	-
PHF	0.636	0.750	0.827	0.000	-	0.769	0.688	0.688	0.625	0.000	-	0.864	0.769	0.894	0.781	0.000	-	0.856	0.500	0.917	0.500	0.000	-	0.838	0.891
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	1	5	0	0	-	6	0	0	1	0	-	1	7
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.5	3.1	0.0	-	-	2.7	0.0	0.0	5.0	-	-	0.7	1.5
Cars & Light Goods	26	12	43	0	-	81	22	11	5	0	-	38	37	154	24	0	-	215	4	106	19	0	-	129	463
% Cars & Light Goods	92.9	100.0	100.0	-	-	97.6	100.0	100.0	100.0	-	-	100.0	92.5	95.7	96.0	-	-	95.1	100.0	96.4	95.0	-	-	96.3	96.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	1	1	0	-	3	0	3	0	0	-	3	7
% Single-Unit Trucks	3.6	0.0	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	2.5	0.6	4.0	-	-	1.3	0.0	2.7	0.0	-	-	2.2	1.5
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	0	1	0	0	-	1	4
% Articulated Trucks	3.6	0.0	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	2.5	0.6	0.0	-	-	0.9	0.0	0.9	0.0	-	-	0.7	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026


Grey Road 28 [N]
Out In Total
5 1 6
185 129 314
0 0 0
2 3 5
2 1 3
194 134 328
1 0 0 0 0
19 106 4 0 0
0 0 0 0 0
0 3 0 0 0
0 1 0 0 6
20 110 4 0 6
R T L U P
14th Street [W]
Out In Total
2 0 2
67 81 148
0 0 0
1 1 2
1 1 2
71 83 154
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Peak Hour Data (4:45 PM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	6	1	18	0	3	25	5	4	0	0	0	9	13	41	13	0	0	67	0	36	10	0	0	46	147
5:00 PM	9	7	23	0	0	39	7	2	0	0	0	9	18	43	7	0	1	68	1	45	8	0	2	54	170
5:15 PM	6	2	13	0	2	21	5	0	1	0	0	6	13	49	6	0	0	68	1	35	9	0	3	45	140
5:30 PM	3	3	15	0	1	21	5	2	3	0	0	10	12	52	2	0	0	66	0	28	6	0	1	34	131
Total	24	13	69	0	6	106	22	8	4	0	0	34	56	185	28	0	1	269	2	144	33	0	6	179	588
Approach %	22.6	12.3	65.1	0.0	-	-	64.7	23.5	11.8	0.0	-	-	20.8	68.8	10.4	0.0	-	-	1.1	80.4	18.4	0.0	-	-	-
Total %	4.1	2.2	11.7	0.0	-	18.0	3.7	1.4	0.7	0.0	-	5.8	9.5	31.5	4.8	0.0	-	45.7	0.3	24.5	5.6	0.0	-	30.4	-
PHF	0.667	0.464	0.750	0.000	-	0.679	0.786	0.500	0.333	0.000	-	0.850	0.778	0.889	0.538	0.000	-	0.989	0.500	0.800	0.825	0.000	-	0.829	0.865
Motorcycles	1	0	0	0	-	1	0	0	0	0	-	0	1	2	0	0	-	3	0	4	0	0	-	4	8
% Motorcycles	4.2	0.0	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	1.8	1.1	0.0	-	-	1.1	0.0	2.8	0.0	-	-	2.2	1.4
Cars & Light Goods	23	12	69	0	-	104	21	8	3	0	-	32	55	181	28	0	-	264	2	129	33	0	-	164	564
% Cars & Light Goods	95.8	92.3	100.0	-	-	98.1	95.5	100.0	75.0	-	-	94.1	98.2	97.8	100.0	-	-	98.1	100.0	89.6	100.0	-	-	91.6	95.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	4
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.8	0.0	-	-	2.2	0.7
Single-Unit Trucks	0	1	0	0	-	1	1	0	0	0	-	1	0	1	0	0	-	1	0	6	0	0	-	6	9
% Single-Unit Trucks	0.0	7.7	0.0	-	-	0.9	4.5	0.0	0.0	-	-	2.9	0.0	0.5	0.0	-	-	0.4	0.0	4.2	0.0	-	-	3.4	1.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	25.0	-	-	2.9	0.0	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.6	0.3
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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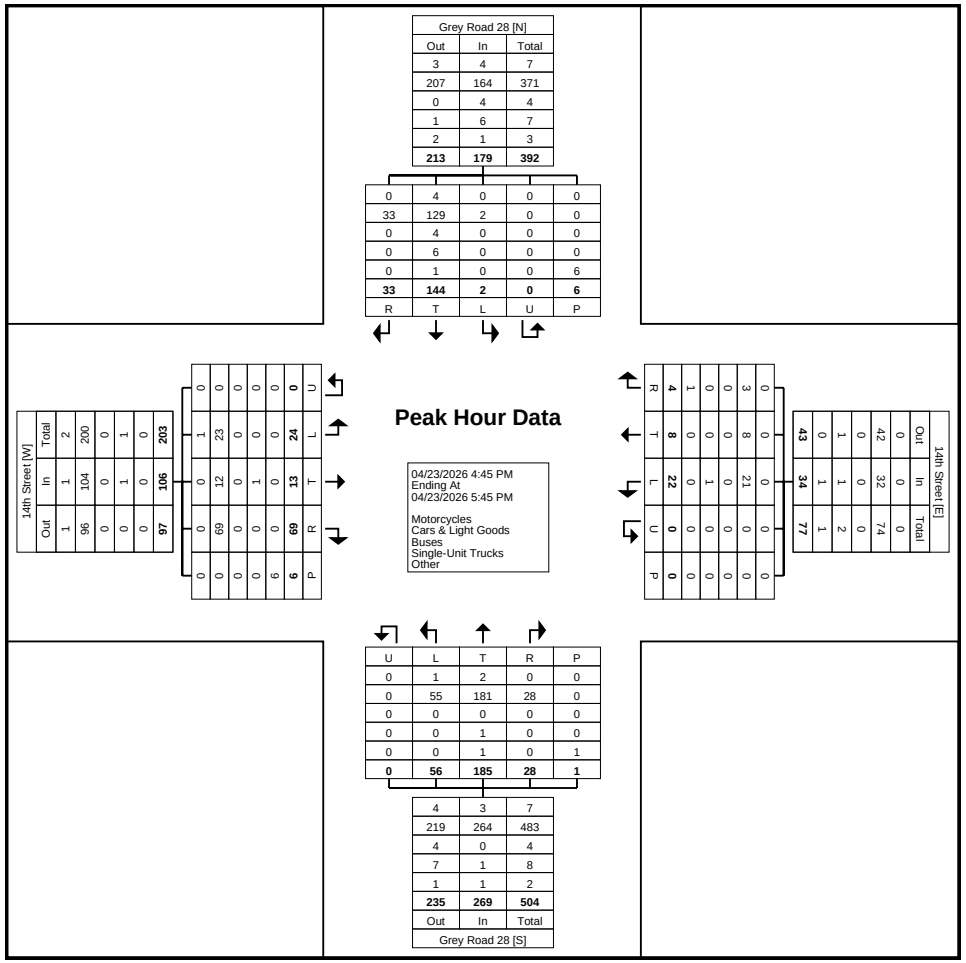
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	3	6	15	0	2	24	8	8	2	0	0	18	11	38	9	0	0	58	1	32	6	0	3	39	139
11:15 AM	9	1	15	0	0	25	10	4	2	0	0	16	15	30	11	1	0	57	0	35	2	0	0	37	135
11:30 AM	3	7	14	0	2	24	7	5	3	0	0	15	12	50	5	0	0	67	0	41	4	0	0	45	151
11:45 AM	6	1	13	0	1	20	4	6	0	0	0	10	8	48	7	0	0	63	1	41	1	0	0	43	136
Hourly Total	21	15	57	0	5	93	29	23	7	0	0	59	46	166	32	1	0	245	2	149	13	0	3	164	561
12:00 PM	5	1	12	0	0	18	2	4	0	0	0	6	12	35	7	0	0	54	1	42	8	0	0	51	129
12:15 PM	5	2	13	0	1	20	7	4	0	0	0	11	6	39	8	0	0	53	1	33	5	0	1	39	123
12:30 PM	6	1	8	0	0	15	6	2	2	0	0	10	10	37	10	1	0	58	1	50	3	0	0	54	137
12:45 PM	6	0	8	0	0	14	5	4	0	0	0	9	14	28	8	0	0	50	1	35	7	0	0	43	116
Hourly Total	22	4	41	0	1	67	20	14	2	0	0	36	42	139	33	1	0	215	4	160	23	0	1	187	505
1:00 PM	5	2	14	0	0	21	3	3	2	0	0	8	13	40	5	0	1	58	0	36	6	0	0	42	129
1:15 PM	5	4	18	0	1	27	6	0	2	0	0	8	11	39	7	0	0	57	1	35	2	0	0	38	130
1:30 PM	8	3	13	0	1	24	10	3	1	0	0	14	14	44	8	0	0	66	2	37	8	0	1	47	151
1:45 PM	5	0	8	0	0	13	7	2	1	0	0	10	7	43	7	0	0	57	0	35	4	0	1	39	119
Hourly Total	23	9	53	0	2	85	26	8	6	0	0	40	45	166	27	0	1	238	3	143	20	0	2	166	529
2:00 PM	7	3	15	0	2	25	7	2	1	0	0	10	9	43	9	0	0	61	0	31	3	0	2	34	130
2:15 PM	1	2	11	0	0	14	7	0	1	0	1	8	17	38	4	0	1	59	1	40	4	0	0	45	126
2:30 PM	0	1	13	0	0	14	2	5	0	0	0	7	9	46	4	0	0	59	0	38	9	0	0	47	127
2:45 PM	6	1	14	0	1	21	3	1	0	0	0	4	14	37	6	0	0	57	0	32	5	0	1	37	119
Hourly Total	14	7	53	0	3	74	19	8	2	0	1	29	49	164	23	0	1	236	1	141	21	0	3	163	502
Grand Total	80	35	204	0	11	319	94	53	17	0	1	164	182	635	115	2	2	934	10	593	77	0	9	680	2097
Approach %	25.1	11.0	63.9	0.0	-	-	57.3	32.3	10.4	0.0	-	-	19.5	68.0	12.3	0.2	-	-	1.5	87.2	11.3	0.0	-	-	-
Total %	3.8	1.7	9.7	0.0	-	15.2	4.5	2.5	0.8	0.0	-	7.8	8.7	30.3	5.5	0.1	-	44.5	0.5	28.3	3.7	0.0	-	32.4	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	80	35	204	0	-	319	94	53	17	0	-	164	179	635	115	2	-	931	10	591	77	0	-	678	2092
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.4	100.0	100.0	100.0	-	99.7	100.0	99.7	100.0	-	-	99.7	99.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	3	0	0	0	-	3	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.6	0.0	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	-	0.3	0.1

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	9.1	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	90.9	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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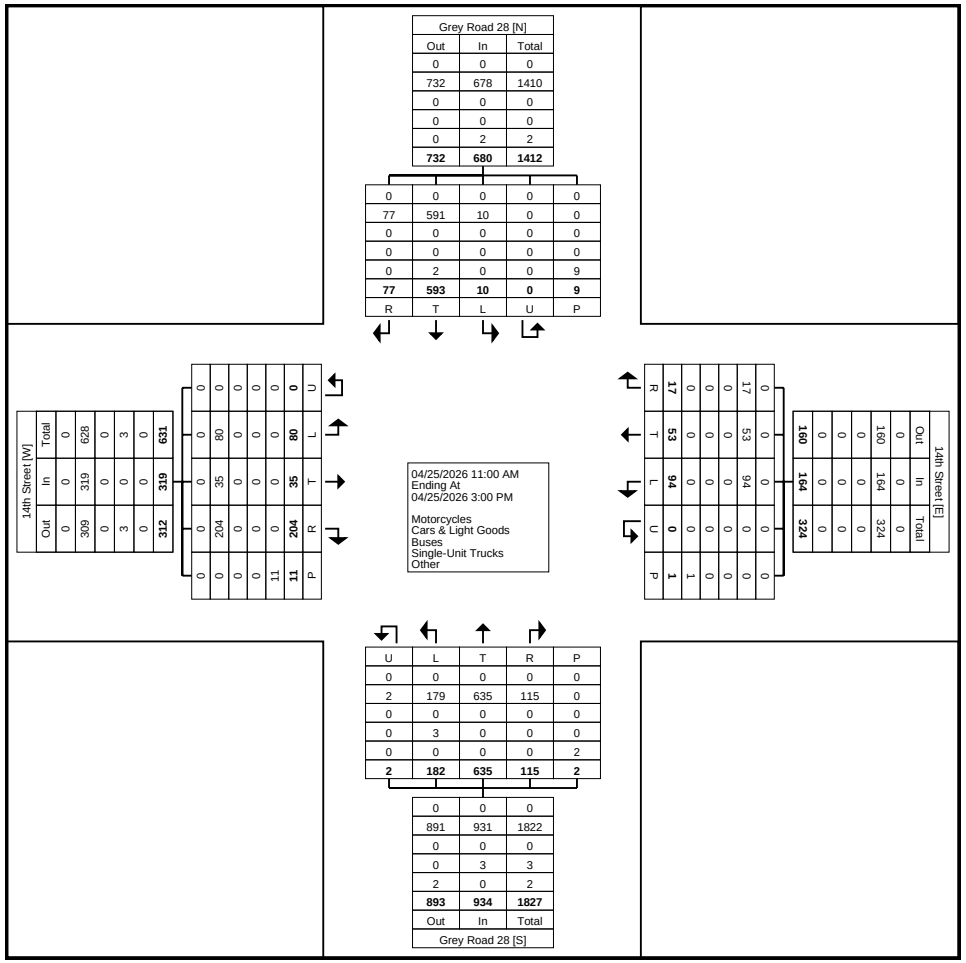
Start Date: 04/25/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

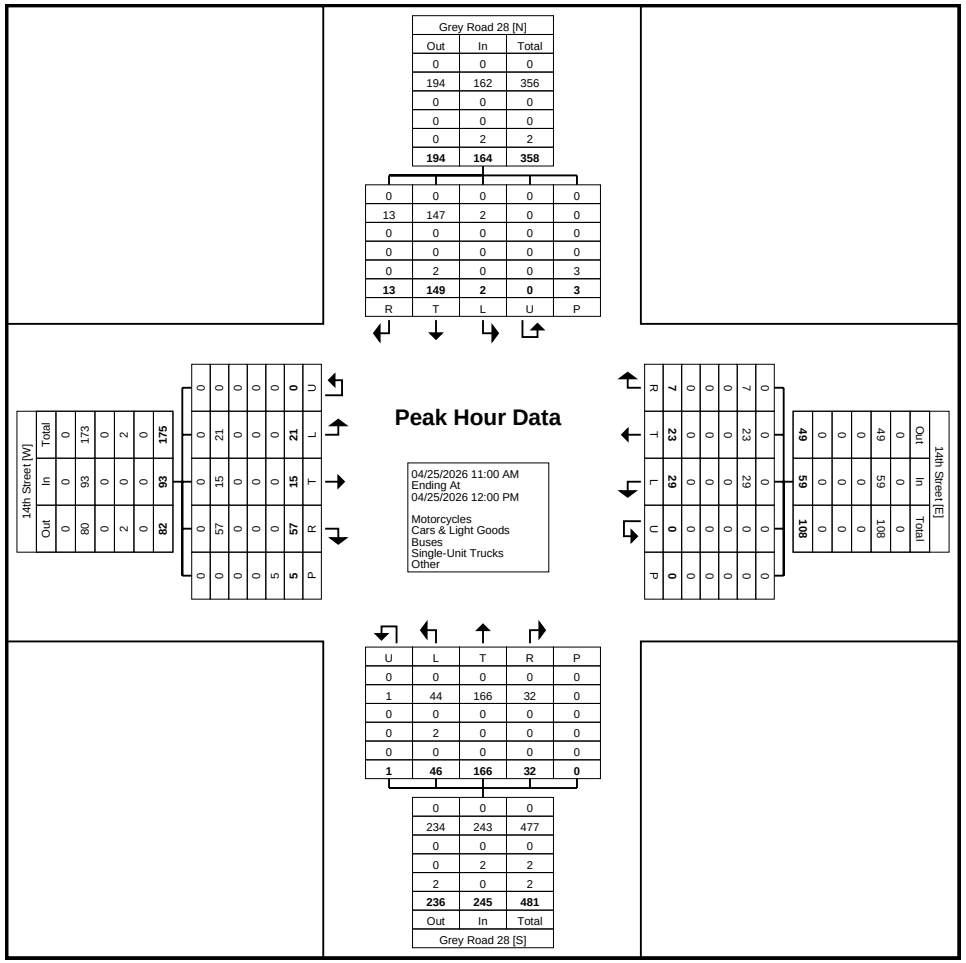
Turning Movement Peak Hour Data (11:00 AM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	3	6	15	0	2	24	8	8	2	0	0	18	11	38	9	0	0	58	1	32	6	0	3	39	139
11:15 AM	9	1	15	0	0	25	10	4	2	0	0	16	15	30	11	1	0	57	0	35	2	0	0	37	135
11:30 AM	3	7	14	0	2	24	7	5	3	0	0	15	12	50	5	0	0	67	0	41	4	0	0	45	151
11:45 AM	6	1	13	0	1	20	4	6	0	0	0	10	8	48	7	0	0	63	1	41	1	0	0	43	136
Total	21	15	57	0	5	93	29	23	7	0	0	59	46	166	32	1	0	245	2	149	13	0	3	164	561
Approach %	22.6	16.1	61.3	0.0	-	-	49.2	39.0	11.9	0.0	-	-	18.8	67.8	13.1	0.4	-	-	1.2	90.9	7.9	0.0	-	-	-
Total %	3.7	2.7	10.2	0.0	-	16.6	5.2	4.1	1.2	0.0	-	10.5	8.2	29.6	5.7	0.2	-	43.7	0.4	26.6	2.3	0.0	-	29.2	-
PHF	0.583	0.536	0.950	0.000	-	0.930	0.725	0.719	0.583	0.000	-	0.819	0.767	0.830	0.727	0.250	-	0.914	0.500	0.909	0.542	0.000	-	0.911	0.929
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	21	15	57	0	-	93	29	23	7	0	-	59	44	166	32	1	-	243	2	147	13	0	-	162	557
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	95.7	100.0	100.0	100.0	-	99.2	100.0	98.7	100.0	-	-	98.8	99.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	2	0	0	0	0	-	0	2
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	4.3	0.0	0.0	0.0	-	0.8	0.0	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.3	0.0	-	-	1.2	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

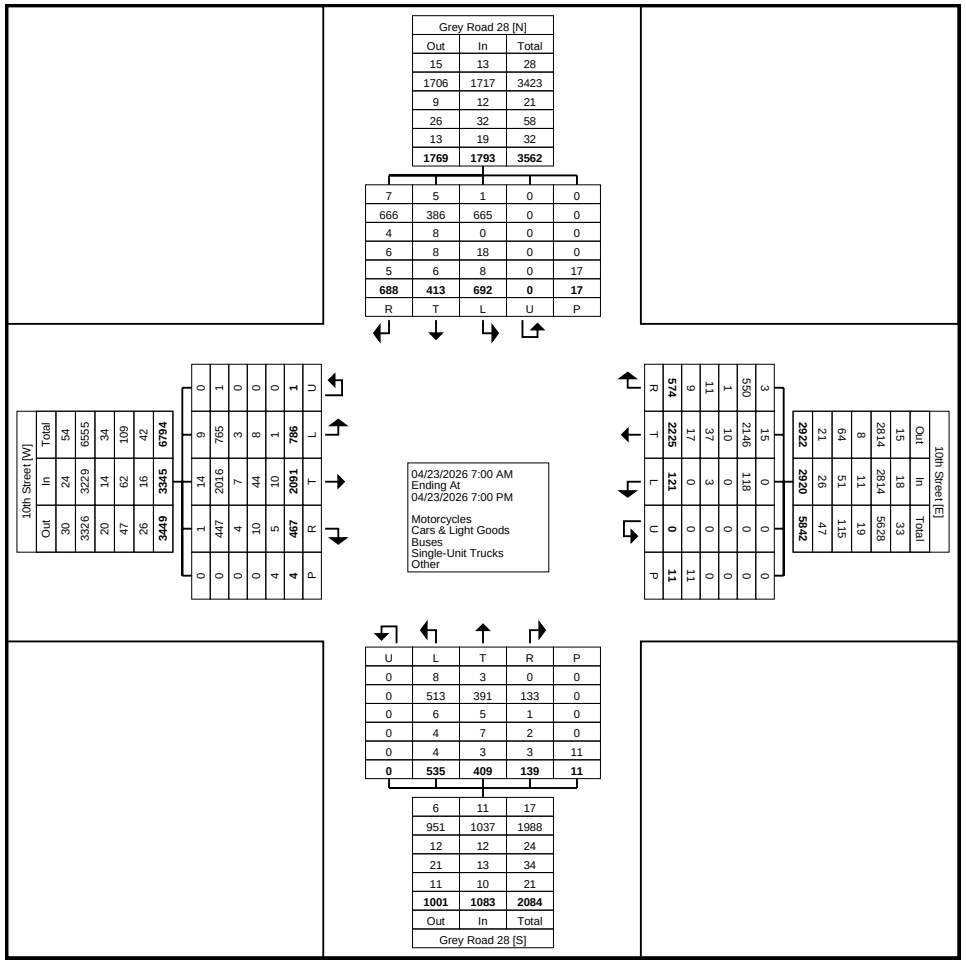
Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	10	23	6	0	0	39	1	30	9	0	0	40	8	6	3	0	0	17	5	3	16	0	1	24	120
7:15 AM	13	37	8	0	0	58	1	37	9	0	0	47	5	10	3	0	0	18	5	7	12	0	0	24	147
7:30 AM	12	38	10	1	0	61	2	53	7	0	0	62	10	7	1	0	0	18	6	5	13	0	0	24	165
7:45 AM	9	56	10	0	0	75	4	60	14	0	0	78	13	13	4	0	0	30	8	10	15	0	0	33	216
Hourly Total	44	154	34	1	0	233	8	180	39	0	0	227	36	36	11	0	0	83	24	25	56	0	1	105	648
8:00 AM	14	38	11	0	0	63	5	78	10	0	0	93	17	10	2	0	0	29	9	10	15	0	0	34	219
8:15 AM	26	43	12	0	0	81	1	66	23	0	0	90	18	8	4	0	0	30	12	9	25	0	1	46	247
8:30 AM	24	46	7	0	0	77	1	83	12	0	0	96	10	17	2	0	0	29	9	10	38	0	0	57	259
8:45 AM	25	56	5	0	1	86	4	81	9	0	0	94	17	11	7	0	0	35	19	8	27	0	1	54	269
Hourly Total	89	183	35	0	1	307	11	308	54	0	0	373	62	46	15	0	0	123	49	37	105	0	2	191	994
9:00 AM	20	69	12	0	0	101	1	43	12	0	0	56	9	14	3	0	0	26	18	6	16	0	0	40	223
9:15 AM	25	61	7	0	0	93	1	52	20	0	0	73	13	10	1	0	0	24	15	13	20	0	0	48	238
9:30 AM	24	47	7	0	0	78	0	62	17	0	0	79	16	13	6	0	0	35	13	8	27	0	1	48	240
9:45 AM	40	50	9	0	0	99	6	75	14	0	0	95	11	13	3	0	0	27	28	10	28	0	1	66	287
Hourly Total	109	227	35	0	0	371	8	232	63	0	0	303	49	50	13	0	0	112	74	37	91	0	2	202	988
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	31	84	15	0	0	130	1	69	16	0	1	86	15	11	4	0	1	30	36	14	17	0	1	67	313
11:45 AM	36	62	18	0	0	116	4	75	20	0	0	99	19	13	6	0	0	38	24	12	24	0	0	60	313
Hourly Total	67	146	33	0	0	246	5	144	36	0	1	185	34	24	10	0	1	68	60	26	41	0	1	127	626
12:00 PM	25	84	18	0	2	127	3	68	20	0	0	91	16	13	4	0	3	33	24	20	23	0	0	67	318
12:15 PM	41	71	16	0	0	128	6	96	27	0	0	129	14	11	2	0	2	27	20	14	42	0	0	76	360
12:30 PM	31	80	11	0	0	122	6	73	16	0	2	95	16	19	4	0	0	39	37	13	29	0	0	79	335
12:45 PM	27	66	11	0	0	104	6	82	24	0	0	112	21	13	2	0	0	36	18	12	30	0	0	60	312
Hourly Total	124	301	56	0	2	481	21	319	87	0	2	427	67	56	12	0	5	135	99	59	124	0	0	282	1325
1:00 PM	25	71	20	0	0	116	6	54	21	0	0	81	16	18	2	0	0	36	17	13	29	0	0	59	292
1:15 PM	28	61	11	0	0	100	3	72	27	0	0	102	16	18	7	0	0	41	24	15	25	0	0	64	307
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	53	132	31	0	0	216	9	126	48	0	0	183	32	36	9	0	0	77	41	28	54	0	0	123	599
4:00 PM	32	79	18	0	0	129	2	94	23	0	0	119	25	17	8	0	0	50	47	25	16	0	2	88	386
4:15 PM	24	87	17	0	0	128	5	78	35	0	1	118	21	16	5	0	0	42	38	18	22	0	0	78	366
4:30 PM	20	80	23	0	0	123	2	70	23	0	1	95	27	22	5	0	0	54	27	17	20	0	0	64	336
4:45 PM	30	92	20	0	0	142	7	106	19	0	0	132	17	15	13	0	0	45	32	23	20	0	1	75	394
Hourly Total	106	338	78	0	0	522	16	348	100	0	2	464	90	70	31	0	0	191	144	83	78	0	3	305	1482
5:00 PM	32	84	28	0	1	144	4	71	24	0	0	99	26	14	6	0	1	46	31	22	25	0	1	78	367
5:15 PM	28	105	24	0	0	157	4	83	19	0	0	106	18	20	8	0	0	46	28	25	30	0	0	83	392

5:30 PM	24	92	21	0	0	137	10	84	21	0	0	115	16	15	6	0	2	37	35	16	15	0	0	66	355
5:45 PM	28	82	13	0	0	123	9	83	28	0	0	120	25	11	3	0	0	39	25	7	15	0	0	47	329
Hourly Total	112	363	86	0	1	561	27	321	92	0	0	440	85	60	23	0	3	168	119	70	85	0	1	274	1443
6:00 PM	24	71	19	0	0	114	7	55	19	0	3	81	22	12	2	0	1	36	17	17	20	0	4	54	285
6:15 PM	18	53	32	0	0	103	3	65	12	0	0	80	21	4	7	0	0	32	21	10	16	0	0	47	262
6:30 PM	20	67	13	0	0	100	3	59	10	0	3	72	22	11	3	0	1	36	30	14	8	0	3	52	260
6:45 PM	20	56	15	0	0	91	3	68	14	0	0	85	15	4	3	0	0	22	14	7	10	0	0	31	229
Hourly Total	82	247	79	0	0	408	16	247	55	0	6	318	80	31	15	0	2	126	82	48	54	0	7	184	1036
Grand Total	786	2091	467	1	4	3345	121	2225	574	0	11	2920	535	409	139	0	11	1083	692	413	688	0	17	1793	9141
Approach %	23.5	62.5	14.0	0.0	-	-	4.1	76.2	19.7	0.0	-	-	49.4	37.8	12.8	0.0	-	-	38.6	23.0	38.4	0.0	-	-	-
Total %	8.6	22.9	5.1	0.0	-	36.6	1.3	24.3	6.3	0.0	-	31.9	5.9	4.5	1.5	0.0	-	11.8	7.6	4.5	7.5	0.0	-	19.6	-
Motorcycles	9	14	1	0	-	24	0	15	3	0	-	18	8	3	0	0	-	11	1	5	7	0	-	13	66
% Motorcycles	1.1	0.7	0.2	0.0	-	0.7	0.0	0.7	0.5	-	-	0.6	1.5	0.7	0.0	-	-	1.0	0.1	1.2	1.0	-	-	0.7	0.7
Cars & Light Goods	765	2016	447	1	-	3229	118	2146	550	0	-	2814	513	391	133	0	-	1037	665	386	666	0	-	1717	8797
% Cars & Light Goods	97.3	96.4	95.7	100.0	-	96.5	97.5	96.4	95.8	-	-	96.4	95.9	95.6	95.7	-	-	95.8	96.1	93.5	96.8	-	-	95.8	96.2
Buses	3	7	4	0	-	14	0	10	1	0	-	11	6	5	1	0	-	12	0	8	4	0	-	12	49
% Buses	0.4	0.3	0.9	0.0	-	0.4	0.0	0.4	0.2	-	-	0.4	1.1	1.2	0.7	-	-	1.1	0.0	1.9	0.6	-	-	0.7	0.5
Single-Unit Trucks	8	44	10	0	-	62	3	37	11	0	-	51	4	7	2	0	-	13	18	8	6	0	-	32	158
% Single-Unit Trucks	1.0	2.1	2.1	0.0	-	1.9	2.5	1.7	1.9	-	-	1.7	0.7	1.7	1.4	-	-	1.2	2.6	1.9	0.9	-	-	1.8	1.7
Articulated Trucks	1	10	2	0	-	13	0	17	9	0	-	26	4	3	3	0	-	10	8	5	5	0	-	18	67
% Articulated Trucks	0.1	0.5	0.4	0.0	-	0.4	0.0	0.8	1.6	-	-	0.9	0.7	0.7	2.2	-	-	0.9	1.2	1.2	0.7	-	-	1.0	0.7
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	4
% Bicycles on Road	0.0	0.0	0.6	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	9.1	-	-	-	-	-	35.3	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	10	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	90.9	-	-	-	-	-	64.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 3



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

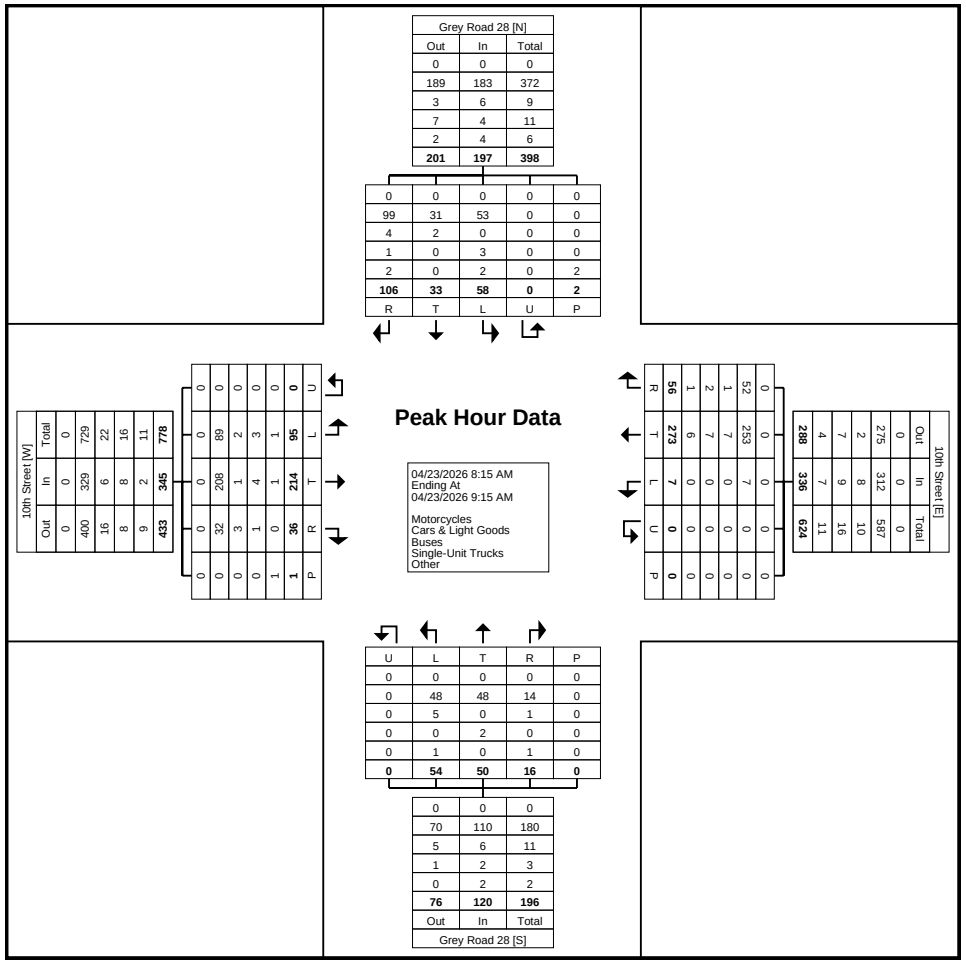
Turning Movement Peak Hour Data (8:15 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	26	43	12	0	0	81	1	66	23	0	0	90	18	8	4	0	0	30	12	9	25	0	1	46	247
8:30 AM	24	46	7	0	0	77	1	83	12	0	0	96	10	17	2	0	0	29	9	10	38	0	0	57	259
8:45 AM	25	56	5	0	1	86	4	81	9	0	0	94	17	11	7	0	0	35	19	8	27	0	1	54	269
9:00 AM	20	69	12	0	0	101	1	43	12	0	0	56	9	14	3	0	0	26	18	6	16	0	0	40	223
Total	95	214	36	0	1	345	7	273	56	0	0	336	54	50	16	0	0	120	58	33	106	0	2	197	998
Approach %	27.5	62.0	10.4	0.0	-	-	2.1	81.3	16.7	0.0	-	-	45.0	41.7	13.3	0.0	-	-	29.4	16.8	53.8	0.0	-	-	-
Total %	9.5	21.4	3.6	0.0	-	34.6	0.7	27.4	5.6	0.0	-	33.7	5.4	5.0	1.6	0.0	-	12.0	5.8	3.3	10.6	0.0	-	19.7	-
PHF	0.913	0.775	0.750	0.000	-	0.854	0.438	0.822	0.609	0.000	-	0.875	0.750	0.735	0.571	0.000	-	0.857	0.763	0.825	0.697	0.000	-	0.864	0.928
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	89	208	32	0	-	329	7	253	52	0	-	312	48	48	14	0	-	110	53	31	99	0	-	183	934
% Cars & Light Goods	93.7	97.2	88.9	-	-	95.4	100.0	92.7	92.9	-	-	92.9	88.9	96.0	87.5	-	-	91.7	91.4	93.9	93.4	-	-	92.9	93.6
Buses	2	1	3	0	-	6	0	7	1	0	-	8	5	0	1	0	-	6	0	2	4	0	-	6	26
% Buses	2.1	0.5	8.3	-	-	1.7	0.0	2.6	1.8	-	-	2.4	9.3	0.0	6.3	-	-	5.0	0.0	6.1	3.8	-	-	3.0	2.6
Single-Unit Trucks	3	4	1	0	-	8	0	7	2	0	-	9	0	2	0	0	-	2	3	0	1	0	-	4	23
% Single-Unit Trucks	3.2	1.9	2.8	-	-	2.3	0.0	2.6	3.6	-	-	2.7	0.0	4.0	0.0	-	-	1.7	5.2	0.0	0.9	-	-	2.0	2.3
Articulated Trucks	1	1	0	0	-	2	0	6	1	0	-	7	1	0	1	0	-	2	2	0	2	0	-	4	15
% Articulated Trucks	1.1	0.5	0.0	-	-	0.6	0.0	2.2	1.8	-	-	2.1	1.9	0.0	6.3	-	-	1.7	3.4	0.0	1.9	-	-	2.0	1.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

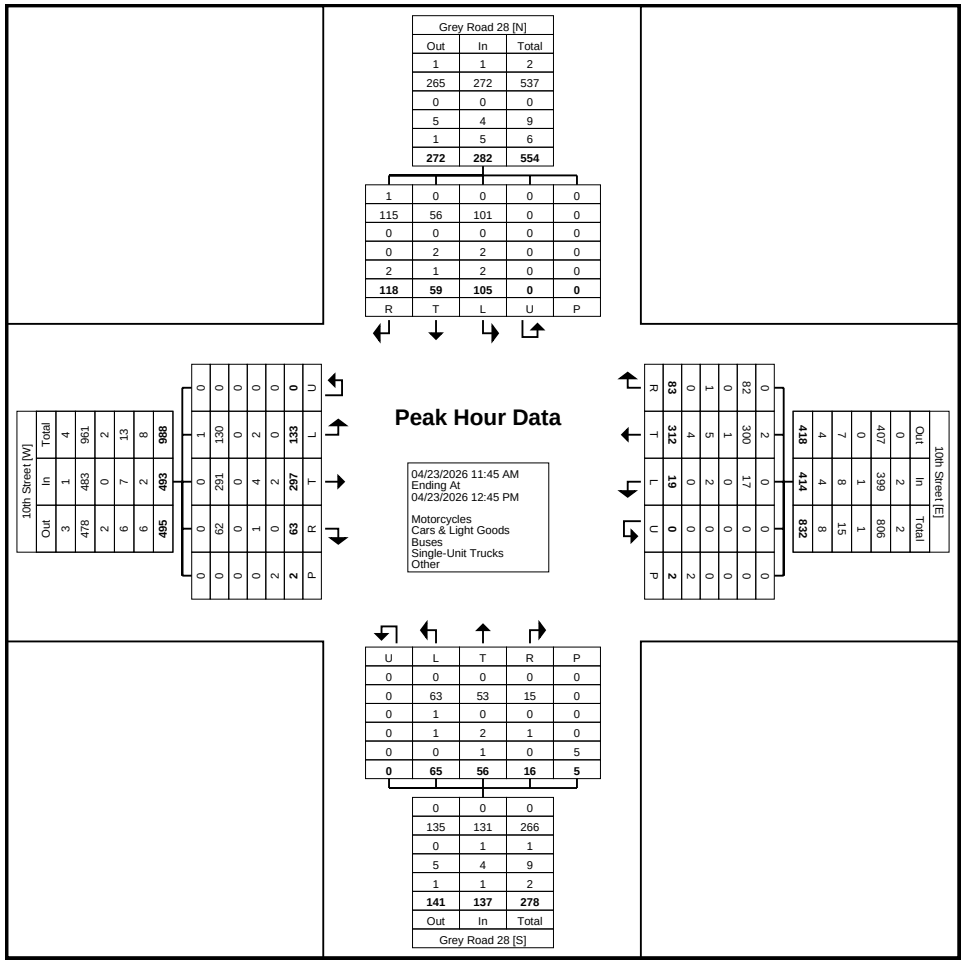
Turning Movement Peak Hour Data (11:45 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:45 AM	36	62	18	0	0	116	4	75	20	0	0	99	19	13	6	0	0	38	24	12	24	0	0	60	313
12:00 PM	25	84	18	0	2	127	3	68	20	0	0	91	16	13	4	0	3	33	24	20	23	0	0	67	318
12:15 PM	41	71	16	0	0	128	6	96	27	0	0	129	14	11	2	0	2	27	20	14	42	0	0	76	360
12:30 PM	31	80	11	0	0	122	6	73	16	0	2	95	16	19	4	0	0	39	37	13	29	0	0	79	335
Total	133	297	63	0	2	493	19	312	83	0	2	414	65	56	16	0	5	137	105	59	118	0	0	282	1326
Approach %	27.0	60.2	12.8	0.0	-	-	4.6	75.4	20.0	0.0	-	-	47.4	40.9	11.7	0.0	-	-	37.2	20.9	41.8	0.0	-	-	-
Total %	10.0	22.4	4.8	0.0	-	37.2	1.4	23.5	6.3	0.0	-	31.2	4.9	4.2	1.2	0.0	-	10.3	7.9	4.4	8.9	0.0	-	21.3	-
PHF	0.811	0.884	0.875	0.000	-	0.963	0.792	0.813	0.769	0.000	-	0.802	0.855	0.737	0.667	0.000	-	0.878	0.709	0.738	0.702	0.000	-	0.892	0.921
Motorcycles	1	0	0	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	4
% Motorcycles	0.8	0.0	0.0	-	-	0.2	0.0	0.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	-	-	0.4	0.3
Cars & Light Goods	130	291	62	0	-	483	17	300	82	0	-	399	63	53	15	0	-	131	101	56	115	0	-	272	1285
% Cars & Light Goods	97.7	98.0	98.4	-	-	98.0	89.5	96.2	98.8	-	-	96.4	96.9	94.6	93.8	-	-	95.6	96.2	94.9	97.5	-	-	96.5	96.9
Buses	0	0	0	0	-	0	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	1.5	0.0	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	2	4	1	0	-	7	2	5	1	0	-	8	1	2	1	0	-	4	2	2	0	0	-	4	23
% Single-Unit Trucks	1.5	1.3	1.6	-	-	1.4	10.5	1.6	1.2	-	-	1.9	1.5	3.6	6.3	-	-	2.9	1.9	3.4	0.0	-	-	1.4	1.7
Articulated Trucks	0	2	0	0	-	2	0	4	0	0	-	4	0	1	0	0	-	1	2	1	2	0	-	5	12
% Articulated Trucks	0.0	0.7	0.0	-	-	0.4	0.0	1.3	0.0	-	-	1.0	0.0	1.8	0.0	-	-	0.7	1.9	1.7	1.7	-	-	1.8	0.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

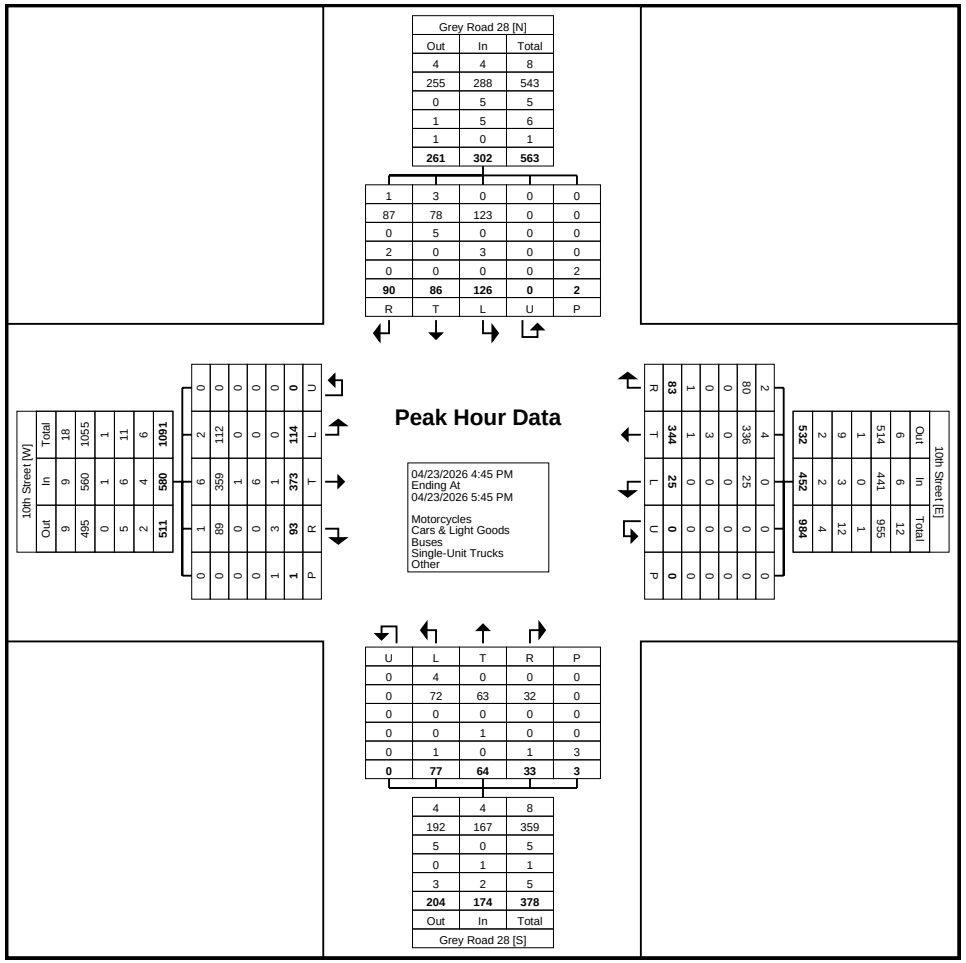
Turning Movement Peak Hour Data (4:45 PM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	30	92	20	0	0	142	7	106	19	0	0	132	17	15	13	0	0	45	32	23	20	0	1	75	394
5:00 PM	32	84	28	0	1	144	4	71	24	0	0	99	26	14	6	0	1	46	31	22	25	0	1	78	367
5:15 PM	28	105	24	0	0	157	4	83	19	0	0	106	18	20	8	0	0	46	28	25	30	0	0	83	392
5:30 PM	24	92	21	0	0	137	10	84	21	0	0	115	16	15	6	0	2	37	35	16	15	0	0	66	355
Total	114	373	93	0	1	580	25	344	83	0	0	452	77	64	33	0	3	174	126	86	90	0	2	302	1508
Approach %	19.7	64.3	16.0	0.0	-	-	5.5	76.1	18.4	0.0	-	-	44.3	36.8	19.0	0.0	-	-	41.7	28.5	29.8	0.0	-	-	-
Total %	7.6	24.7	6.2	0.0	-	38.5	1.7	22.8	5.5	0.0	-	30.0	5.1	4.2	2.2	0.0	-	11.5	8.4	5.7	6.0	0.0	-	20.0	-
PHF	0.891	0.888	0.830	0.000	-	0.924	0.625	0.811	0.865	0.000	-	0.856	0.740	0.800	0.635	0.000	-	0.946	0.900	0.860	0.750	0.000	-	0.910	0.957
Motorcycles	2	6	1	0	-	9	0	4	2	0	-	6	4	0	0	0	-	4	0	3	1	0	-	4	23
% Motorcycles	1.8	1.6	1.1	-	-	1.6	0.0	1.2	2.4	-	-	1.3	5.2	0.0	0.0	-	-	2.3	0.0	3.5	1.1	-	-	1.3	1.5
Cars & Light Goods	112	359	89	0	-	560	25	336	80	0	-	441	72	63	32	0	-	167	123	78	87	0	-	288	1456
% Cars & Light Goods	98.2	96.2	95.7	-	-	96.6	100.0	97.7	96.4	-	-	97.6	93.5	98.4	97.0	-	-	96.0	97.6	90.7	96.7	-	-	95.4	96.6
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	5	0	0	-	5	6
% Buses	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	5.8	0.0	-	-	1.7	0.4
Single-Unit Trucks	0	6	0	0	-	6	0	3	0	0	-	3	0	1	0	0	-	1	3	0	2	0	-	5	15
% Single-Unit Trucks	0.0	1.6	0.0	-	-	1.0	0.0	0.9	0.0	-	-	0.7	0.0	1.6	0.0	-	-	0.6	2.4	0.0	2.2	-	-	1.7	1.0
Articulated Trucks	0	1	0	0	-	1	0	1	1	0	-	2	1	0	1	0	-	2	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.3	1.2	-	-	0.4	1.3	0.0	3.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	3.2	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	31	70	18	0	0	119	8	74	18	0	0	100	17	14	6	0	0	37	37	18	24	0	0	79	335
11:15 AM	28	67	15	0	0	110	9	66	26	0	0	101	21	20	4	0	0	45	31	20	24	0	0	75	331
11:30 AM	45	91	19	0	0	155	6	70	15	0	0	91	18	11	11	0	0	40	38	16	28	0	1	82	368
11:45 AM	37	79	24	0	0	140	4	101	29	0	0	134	19	22	9	0	0	50	30	19	21	0	0	70	394
Hourly Total	141	307	76	0	0	524	27	311	88	0	0	426	75	67	30	0	0	172	136	73	97	0	1	306	1428
12:00 PM	27	91	22	0	2	140	3	83	17	0	0	103	21	16	5	0	0	42	46	14	27	0	1	87	372
12:15 PM	21	87	17	0	0	125	7	88	35	0	0	130	9	15	4	0	0	28	30	24	32	0	0	86	369
12:30 PM	28	82	21	0	0	131	2	75	17	0	0	94	24	9	3	0	0	36	39	19	26	0	0	84	345
12:45 PM	23	91	18	0	0	132	6	77	28	0	0	111	19	24	8	0	0	51	31	11	23	0	0	65	359
Hourly Total	99	351	78	0	2	528	18	323	97	0	0	438	73	64	20	0	0	157	146	68	108	0	1	322	1445
1:00 PM	38	97	22	0	0	157	6	75	26	0	0	107	12	14	4	0	1	30	47	20	21	0	0	88	382
1:15 PM	32	77	12	0	0	121	7	86	33	0	0	126	14	19	7	0	0	40	31	18	27	0	0	76	363
1:30 PM	37	63	13	0	0	113	10	73	31	0	0	114	19	12	8	0	0	39	34	15	21	0	0	70	336
1:45 PM	27	74	20	0	0	121	4	80	32	0	2	116	17	14	11	0	1	42	34	11	30	0	0	75	354
Hourly Total	134	311	67	0	0	512	27	314	122	0	2	463	62	59	30	0	2	151	146	64	99	0	0	309	1435
2:00 PM	38	98	17	0	1	153	11	68	24	0	0	103	15	11	8	0	1	34	36	10	28	0	0	74	364
2:15 PM	26	92	5	0	0	123	4	64	28	0	0	96	11	20	1	0	0	32	27	20	21	0	1	68	319
2:30 PM	34	79	5	0	0	118	6	60	27	0	2	93	13	16	7	0	0	36	30	15	28	0	4	73	320
2:45 PM	32	83	21	0	3	136	8	86	29	0	0	123	12	11	4	0	0	27	29	12	16	0	2	57	343
Hourly Total	130	352	48	0	4	530	29	278	108	0	2	415	51	58	20	0	1	129	122	57	93	0	7	272	1346
Grand Total	504	1321	269	0	6	2094	101	1226	415	0	4	1742	261	248	100	0	3	609	550	262	397	0	9	1209	5654
Approach %	24.1	63.1	12.8	0.0	-	-	5.8	70.4	23.8	0.0	-	-	42.9	40.7	16.4	0.0	-	-	45.5	21.7	32.8	0.0	-	-	-
Total %	8.9	23.4	4.8	0.0	-	37.0	1.8	21.7	7.3	0.0	-	30.8	4.6	4.4	1.8	0.0	-	10.8	9.7	4.6	7.0	0.0	-	21.4	-
Motorcycles	1	1	0	0	-	2	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	5
% Motorcycles	0.2	0.1	0.0	-	-	0.1	0.0	0.2	0.0	-	-	0.1	0.4	0.0	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	502	1317	268	0	-	2087	101	1220	410	0	-	1731	260	247	99	0	-	606	548	260	397	0	-	1205	5629
% Cars & Light Goods	99.6	99.7	99.6	-	-	99.7	100.0	99.5	98.8	-	-	99.4	99.6	99.6	99.0	-	-	99.5	99.6	99.2	100.0	-	-	99.7	99.6
Buses	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.2	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	0	-	2	0	3	4	0	-	7	0	1	1	0	-	2	1	0	0	0	-	1	12
% Single-Unit Trucks	0.0	0.2	0.0	-	-	0.1	0.0	0.2	1.0	-	-	0.4	0.0	0.4	1.0	-	-	0.3	0.2	0.0	0.0	-	-	0.1	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1	2	0	0	-	3	4
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.2	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.2	0.8	0.0	-	-	0.2	0.1

Bicycles on Road	0	0	1	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.4	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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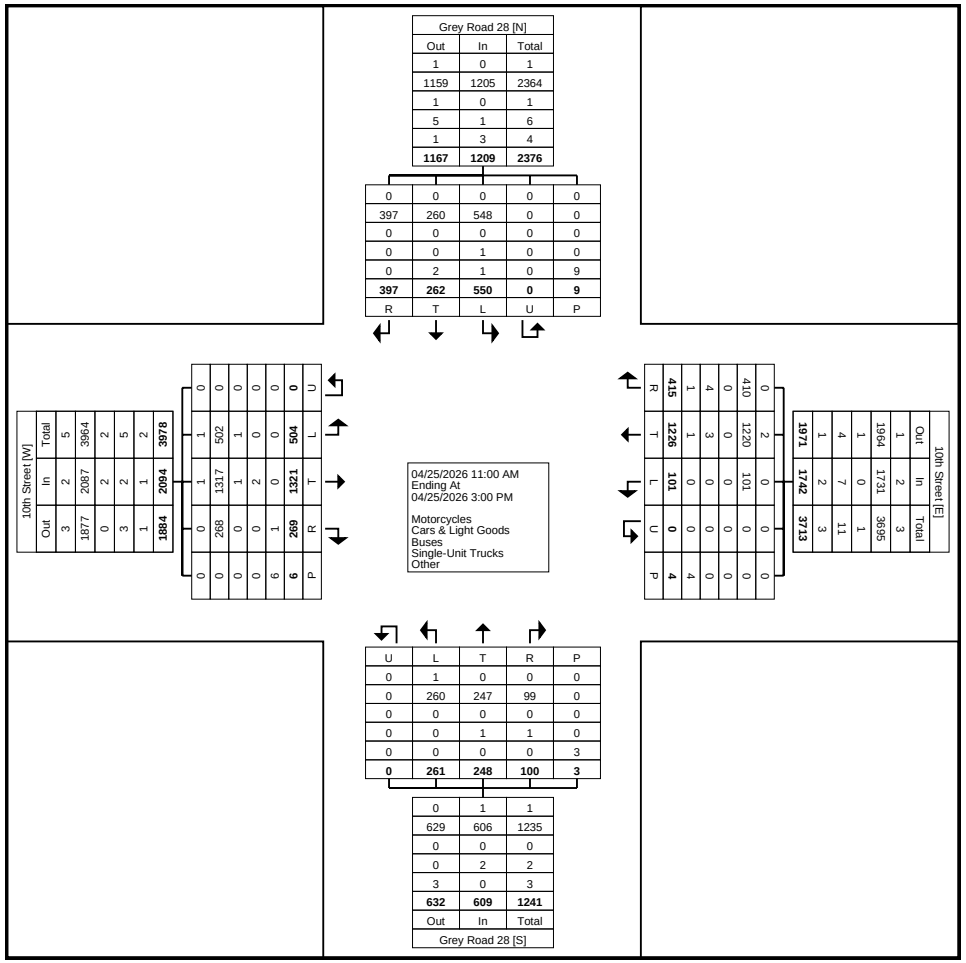
Site Code: 260040
Start Date: 04/25/2026


Grey Road 28 [N]
Out In Total
1 0 1
1159 1205 2364
1 0 1
5 1 6
1 3 4
1167 1209 2376
0 0 0 0 0
397 260 548 0 0
0 0 0 0 0
0 0 1 0 0
0 2 1 0 9
397 262 550 0 9
R T L U P
10th Street [W]
Out In Total
3 2 5
1877 2087 3964
0 2 2
3 2 5
1 1 2
1884 2094 3978
0 1 1 0 0
0 0 1 0 0
0 0 0 0 0
0 0 1 0 0
0 0 0 0 0
0 0 1 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

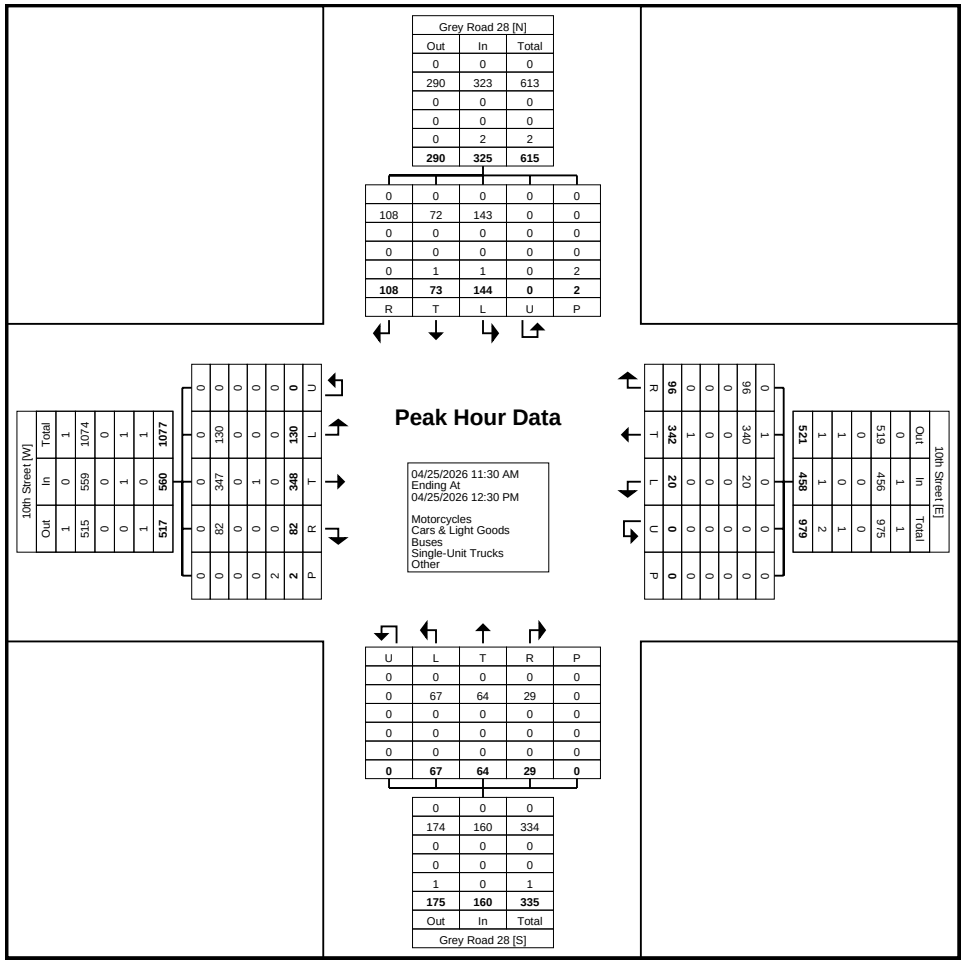
Turning Movement Peak Hour Data (11:30 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:30 AM	45	91	19	0	0	155	6	70	15	0	0	91	18	11	11	0	0	40	38	16	28	0	1	82	368
11:45 AM	37	79	24	0	0	140	4	101	29	0	0	134	19	22	9	0	0	50	30	19	21	0	0	70	394
12:00 PM	27	91	22	0	2	140	3	83	17	0	0	103	21	16	5	0	0	42	46	14	27	0	1	87	372
12:15 PM	21	87	17	0	0	125	7	88	35	0	0	130	9	15	4	0	0	28	30	24	32	0	0	86	369
Total	130	348	82	0	2	560	20	342	96	0	0	458	67	64	29	0	0	160	144	73	108	0	2	325	1503
Approach %	23.2	62.1	14.6	0.0	-	-	4.4	74.7	21.0	0.0	-	-	41.9	40.0	18.1	0.0	-	-	44.3	22.5	33.2	0.0	-	-	-
Total %	8.6	23.2	5.5	0.0	-	37.3	1.3	22.8	6.4	0.0	-	30.5	4.5	4.3	1.9	0.0	-	10.6	9.6	4.9	7.2	0.0	-	21.6	-
PHF	0.722	0.956	0.854	0.000	-	0.903	0.714	0.847	0.686	0.000	-	0.854	0.798	0.727	0.659	0.000	-	0.800	0.783	0.760	0.844	0.000	-	0.934	0.954
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	130	347	82	0	-	559	20	340	96	0	-	456	67	64	29	0	-	160	143	72	108	0	-	323	1498
% Cars & Light Goods	100.0	99.7	100.0	-	-	99.8	100.0	99.4	100.0	-	-	99.6	100.0	100.0	100.0	-	-	100.0	99.3	98.6	100.0	-	-	99.4	99.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7	1.4	0.0	-	-	0.6	0.1
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

20. EPAC300 PROGRAM LOG

Prepared By .....: Joel Merswolke_ Date: Jan 30 2013

Approved By.....: _____ Date: ____ / ____ / ____

Intersection Name.....: Hanover Grey rd 28 @ Grey rd 4_

UTILITIES - ACCESS

Access Code .....: _____ Codes: Four Digits (0000 - 9999)

PHASE DATA - VEHICLE TIMINGS

Basic Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green.....:	5	30	___	10	10	15	10	15	___	___	___	___	___	___	___	___
Passage Time .....:	40	50	___	30	40	50	40	50	___	___	___	___	___	___	___	___
Maximum No 1 .....:	25	35	___	18	25	35	25	35	___	___	___	___	___	___	___	___
Maximum No 2 .....:	30	50	___	18	30	50	30	50	___	___	___	___	___	___	___	___
Yellow Change .....:	3.0	5.0	___	4.0	4.0	4.0	4.0	4.0	___	___	___	___	___	___	___	___
Red Clearance .....:	___	2.0	___	2.0	2.0	2.0	1.0	2.0	___	___	___	___	___	___	___	___

Density Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seconds/Actuation .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Maximum Initial .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Time B4 Reduction.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cars B4 Reduction .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Time To Reduce.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Minimum Gap.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

PHASE DATA - PEDESTRIAN TIMINGS & CONTROL

Pedestrian Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk .....:	___	15	___	13	___	7	___	7	___	___	___	___	___	___	___	___
Pedestrian Clearance.....:	___	5	___	5	___	8	___	8	___	___	___	___	___	___	___	___

Pedestrian Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Walk.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extended Pedestrian Clear .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Act Rest In Walk.....:	___		___	___	___	___	___	___	___	___	___	___	___	___	___	___

Pedestrian Control Entry: “1” = Yes & “0” = No

PHASE DATA - VEHICLE CONTROL

Veh Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Non-Lock Memory.....:	1	1	1	1	___	___	___		___	___	___	___	___	___	___	___
Dual Entry.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Last Car Passage.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Conditional Service .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Simultaneous Gap .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Vehicle Control Entry: “1” = Yes & “0” = No

PHASE DATA - GENERAL CONTROL

General Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initialization ..... :	1	3	1	1	0	0	0	0	___	___	___	___	___	___	___	___
Non-Act Response ..... :	___	1	___	2	___	1	___	2	___	___	___	___	___	___	___	___
Vehicle Recall ..... :	___		___		___	___	___	___	___	___	___	___	___	___	___	___
Pedestrian Recall ..... :	___		___		___	___	___	___	___	___	___	___	___	___	___	___
Recall Delay ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Initialization ..... :	NONE	INACTIVE	RED	YELLOW	GREEN
Non-Act Response ..... :	NONE	TO NA I	TO NA II	TO BOTH	-----
Vehicle Recall ..... :	NONE	1 CALL	MINIMUM	MAXIMUM	SOFT
Pedestrian Recall ..... :	NONE	1 CALL	PED	NA	NA+

PHASE DATA - SEQUENCE CONTROL

Sequence Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Omit ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase - Yellow ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Omit Call..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	01 TO 16 (# - PHASE)
Phase Omit ..... :	NONE	Phase Is Omitted By # - Phase On
Phase - Yellow ..... :	NONE	Phase Yellow Is Omitted By # - Phase Yellow
Phase Omit Call ..... :	NONE	When Omitted, Dets Call # Phase

PHASE DATA - VEH DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Assigned Phase ..... :	_1_	_2_	_3_	_4_	_5_	_6_	_7_	_8_	___	___	___	___	___	___	___	___
Operation Mode ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Control Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode ..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - VEH DETECTOR CONTROL

Control Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Control Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - PED DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8
Assigned Phase ..... :	1	_2_	_3_	_4_	_5_	_6_	_7_	_8_
Operation Mode..... :	_1_	_1_	_1_	_1_	_1_	_1_	_1_	_1_
Switch..... :	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - SPC DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8
Assigned Phase ..... :	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

UNIT DATA - STARTUP & MISC

Startup Time..... :	__5_	Time In Seconds
Startup State ..... :	____	0-Flash 1-Red
Red Revert..... :	_40_	Time In Tenth Second
Auto Pedestrian Clear ..... :	____	0-No 1-Yes
Stop Time Reset ..... :	____	0-No 1-Yes
Alternate Sequence..... :	____	00-15 Alt Sequence ##

UNIT DATA - AUTOMATIC FLASH

TST A = Flash ..... : ____ 0 - NO / 1 - YES For TEST A Input For An Automatic Flash Input

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Alt Flash ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Entry Phase..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Flash Exit Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	
Flash ..... :	NO	RED	YEL	All = 0 Then Voltage Monitor Flash
Alt Flash ..... :	NO	YES	--	Used To Provide Wig-Wag Flashing
Flash Entry Phase..... :	NO	YES	--	Phase(s) To Precede Automatic Flash
Flash Exit Phase ..... :	NO	YES	--	Phase(s) To Follow Automatic Flash

UNIT DATA – OVERLAP

Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
OL A Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL B Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL C Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL D Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL E Phase(s)..... :	1	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL F Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL G Phase(s) ..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
OL H Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL I Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL J Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL K Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL L Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL M Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL N Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL O Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL P Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes: 0 – NO 1 - YES Phase Is Included In Overlap

UNIT DATA - OVERLAP

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OL A Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL B Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL C Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL D Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL E Channel(s)....:	1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL F Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL G Channel(s) ....:	__	__	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL H Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL I Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL J Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL K Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL L Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL M Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL N Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL O Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL P Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes: 0 – NO 1 - YES Overlap Outputs To Channel

Overlap Controls MUST First Be Assigned To Channels. Once Assigned, They Must Also Be Assigned To Hardware Output Pins.

UNIT DATA – OVERLAP

Control :	TRL GRN	TRL YEL	TRL RED	-GRN/YEL	+GRN
Overlap A ....:	____	____	____	____	____
Overlap B ....:	____	____	____	____	____
Overlap C ....:	____	____	____	____	____
Overlap D ....:	____	____	____	____	____
Overlap E ....:	____	____	____	____	____
Overlap F....:	____	____	____	____	____
Overlap G....:	____	____	____	____	____
Overlap H ....:	____	____	____	____	____
Overlap I....:	____	____	____	____	____
Overlap J ....:	____	____	____	____	____
Overlap K ....:	____	____	____	____	____
Overlap L....:	____	____	____	____	____
Overlap M....:	____	____	____	____	____
Overlap N ....:	____	____	____	____	____
Overlap O ....:	____	____	____	____	____
Overlap P ....:	____	____	____	____	____

Codes ....:

TRL GRN....: Time In Seconds
TRL YEL....: Time In Tenth Seconds
TRL RED....: Time In Tenth Seconds
-GRN / YEL ....:
+GRN ....:

UNIT DATA - RING STRUCTURE

Control Channel:	RING	NXT	CONCUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1 ....:	1	2		__	__	__	__	1	1	__	__	__	__	__	__	__	__	__	__
Phase 2 ....:	1	3		__	__	__	__	1	1	__	__	__	__	__	__	__	__	__	__
Phase 3 ....:	1	4		__	__	__	__	__	__	1	1	__	__	__	__	__	__	__	__
Phase 4 ....:	1	1		__	__	__	__	__	__	1	1	__	__	__	__	__	__	__	__
Phase 5 ....:	2	6		1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 6 ....:	2	7		1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 7 ....:	2	8		__	__	1	1	__	__	__	__	__	__	__	__	__	__	__	__
Phase 8 ....:	2	5		__	__	1	1	__	__	__	__	__	__	__	__	__	__	__	__
Phase 11 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 12 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 13 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 14 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 15 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 16 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes .....:

RING	Ring Number For Phase (1-4)
PH NXT	Phase Next In Ring (1-16)
CONCUR PH	Phase(s) To Run Concurrent (0-NO / 1-YES)

UNIT DATA - RING STRUCTURE

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ph 01 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 01 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 02 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 02 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 03 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 03 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 04 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 04 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 05 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 05 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 06 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 06 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 07 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 07 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 08 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 08 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 09 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 09 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 10 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 10 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

UNIT DATA - RING STRUCTURE

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ph 12 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 12 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 13 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 13 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 14 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 14 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 15 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 15 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 16 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 16 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes: 0 – NO 1 - YES Phase Vehicle / Pedest Outputs To Channel

Phase Controls MUST First Be Assigned To Channels. Once Assigned, They Must Also Be Assigned To Hardware Output Pins.

UNIT DATA - ALTERNATE SEQUENCE

Control	REVERSE PHASES							
Alternate Sequence 00..... :	NONE							
Alternate Sequence 01..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 02..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 03..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 04..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 05..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 06..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 07..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 08..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 09..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 10..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 11..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 12..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 13..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 14..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 15..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__

Reverse Phases Must Be In The Same Ring And Next To Each Other

UNIT DATA - PORT 1

ADDRESS	DESCRIPTION	PRES	M40
00	T&F BIU # 1 TS2 ..... :	___	___
01	T&F BIU # 2 TS2 ..... :	___	___
02	T&F BIU # 3 TS2 ..... :	___	___
03	T&F BIU # 4 TS2 ..... :	___	___
04	T&F BIU # 5 RESERVED ..... :	___	___
05	T&F BIU # 6 RESERVED ..... :	___	___
06	T&F BIU # 7 MFG USE..... :	___	___
07	T&F BIU # 8 MFG USE..... :	___	___
08	DET BIU # 1 TS2..... :	___	___
09	DET BIU # 2 TS2..... :	___	___
10	DET BIU # 3 TS2..... :	___	___
11	DET BIU # 4 TS2..... :	___	___
12	DET BIU # 5 RESERVED..... :	___	___
13	DET BIU # 6 RESERVED..... :	___	___
14	DET BIU # 7 MFG USE ..... :	___	___
15	DET BIU # 8 MFG USE ..... :	___	___
16	MALFUNCTION UNIT ..... :	___	___
17	DIAGNOSTIC (MSG 30)..... :	___	___
18	CONTROLLER UNIT..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
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___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___

PRES: 0-NO / 1-YES; this Port 1 device is present.

M40: 0-NO / 1-YES; this Port 1 device is to receive Message 40 to query same for peer to peer messages.

UNIT DATA - I/O MISC

Ring I/O ..... Ring:	1	2	3	4	
Input Response ..... :	____	____	____	____	Ring # (1-4)
Output Select ..... :	____	____	____	____	Ring # (1-4)

I/O Modes ..... :	INPUT	OUTPUT
"ABC" Connector ..... :	____	____
"D" Connector ..... :	____	____

UNIT DATA - SIGNAL DRIVER OUTPUTS

SIGNAL DRIVER GROUP	CHN	HARDWARE OUTPUT PIN	SET	Reference SET ## Function
_____	01	_____	____	01 - Ph 1 Red/Yel/Grn
_____	02	_____	____	02 - Ph 2 Red/Yel/Grn
_____	03	_____	____	03 - Ph 3 Red/Yel/Grn
_____	04	_____	____	04 - Ph 4 Red/Yel/Grn
_____	05	_____	____	05 - Ph 5 Red/Yel/Grn
_____	06	_____	____	06 - Ph 6 Red/Yel/Grn
_____	07	_____	____	07 - Ph 7 Red/Yel/Grn
_____	08	_____	____	08 - Ph 8 Red/Yel/Grn
_____	09	_____	____	09 - Ph 1 DW/PC/WK
_____	10	_____	____	10 - Ph 2 DW/PC/WK
_____	11	_____	____	11 - Ph 3 DW/PC/WK
_____	12	_____	____	12 - Ph 4 DW/PC/WK
_____	13	_____	____	13 - Ph 5 DW/PC/WK
_____	14	_____	____	14 - Ph 6 DW/PC/WK
_____	15	_____	____	15 - Ph 7 DW/PC/WK
_____	16	_____	____	16 - Ph 8 DW/PC/WK
_____	17	_____	____	17 - OL A Red/Yel/Grn
_____	18	_____	____	18 - OL B Red/Yel/Grn
_____	19	_____	____	19 - OL C Red/Yel/Grn
_____	20	_____	____	20 - OL D Red/Yel/Grn
_____	21	_____	____	21 - Ph 1 On/Nxt/Chk
_____	22	_____	____	22 - Ph 2 On/Nxt/Chk
_____	23	_____	____	23 - Ph 3 On/Nxt/Chk
_____	24	_____	____	24 - Ph 4 On/Nxt/Chk
	X			25 - Ph 5 On/Nxt/Chk
	X			26 - Ph 6 On/Nxt/Chk
	X			27 - Ph 7 On/Nxt/Chk
	X			28 - Ph 8 On/Nxt/Chk

SIGNAL DRIVER GROUP column is automatic & indicates the assigned Channels in Ring Structure & Overlap database.
CHN column is a list of the available channels 01-24 in numerical order.
HARDWARE OUTPUT PIN column is automatic & indicates the assigned SET entered here.
SET column is for user entry of the hardware outputs to receive a channels outputs.

COORD DATA – MODE

Control		Codes: 0	1	2	3	4	5
Operation ..... :	____	FRE	AUT	MAN	---	---	---
Mode ..... :	____	PRM	YLD	PYL	POM	SOM	FAC
Maximum..... :	____	INH	MX1	MX2	---	---	---
Correction..... :	____	DW	MDW	SWY	SW+	---	---
Offset (?? Of Green) ..... :	____	BEGIN	END OF GREEN				
Force..... :	____	PLAN	CYCLE TIME				
Max Dwell Time..... :	____	Time In Seconds					
Yield Period..... :	____	Time In Seconds					
Manual Pattern (Dial/Split/Offset)	__/__/__						

COORD DATA - TIMING PLANS

Control Timing Plan:	D1/S1	D1/S2	D1/S3	D1/S4	D2/S1	D2/S2	D2/S3	D2/S4
Cycle Length ..... :	____	____	____	____	____	____	____	____
Phase 01 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 02 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 03 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 04 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 05 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 06 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 07 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 08 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 09 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 10 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 11 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 12 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 13 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 14 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 15 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 16 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Offset 1..... :	____	____	____	____	____	____	____	____
Offset 1 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 1 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2..... :	____	____	____	____	____	____	____	____
Offset 2 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 2 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3..... :	____	____	____	____	____	____	____	____
Offset 3 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 3 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____

COORD DATA - TIMING PLANS

Control Timing Plan:	D3/S1	D3/S2	D3/S3	D3/S4	D4/S1	D4/S2	D4/S3	D4/S4
Cycle Length ..... :	____	____	____	____	____	____	____	____
Phase 01 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 02 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 03 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 04 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 05 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 06 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 07 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 08 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 09 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 10 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 11 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 12 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 13 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 14 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 15 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 16 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Offset 1 Time..... :	____	____	____	____	____	____	____	____
Offset 1 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 1 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2..... :	____	____	____	____	____	____	____	____
Offset 2 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 2 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3..... :	____	____	____	____	____	____	____	____
Offset 3 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 3 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____

Codes ..... :

Phase Mode ..... :	0-Actuated	1-Coord Phase	2-Min Rec	3-Max Rec
	4-Ped Rec	5-Max+Ped Recall	6-Phase Omitted	7-Dual Coord Phase
Pattern Mode..... :	00-15 (Unit Data Has Definition)			
Alternate Sequence..... :	0-Normal / 1-Perm / 2-Yield / 3-Perm Yield / 4-Perm Omit / 5-Seq Omit / 6-Full Act			
R# LAG..... :	Time In Seconds Of The Ring Offset To Lcl Cycle 0 When Not Barrier Locked To Ring 1			

TIME BASE DATA – MISCELLANEOUS

DST: BEGIN: MONTH _02_ WEEK _03_
DST: END: MONTH _11_ WEEK _01_

DST: Daylight Savings Time
Month = 01 to 12 (Begin < End)
Week = 1 to 5 (5 = Last Week)

COORD CYCLE ZERO ___ : ___

CYCLE ZERO: Time (HH:MM) Sets Reference For Coord Sync
00:00 = Event Time / Other = That HH:MM

EQUATED DAY: (DEFINED DAY = DAY)

____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____

DAY EQUATES: Care Must Be Used To Insure Days Are Not Equated To Undefined Days Or Days That Are Equated To Other Days. Result Will Be A Day Without Events To Run.

TIME BASE DATA - TRAFFIC EVENTS

DAY	TIME		TRAFFIC EVENT FUNCTIONS																
PDAY	HH : MM	PATTERN	P	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
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___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

REFERENCE DATA:
PDAY - 01-99 Program Day
HH:MM - 24 Hour Clock
PATTERN: (D / S / O)
Flash - 5 / 5 / 0
Free - 0 / 0 / 4
MAX 2 & OMITS: Call Free, Set Pattern To 0 / 0 / 0

TIME BASE DATA - AUXILIARY EVENTS

DAY PDAY	TIME HH : MM	AUXILIARY EVENT FUNCTIONS A: 1 2 3	D: 1 2 3	DIM	S. 1 2 3 4 5 6 7 8
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___

REFERENCE DATA:
- PDAY - 01-99 Program Day
- HH:MM - 24 Hour Clock
- A.123 - Auxiliary Output
- D.123 - Detector
- 1 - Det Diag Vaule
- 2 - Enables Report
- 3 - Rep Multiplier
- DIM - Dimming Enable
- S.1>8 - Special Function Output
- ALL - 0-OFF / 1-ON

TIME BASE DATA - TIME OF YEAR EVENTS

DATE MM / DD / YY	SPECIAL DAY	SPECIAL WEEK	DATE MM / DD / YY	SPECIAL DAY	SPECIAL WEEK
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___

Reference Data:
- Special Day - Any Program Day 00-99
- Special Week -
  - Week 0 = Program Day 01-07
  - Week 1 = Program Day 11-17
  - Week 2 = Program Day 21-27
  - | | |
  - Week 9 = Program Day 91-97

TIME BASE DATA - DIMMING

DIM OUTPUTS Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Channel Red ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Channel Yellow ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Channel Green..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Dim Alternate ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

CODES: 0-NO DIMMING / 1-DIMMING

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 01 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 01 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 01 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 PED RECALL..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED RECALL..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 03 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 01 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

TIME BASE DATA - SPECIAL FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8
Special Function 1..... :	___	___	___	___	___	___	___	___
Special Function 2..... :	___	___	___	___	___	___	___	___
Special Function 3..... :	___	___	___	___	___	___	___	___
Special Function 4..... :	___	___	___	___	___	___	___	___
Special Function 5..... :	___	___	___	___	___	___	___	___
Special Function 6..... :	___	___	___	___	___	___	___	___
Special Function 7..... :	___	___	___	___	___	___	___	___
Special Function 8..... :	___	___	___	___	___	___	___	___
PAS3+MAX3=VEH 33-48 TIME:	___	___	___	___	___	___	___	___
PAS4+MAX4=VEH 49-64 TIME:	___	___	___	___	___	___	___	___
PAS5+MAX5=SPC+PED TIME:	___	___	___	___	___	___	___	___
DYNA MAX3=VEH 33-48 TIME:	___	___	___	___	___	___	___	___
DYNA MAX4=VEH 49-64 TIME:	___	___	___	___	___	___	___	___
DYNA MAX5=SPC+PED TIME:	___	___	___	___	___	___	___	___
DISABLE PROT/PERM OMITS:	___	___	___	___	___	___	___	___
PHASE 2 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
PHASE 4 SIGN CONTROL..... :	___	___	___	___	___	___	___	___

CODES:
0-OFF
1-ON

TIME BASE DATA - SPECIAL FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8
PHASE 6 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
PHASE 8 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
TX DIAMOND - 4 PHASE ..... :	___	___	___	___	___	___	___	___
TX DIAMOND - 3 PHASE ..... :	___	___	___	___	___	___	___	___
TX DIAMOND -SEPARATE .... :	___	___	___	___	___	___	___	___
QUE1/LVL1 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE1/LVL2 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE2/LVL1 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE2/LVL2 CONTROLS ..... :	___	___	___	___	___	___	___	___
AS8-15=OLI-P FL G PHS ..... :	___	___	___	___	___	___	___	___
AS8-15=OLI-P FL R PHS..... :	___	___	___	___	___	___	___	___
	___	___	___	___	___	___	___	___

CODES:

PREEMPTION DATA – MISCELLANEOUS

Ring:	1	2	3	4	
Minimum Green / Walk Time	__10	__10	__10	__10	Time In Seconds

PRIORITIES

Preemption > Automatic Flash :	___1
Preempt 1 > Preempt 2 ..... :	___1
Preempt 2 > Preempt 3 ..... :	___1
Preempt 3 > Preempt 4 ..... :	___1
Preempt 4 > Preempt 5 ..... :	___1
Preempt 5 > Preempt 6 ..... :	___1

PRIORITY: 0-NO (Equal Priority)
1-1st Has Priority
When A Function Has Priority Over Another, The Function Of Lower Priority Will Terminate And The Higher Priority Will Assume Control.

PREEMPT DATA - PREEMPT 1

CONTROL			INTERVAL TIMES		
Non-Lock.....:	_1_	0-NO / 1-YES	Selective Ped Clear .... :	___	0-999 Seconds
			Selective Yel Chg ..... :	__	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	__	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	__10	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	___0	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	__40	0-99.9 Seconds
			Return Red Clear..... :	__20	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	1	___	1	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 1 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 1 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 2

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	__1	0-NO / 1-YES	Selective Ped Clear .... :	___	0-999 Seconds
			Selective Yel Chg..... :	__	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	__	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	__10	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	___0	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	__40	0-99.9 Seconds
			Return Red Clear ..... :	__20	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	1	___	1	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 2 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	_1_	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 2 - LOW PRIORITY ROUTINE

Non-Lock ..... :	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip ..... :	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The
Delay ..... :	____	0-999 Seconds	Dwell Phases
Extend ..... :	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration..... :	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell..... :	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call ..... :	____	0-999 Seconds	
Lock Out..... :	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 3

CONTROL			INTERVAL TIMES		
Non-Lock.....:	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg ..... :	____	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 3 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 3 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 4

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg..... :	____	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear ..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 4 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 4 - LOW PRIORITY ROUTINE

Non-Lock..... :	____	0-NO / 1-YES
Skip ..... :	____	0-NO / 1-YES
Delay ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds
Duration..... :	____	0-999 Seconds
Dwell..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds

- When No Dwell Phases Are Set, This Routine Is Disabled.
- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
- Set Max Call = 0 To Disable
- Lock Out Duration Will Be Dependent On Calls If = 0
- Calls (Yes) Will Place A Ped Call On Exit From Routine

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 5

CONTROL			INTERVAL TIMES		
Non-Lock.....:	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg ..... :	____	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 5 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 5 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 6

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg..... :	____	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear ..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 6 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 6 - LOW PRIORITY ROUTINE

Non-Lock..... :	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip ..... :	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The
Delay ..... :	____	0-999 Seconds	Dwell Phases
Extend ..... :	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration..... :	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell..... :	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call ..... :	____	0-999 Seconds	
Lock Out..... :	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

SYSTEM DATA - GENERAL

Local Address ..... : _____ Three Digits (000 - 032)
Revert To Backup ..... : _____ Time In Minutes (000- 255)

1) An Address Other Than “000” Transfers Local “D” Connector I/O To It’s System Definition
2) On Loss Of Communications, The Local Will Revert To It’s Time Base Events After The Revert To Backup Time

SYSTEM DATA - SYSTEM DETECTORS

ASSIGN System Detector	1	2	3	4	5	6	7	8
Assigned Detector..... :	____	____	____	____	____	____	____	____

To Assign : VEH 01-64 Enter 01-64 / SPC 01-08 Enter 65-72 / PED 01-08 Enter 73-80

V+O System Detector	1	2	3	4	5	6	7	8
VPHR X 100..... :	____	____	____	____	____	____	____	____
AVGT (Minutes) ..... :	____	____	____	____	____	____	____	____
CTFC / 10..... :	____	____	____	____	____	____	____	____
MVOL..... :	____	____	____	____	____	____	____	____

V+O PARAMETERS:
VPHR - Lane Capacity
AVGT - Averaging Time
CTFC - Correct Factor
MVOL - Min Vol b4 Occ Add

Report Interval..... : ____ Time In Minutes (00- 99) / Time Base Aux D2 Starts A Report

SYSTEM DATA - QUEUE ROUTINES

QUEUE 1

ASSIGN Detector:	1	2	3	4
System Detector..... :	___	___	___	___
WTFC Factor..... :	___	___	___	___
Input Select ..... :	___			
Failed Level..... :	___			

SELECT Level:	A	B
Enter (UP) ..... :	____	____
Leave (DN)..... :	____	____
PATTERN	D / S / O	D / S / O
Called ..... :	_ / _ / _	_ / _ / _

QUEUE 2

ASSIGN Detector:	1	2	3	4	
System Detector..... :	___	___	___	___	Det # 1 To 8
WTFC Factor..... :	___	___	___	___	Factor 1 To 100
Input Select ..... :	___				0-AVG / 1-HIGH
Failed Level ..... :	___				# To Fail Channel

SELECT Level:	A	B
Enter (UP)..... :	____	____
Leave (DN) ..... :	____	____
PATTERN	D / S / O	D / S / O
Pattern Called..... :	_ / _ / _	_ / _ / _

Queue Pattern or Partial Pattern Selection Is Made When The V+O Of Assigned System Detectors Exceeds The Level To Enter.

SYSTEM DATA - VEH DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - PED DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - SPC DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - SPEED

Measurement .....: ____ 0-Miles Per Hour / 1-Kilometers Per Hour

SPEED TRAP 1 Detector:	1	2
Assigned Detector.....:	____	____
Distance.....:	____	____

SPEED TRAP 2 Detector:	1	2
Assigned Detector..... :	____	____
Distance ..... :	____	____

1) Each Speed Trap Needs Two Detectors Assigned, Any Vehicle, Special, or Pedestrian Detector May Be Assigned.
To Assign : VEH 01-64 Enter 01-64 / SPC 01-08 Enter 65-72 / PED 01-08 Enter 73-80
2) The Distance Between Det 1 and Det 2 May Be Either 11 Feet or 22 Feet. Enter '1' For 11 Ft or '2' for 22 Ft.

RANGES / PATTERN

PATTERN		OFFSET 1		OFFSET 2		OFFSET 3	
Dial	Split	Low	High	Low	High	Low	High
1	1	____	____	____	____	____	____
1	2	____	____	____	____	____	____
1	3	____	____	____	____	____	____
1	4	____	____	____	____	____	____
2	1	____	____	____	____	____	____
2	2	____	____	____	____	____	____
2	3	____	____	____	____	____	____
2	4	____	____	____	____	____	____
3	1	____	____	____	____	____	____
3	2	____	____	____	____	____	____
3	3	____	____	____	____	____	____
3	4	____	____	____	____	____	____
4	1	____	____	____	____	____	____
4	2	____	____	____	____	____	____
4	3	____	____	____	____	____	____
4	4	____	____	____	____	____	____

RANGES:
Enter The Low & High Speed In MPH or KPH For Each Pattern To Enable A Report Of % Lower, Within, & Above It

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

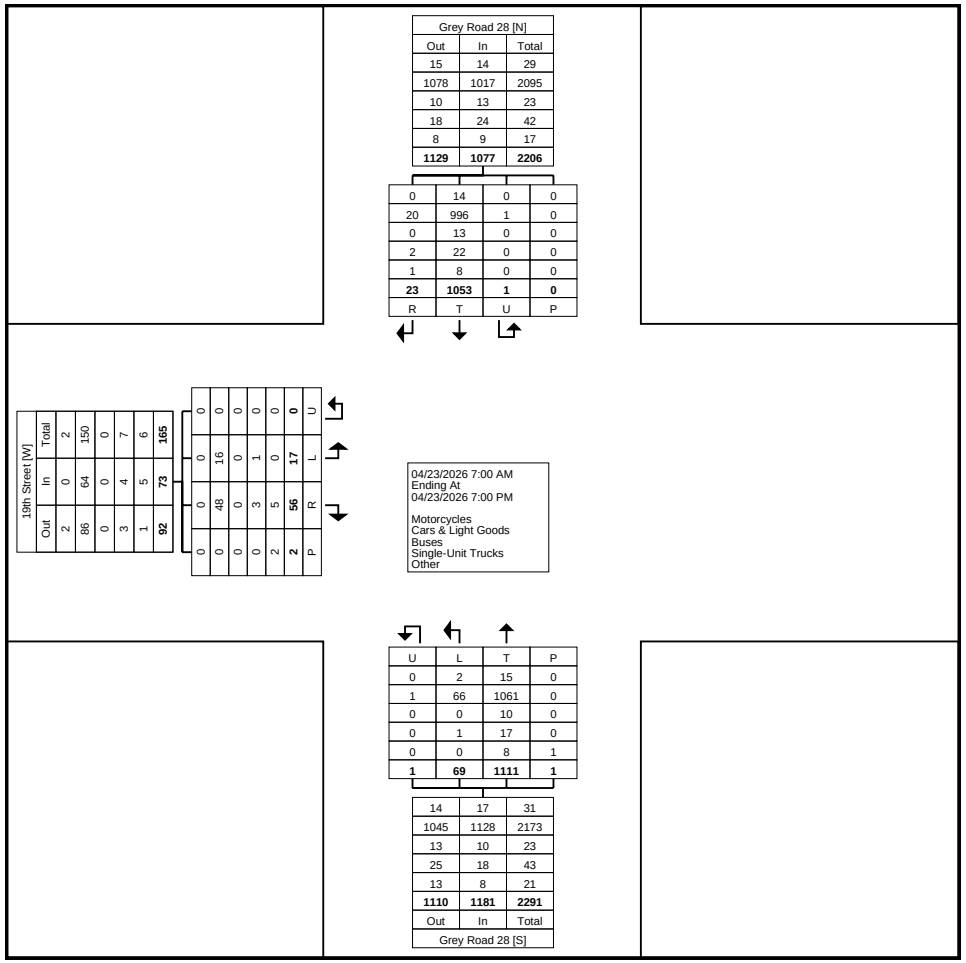
Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	1	1	15	0	0	16	14	3	0	0	17	34
7:15 AM	2	2	0	0	4	2	18	1	0	21	22	0	0	0	22	47
7:30 AM	0	0	0	0	0	1	17	0	0	18	30	0	0	0	30	48
7:45 AM	1	2	0	0	3	1	18	0	0	19	36	0	0	0	36	58
Hourly Total	3	5	0	0	8	5	68	1	0	74	102	3	0	0	105	187
8:00 AM	0	4	0	0	4	1	14	0	0	15	29	1	0	0	30	49
8:15 AM	1	1	0	0	2	4	32	0	0	36	49	0	0	0	49	87
8:30 AM	0	2	0	0	2	1	25	0	0	26	39	1	0	0	40	68
8:45 AM	0	2	0	0	2	2	23	0	0	25	32	0	0	0	32	59
Hourly Total	1	9	0	0	10	8	94	0	0	102	149	2	0	0	151	263
9:00 AM	1	1	0	0	2	1	30	0	0	31	35	0	0	0	35	68
9:15 AM	0	0	0	0	0	1	32	0	0	33	25	0	0	0	25	58
9:30 AM	0	2	0	0	2	0	33	0	0	33	33	0	0	0	33	68
9:45 AM	1	5	0	0	6	1	39	0	0	40	46	0	0	0	46	92
Hourly Total	2	8	0	0	10	3	134	0	0	137	139	0	0	0	139	286
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	0	0	0	3	30	0	0	33	31	1	0	0	32	65
11:45 AM	1	1	0	0	2	1	46	0	0	47	31	1	0	0	32	81
Hourly Total	1	1	0	0	2	4	76	0	0	80	62	2	0	0	64	146
12:00 PM	0	0	0	0	0	4	30	0	0	34	38	0	0	0	38	72
12:15 PM	1	1	0	0	2	3	48	0	0	51	32	0	0	0	32	85
12:30 PM	1	1	0	0	2	6	38	0	0	44	28	0	0	0	28	74
12:45 PM	1	0	0	0	1	5	39	0	0	44	41	2	0	0	43	88
Hourly Total	3	2	0	0	5	18	155	0	0	173	139	2	0	0	141	319
1:00 PM	0	2	0	0	2	1	58	0	0	59	27	2	0	0	29	90
1:15 PM	1	3	0	0	4	2	47	0	0	49	34	1	0	0	35	88
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	5	0	0	6	3	105	0	0	108	61	3	0	0	64	178
4:00 PM	0	2	0	0	2	4	42	0	0	46	43	1	0	0	44	92
4:15 PM	0	1	0	0	1	3	49	0	0	52	33	1	0	0	34	87
4:30 PM	1	3	0	0	4	0	35	0	0	35	38	0	0	0	38	77
4:45 PM	1	7	0	0	8	6	40	0	1	46	38	2	0	0	40	94
Hourly Total	2	13	0	0	15	13	166	0	1	179	152	4	0	0	156	350
5:00 PM	1	4	0	1	5	4	49	0	0	53	51	2	0	0	53	111
5:15 PM	0	2	0	0	2	6	53	0	0	59	41	0	0	0	41	102
5:30 PM	0	2	0	0	2	2	58	0	0	60	32	1	0	0	33	95

5:45 PM	0	2	0	0	2	3	36	0	0	39	35	1	0	0	36	77
Hourly Total	1	10	0	1	11	15	196	0	0	211	159	4	0	0	163	385
6:00 PM	1	1	0	1	2	0	41	0	0	41	30	1	0	0	31	74
6:15 PM	1	1	0	0	2	0	25	0	0	25	21	2	1	0	24	51
6:30 PM	1	1	0	0	2	0	25	0	0	25	17	0	0	0	17	44
6:45 PM	0	0	0	0	0	0	26	0	0	26	22	0	0	0	22	48
Hourly Total	3	3	0	1	6	0	117	0	0	117	90	3	1	0	94	217
Grand Total	17	56	0	2	73	69	1111	1	1	1181	1053	23	1	0	1077	2331
Approach %	23.3	76.7	0.0	-	-	5.8	94.1	0.1	-	-	97.8	2.1	0.1	-	-	-
Total %	0.7	2.4	0.0	-	3.1	3.0	47.7	0.0	-	50.7	45.2	1.0	0.0	-	46.2	-
Motorcycles	0	0	0	-	0	2	15	0	-	17	14	0	0	-	14	31
% Motorcycles	0.0	0.0	-	-	0.0	2.9	1.4	0.0	-	1.4	1.3	0.0	0.0	-	1.3	1.3
Cars & Light Goods	16	48	0	-	64	66	1061	1	-	1128	996	20	1	-	1017	2209
% Cars & Light Goods	94.1	85.7	-	-	87.7	95.7	95.5	100.0	-	95.5	94.6	87.0	100.0	-	94.4	94.8
Buses	0	0	0	-	0	0	10	0	-	10	13	0	0	-	13	23
% Buses	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	0.8	1.2	0.0	0.0	-	1.2	1.0
Single-Unit Trucks	1	3	0	-	4	1	17	0	-	18	22	2	0	-	24	46
% Single-Unit Trucks	5.9	5.4	-	-	5.5	1.4	1.5	0.0	-	1.5	2.1	8.7	0.0	-	2.2	2.0
Articulated Trucks	0	0	0	-	0	0	8	0	-	8	8	0	0	-	8	16
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	0.7	0.8	0.0	0.0	-	0.7	0.7
Bicycles on Road	0	5	0	-	5	0	0	0	-	0	0	1	0	-	1	6
% Bicycles on Road	0.0	8.9	-	-	6.8	0.0	0.0	0.0	-	0.0	0.0	4.3	0.0	-	0.1	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	0.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

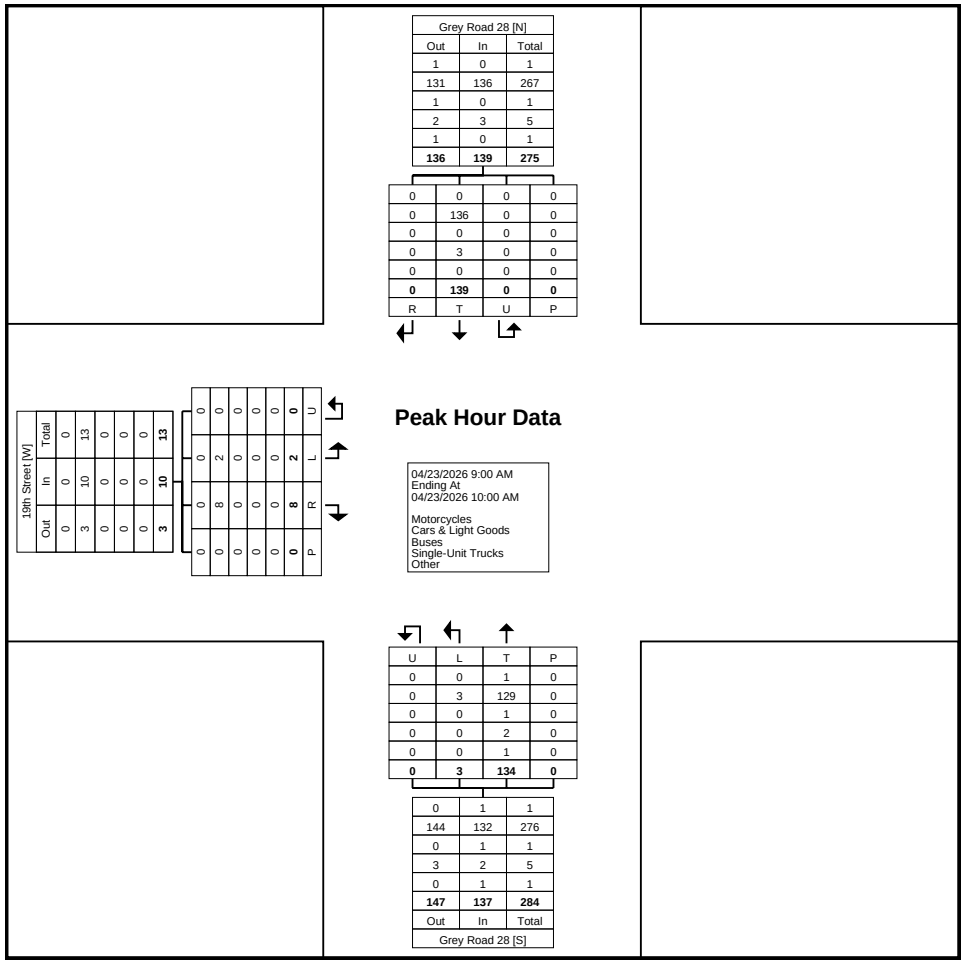
Turning Movement Peak Hour Data (9:00 AM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	1	1	0	0	2	1	30	0	0	31	35	0	0	0	35	68
9:15 AM	0	0	0	0	0	1	32	0	0	33	25	0	0	0	25	58
9:30 AM	0	2	0	0	2	0	33	0	0	33	33	0	0	0	33	68
9:45 AM	1	5	0	0	6	1	39	0	0	40	46	0	0	0	46	92
Total	2	8	0	0	10	3	134	0	0	137	139	0	0	0	139	286
Approach %	20.0	80.0	0.0	-	-	2.2	97.8	0.0	-	-	100.0	0.0	0.0	-	-	-
Total %	0.7	2.8	0.0	-	3.5	1.0	46.9	0.0	-	47.9	48.6	0.0	0.0	-	48.6	-
PHF	0.500	0.400	0.000	-	0.417	0.750	0.859	0.000	-	0.856	0.755	0.000	0.000	-	0.755	0.777
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Cars & Light Goods	2	8	0	-	10	3	129	0	-	132	136	0	0	-	136	278
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	96.3	-	-	96.4	97.8	-	-	-	97.8	97.2
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	3	0	0	-	3	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	1.5	-	-	1.5	2.2	-	-	-	2.2	1.7
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	-	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

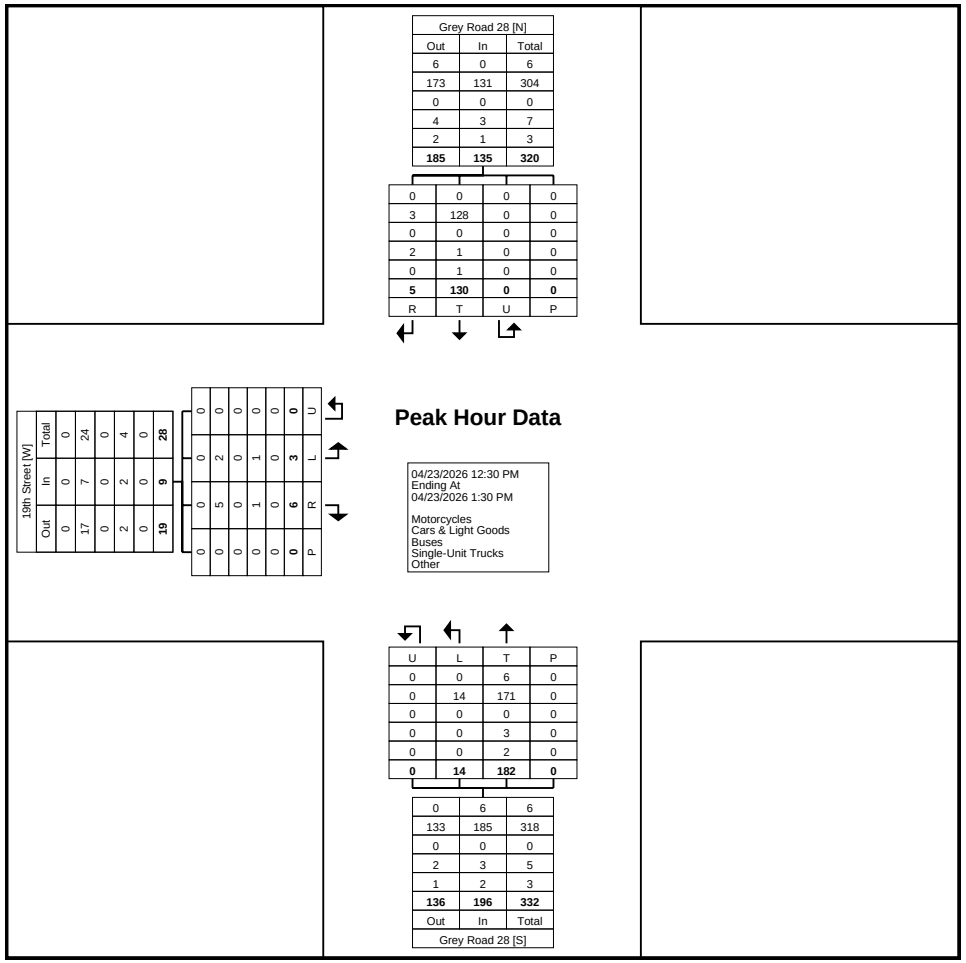
Turning Movement Peak Hour Data (12:30 PM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	1	1	0	0	2	6	38	0	0	44	28	0	0	0	28	74
12:45 PM	1	0	0	0	1	5	39	0	0	44	41	2	0	0	43	88
1:00 PM	0	2	0	0	2	1	58	0	0	59	27	2	0	0	29	90
1:15 PM	1	3	0	0	4	2	47	0	0	49	34	1	0	0	35	88
Total	3	6	0	0	9	14	182	0	0	196	130	5	0	0	135	340
Approach %	33.3	66.7	0.0	-	-	7.1	92.9	0.0	-	-	96.3	3.7	0.0	-	-	-
Total %	0.9	1.8	0.0	-	2.6	4.1	53.5	0.0	-	57.6	38.2	1.5	0.0	-	39.7	-
PHF	0.750	0.500	0.000	-	0.563	0.583	0.784	0.000	-	0.831	0.793	0.625	0.000	-	0.785	0.944
Motorcycles	0	0	0	-	0	0	6	0	-	6	0	0	0	-	0	6
% Motorcycles	0.0	0.0	-	-	0.0	0.0	3.3	-	-	3.1	0.0	0.0	-	-	0.0	1.8
Cars & Light Goods	2	5	0	-	7	14	171	0	-	185	128	3	0	-	131	323
% Cars & Light Goods	66.7	83.3	-	-	77.8	100.0	94.0	-	-	94.4	98.5	60.0	-	-	97.0	95.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	1	0	-	2	0	3	0	-	3	1	2	0	-	3	8
% Single-Unit Trucks	33.3	16.7	-	-	22.2	0.0	1.6	-	-	1.5	0.8	40.0	-	-	2.2	2.4
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	1	0	0	-	1	3
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	1.1	-	-	1.0	0.8	0.0	-	-	0.7	0.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (12:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026

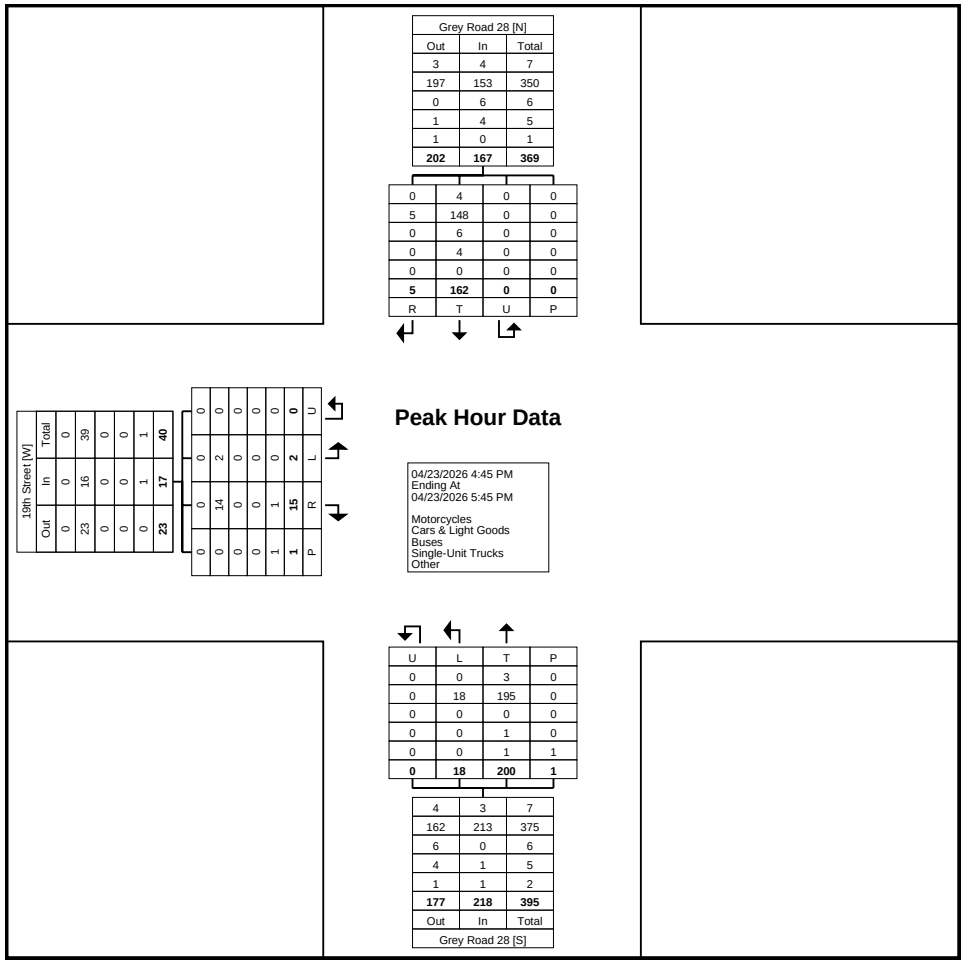
Turning Movement Peak Hour Data (4:45 PM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	1	7	0	0	8	6	40	0	1	46	38	2	0	0	40	94
5:00 PM	1	4	0	1	5	4	49	0	0	53	51	2	0	0	53	111
5:15 PM	0	2	0	0	2	6	53	0	0	59	41	0	0	0	41	102
5:30 PM	0	2	0	0	2	2	58	0	0	60	32	1	0	0	33	95
Total	2	15	0	1	17	18	200	0	1	218	162	5	0	0	167	402
Approach %	11.8	88.2	0.0	-	-	8.3	91.7	0.0	-	-	97.0	3.0	0.0	-	-	-
Total %	0.5	3.7	0.0	-	4.2	4.5	49.8	0.0	-	54.2	40.3	1.2	0.0	-	41.5	-
PHF	0.500	0.536	0.000	-	0.531	0.750	0.862	0.000	-	0.908	0.794	0.625	0.000	-	0.788	0.905
Motorcycles	0	0	0	-	0	0	3	0	-	3	4	0	0	-	4	7
% Motorcycles	0.0	0.0	-	-	0.0	0.0	1.5	-	-	1.4	2.5	0.0	-	-	2.4	1.7
Cars & Light Goods	2	14	0	-	16	18	195	0	-	213	148	5	0	-	153	382
% Cars & Light Goods	100.0	93.3	-	-	94.1	100.0	97.5	-	-	97.7	91.4	100.0	-	-	91.6	95.0
Buses	0	0	0	-	0	0	0	0	-	0	6	0	0	-	6	6
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	3.7	0.0	-	-	3.6	1.5
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	4	0	0	-	4	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.5	2.5	0.0	-	-	2.4	1.2
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.5	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	6.7	-	-	5.9	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	0.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

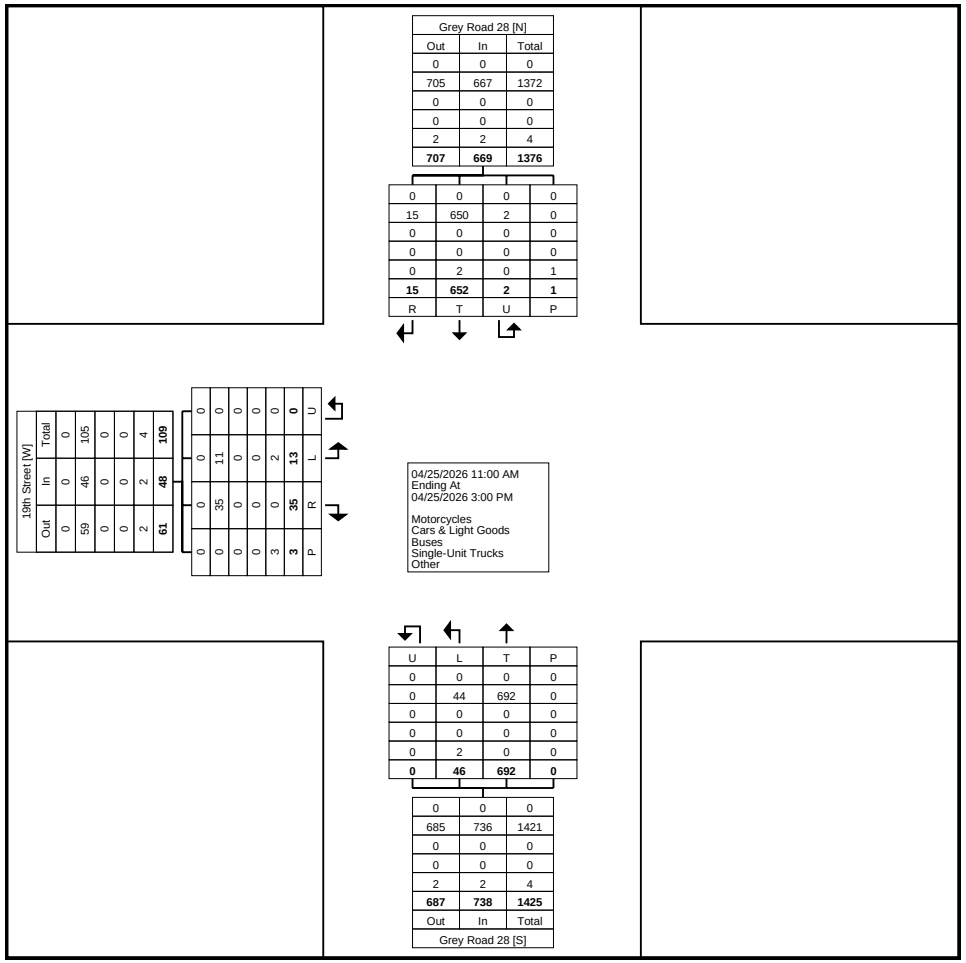
Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	0	1	0	0	1	1	39	0	0	40	38	0	0	0	38	79
11:15 AM	1	2	0	0	3	6	39	0	0	45	37	1	0	0	38	86
11:30 AM	1	1	0	0	2	1	54	0	0	55	43	1	2	0	46	103
11:45 AM	2	3	0	3	5	7	47	0	0	54	41	2	0	0	43	102
Hourly Total	4	7	0	3	11	15	179	0	0	194	159	4	2	0	165	370
12:00 PM	3	4	0	0	7	0	36	0	0	36	48	0	0	0	48	91
12:15 PM	1	4	0	0	5	4	43	0	0	47	37	3	0	0	40	92
12:30 PM	1	3	0	0	4	7	39	0	0	46	50	1	0	0	51	101
12:45 PM	0	2	0	0	2	2	35	0	0	37	40	0	0	0	40	79
Hourly Total	5	13	0	0	18	13	153	0	0	166	175	4	0	0	179	363
1:00 PM	0	3	0	0	3	2	46	0	0	48	42	0	0	0	42	93
1:15 PM	2	3	0	0	5	6	42	0	0	48	34	0	0	0	34	87
1:30 PM	1	3	0	0	4	3	48	0	0	51	44	1	0	0	45	100
1:45 PM	0	0	0	0	0	1	51	0	0	52	38	0	0	0	38	90
Hourly Total	3	9	0	0	12	12	187	0	0	199	158	1	0	0	159	370
2:00 PM	1	4	0	0	5	1	47	0	0	48	32	4	0	0	36	89
2:15 PM	0	1	0	0	1	2	36	0	0	38	44	0	0	1	44	83
2:30 PM	0	1	0	0	1	2	45	0	0	47	46	0	0	0	46	94
2:45 PM	0	0	0	0	0	1	45	0	0	46	38	2	0	0	40	86
Hourly Total	1	6	0	0	7	6	173	0	0	179	160	6	0	1	166	352
Grand Total	13	35	0	3	48	46	692	0	0	738	652	15	2	1	669	1455
Approach %	27.1	72.9	0.0	-	-	6.2	93.8	0.0	-	-	97.5	2.2	0.3	-	-	-
Total %	0.9	2.4	0.0	-	3.3	3.2	47.6	0.0	-	50.7	44.8	1.0	0.1	-	46.0	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	11	35	0	-	46	44	692	0	-	736	650	15	2	-	667	1449
% Cars & Light Goods	84.6	100.0	-	-	95.8	95.7	100.0	-	-	99.7	99.7	100.0	100.0	-	99.7	99.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	0.3	0.1
Bicycles on Road	2	0	0	-	2	2	0	0	-	2	0	0	0	-	0	4
% Bicycles on Road	15.4	0.0	-	-	4.2	4.3	0.0	-	-	0.3	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026
Page No: 3



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

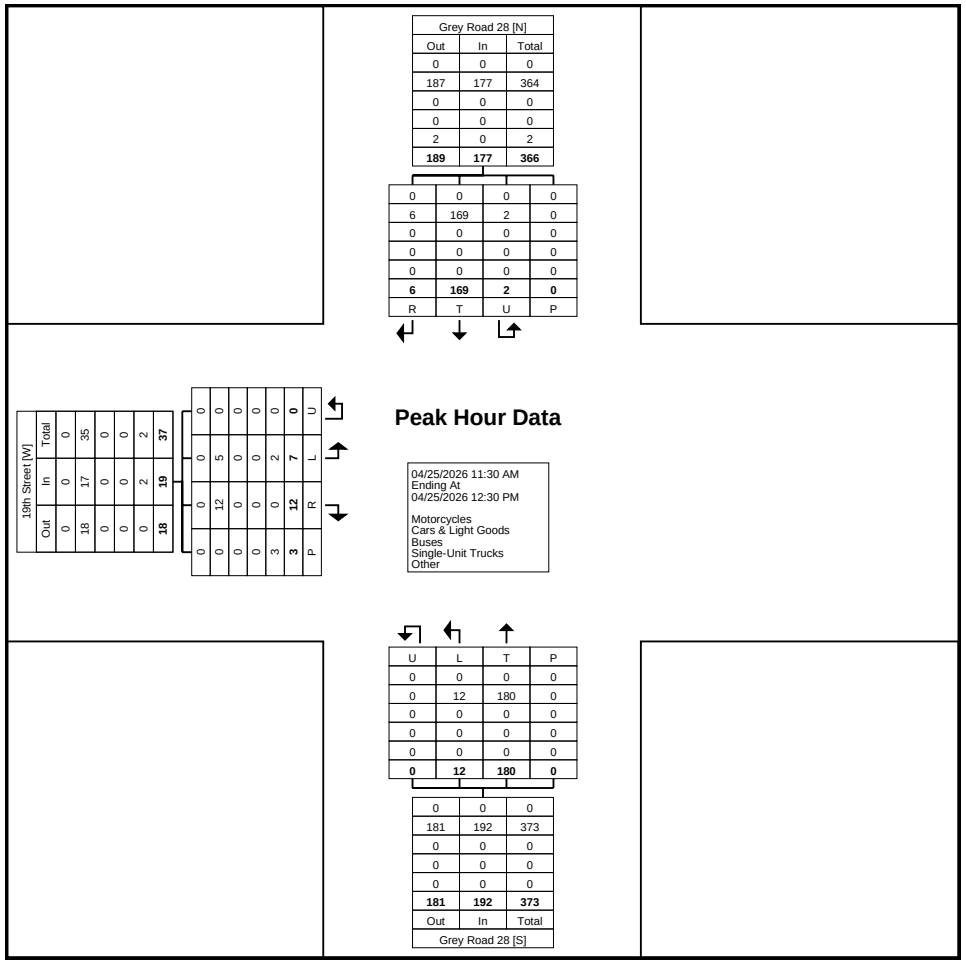
Turning Movement Peak Hour Data (11:30 AM)

Start Time	19th Street Eastbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:30 AM	1	1	0	0	2	1	54	0	0	55	43	1	2	0	46	103
11:45 AM	2	3	0	3	5	7	47	0	0	54	41	2	0	0	43	102
12:00 PM	3	4	0	0	7	0	36	0	0	36	48	0	0	0	48	91
12:15 PM	1	4	0	0	5	4	43	0	0	47	37	3	0	0	40	92
Total	7	12	0	3	19	12	180	0	0	192	169	6	2	0	177	388
Approach %	36.8	63.2	0.0	-	-	6.3	93.8	0.0	-	-	95.5	3.4	1.1	-	-	-
Total %	1.8	3.1	0.0	-	4.9	3.1	46.4	0.0	-	49.5	43.6	1.5	0.5	-	45.6	-
PHF	0.583	0.750	0.000	-	0.679	0.429	0.833	0.000	-	0.873	0.880	0.500	0.250	-	0.922	0.942
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	5	12	0	-	17	12	180	0	-	192	169	6	2	-	177	386
% Cars & Light Goods	71.4	100.0	-	-	89.5	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	99.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	2	0	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	28.6	0.0	-	-	10.5	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 19th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

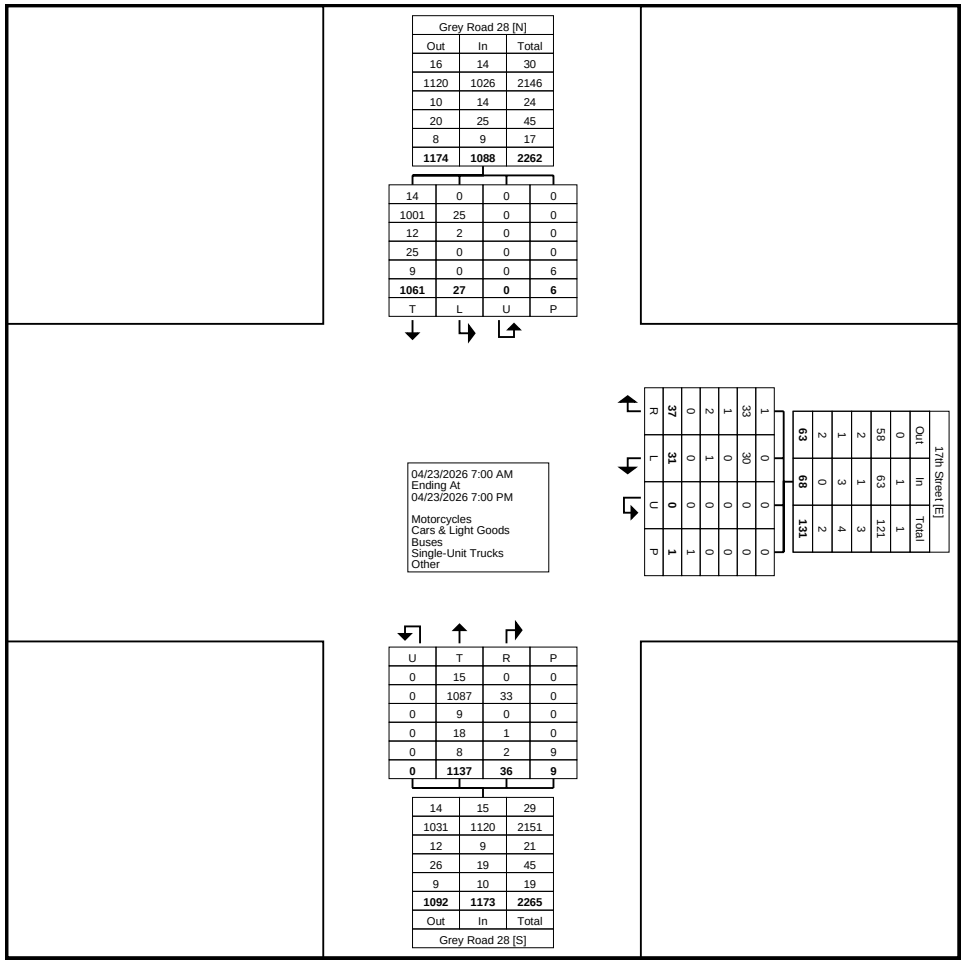
Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	1	0	0	2	15	1	0	1	16	0	15	0	0	15	33
7:15 AM	0	1	0	0	1	20	1	0	0	21	1	23	0	0	24	46
7:30 AM	0	2	0	0	2	15	1	0	0	16	0	30	0	0	30	48
7:45 AM	1	1	0	0	2	18	1	0	0	19	2	35	0	0	37	58
Hourly Total	2	5	0	0	7	68	4	0	1	72	3	103	0	0	106	185
8:00 AM	0	1	0	0	1	14	0	0	0	14	0	31	0	1	31	46
8:15 AM	2	1	0	1	3	35	2	0	1	37	2	46	0	0	48	88
8:30 AM	3	0	0	0	3	26	0	0	0	26	0	41	0	0	41	70
8:45 AM	2	0	0	0	2	25	1	0	0	26	0	36	0	1	36	64
Hourly Total	7	2	0	1	9	100	3	0	1	103	2	154	0	2	156	268
9:00 AM	0	0	0	0	0	29	0	0	0	29	0	34	0	0	34	63
9:15 AM	0	1	0	0	1	30	1	0	0	31	0	26	0	0	26	58
9:30 AM	1	3	0	0	4	30	1	0	2	31	1	32	0	0	33	68
9:45 AM	1	1	0	0	2	38	1	0	0	39	1	43	0	0	44	85
Hourly Total	2	5	0	0	7	127	3	0	2	130	2	135	0	0	137	274
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	1	0	0	0	1	32	0	0	0	32	1	30	0	0	31	64
11:45 AM	4	1	0	0	5	46	1	0	0	47	0	32	0	0	32	84
Hourly Total	5	1	0	0	6	78	1	0	0	79	1	62	0	0	63	148
12:00 PM	1	2	0	0	3	34	2	0	0	36	1	37	0	0	38	77
12:15 PM	0	1	0	0	1	46	1	0	2	47	1	32	0	0	33	81
12:30 PM	1	3	0	0	4	41	2	0	0	43	0	29	0	0	29	76
12:45 PM	0	3	0	0	3	41	1	0	0	42	0	38	0	0	38	83
Hourly Total	2	9	0	0	11	162	6	0	2	168	2	136	0	0	138	317
1:00 PM	2	0	0	0	2	59	0	0	0	59	3	25	0	0	28	89
1:15 PM	3	3	0	0	6	47	4	0	0	51	0	36	0	1	36	93
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	5	3	0	0	8	106	4	0	0	110	3	61	0	1	64	182
4:00 PM	1	1	0	0	2	46	1	0	0	47	3	40	0	0	43	92
4:15 PM	2	1	0	0	3	52	2	0	0	54	0	34	0	0	34	91
4:30 PM	2	0	0	0	2	37	0	0	0	37	3	40	0	1	43	82
4:45 PM	1	2	0	0	3	44	3	0	0	47	1	43	0	0	44	94
Hourly Total	6	4	0	0	10	179	6	0	0	185	7	157	0	1	164	359
5:00 PM	0	1	0	0	1	52	0	0	0	52	0	53	0	0	53	106
5:15 PM	1	2	0	0	3	56	0	0	0	56	1	42	0	0	43	102
5:30 PM	0	0	0	0	0	56	1	0	2	57	0	36	0	0	36	93

5:45 PM	0	0	0	0	0	37	3	0	0	40	1	33	0	0	34	74
Hourly Total	1	3	0	0	4	201	4	0	2	205	2	164	0	0	166	375
6:00 PM	1	2	0	0	3	38	2	0	0	40	1	33	0	2	34	77
6:15 PM	0	0	0	0	0	29	2	0	0	31	2	18	0	0	20	51
6:30 PM	0	1	0	0	1	24	0	0	1	24	1	17	0	0	18	43
6:45 PM	0	2	0	0	2	25	1	0	0	26	1	21	0	0	22	50
Hourly Total	1	5	0	0	6	116	5	0	1	121	5	89	0	2	94	221
Grand Total	31	37	0	1	68	1137	36	0	9	1173	27	1061	0	6	1088	2329
Approach %	45.6	54.4	0.0	-	-	96.9	3.1	0.0	-	-	2.5	97.5	0.0	-	-	-
Total %	1.3	1.6	0.0	-	2.9	48.8	1.5	0.0	-	50.4	1.2	45.6	0.0	-	46.7	-
Motorcycles	0	1	0	-	1	15	0	0	-	15	0	14	0	-	14	30
% Motorcycles	0.0	2.7	-	-	1.5	1.3	0.0	-	-	1.3	0.0	1.3	-	-	1.3	1.3
Cars & Light Goods	30	33	0	-	63	1087	33	0	-	1120	25	1001	0	-	1026	2209
% Cars & Light Goods	96.8	89.2	-	-	92.6	95.6	91.7	-	-	95.5	92.6	94.3	-	-	94.3	94.8
Buses	0	1	0	-	1	9	0	0	-	9	2	12	0	-	14	24
% Buses	0.0	2.7	-	-	1.5	0.8	0.0	-	-	0.8	7.4	1.1	-	-	1.3	1.0
Single-Unit Trucks	1	2	0	-	3	18	1	0	-	19	0	25	0	-	25	47
% Single-Unit Trucks	3.2	5.4	-	-	4.4	1.6	2.8	-	-	1.6	0.0	2.4	-	-	2.3	2.0
Articulated Trucks	0	0	0	-	0	8	0	0	-	8	0	9	0	-	9	17
% Articulated Trucks	0.0	0.0	-	-	0.0	0.7	0.0	-	-	0.7	0.0	0.8	-	-	0.8	0.7
Bicycles on Road	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	5.6	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	16.7	-	-
Pedestrians	-	-	-	1	-	-	-	-	9	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	83.3	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

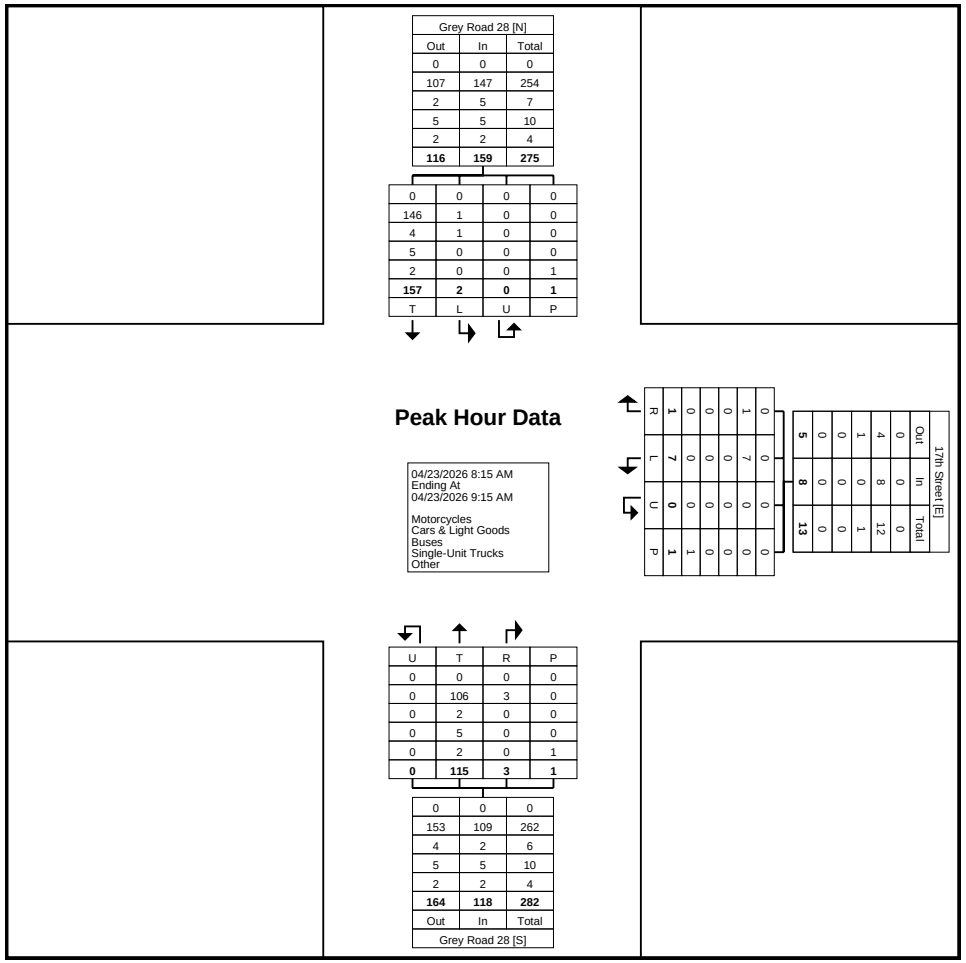
Turning Movement Peak Hour Data (8:15 AM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
8:15 AM	2	1	0	1	3	35	2	0	1	37	2	46	0	0	48	88
8:30 AM	3	0	0	0	3	26	0	0	0	26	0	41	0	0	41	70
8:45 AM	2	0	0	0	2	25	1	0	0	26	0	36	0	1	36	64
9:00 AM	0	0	0	0	0	29	0	0	0	29	0	34	0	0	34	63
Total	7	1	0	1	8	115	3	0	1	118	2	157	0	1	159	285
Approach %	87.5	12.5	0.0	-	-	97.5	2.5	0.0	-	-	1.3	98.7	0.0	-	-	-
Total %	2.5	0.4	0.0	-	2.8	40.4	1.1	0.0	-	41.4	0.7	55.1	0.0	-	55.8	-
PHF	0.583	0.250	0.000	-	0.667	0.821	0.375	0.000	-	0.797	0.250	0.853	0.000	-	0.828	0.810
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	7	1	0	-	8	106	3	0	-	109	1	146	0	-	147	264
% Cars & Light Goods	100.0	100.0	-	-	100.0	92.2	100.0	-	-	92.4	50.0	93.0	-	-	92.5	92.6
Buses	0	0	0	-	0	2	0	0	-	2	1	4	0	-	5	7
% Buses	0.0	0.0	-	-	0.0	1.7	0.0	-	-	1.7	50.0	2.5	-	-	3.1	2.5
Single-Unit Trucks	0	0	0	-	0	5	0	0	-	5	0	5	0	-	5	10
% Single-Unit Trucks	0.0	0.0	-	-	0.0	4.3	0.0	-	-	4.2	0.0	3.2	-	-	3.1	3.5
Articulated Trucks	0	0	0	-	0	2	0	0	-	2	0	2	0	-	2	4
% Articulated Trucks	0.0	0.0	-	-	0.0	1.7	0.0	-	-	1.7	0.0	1.3	-	-	1.3	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 5



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

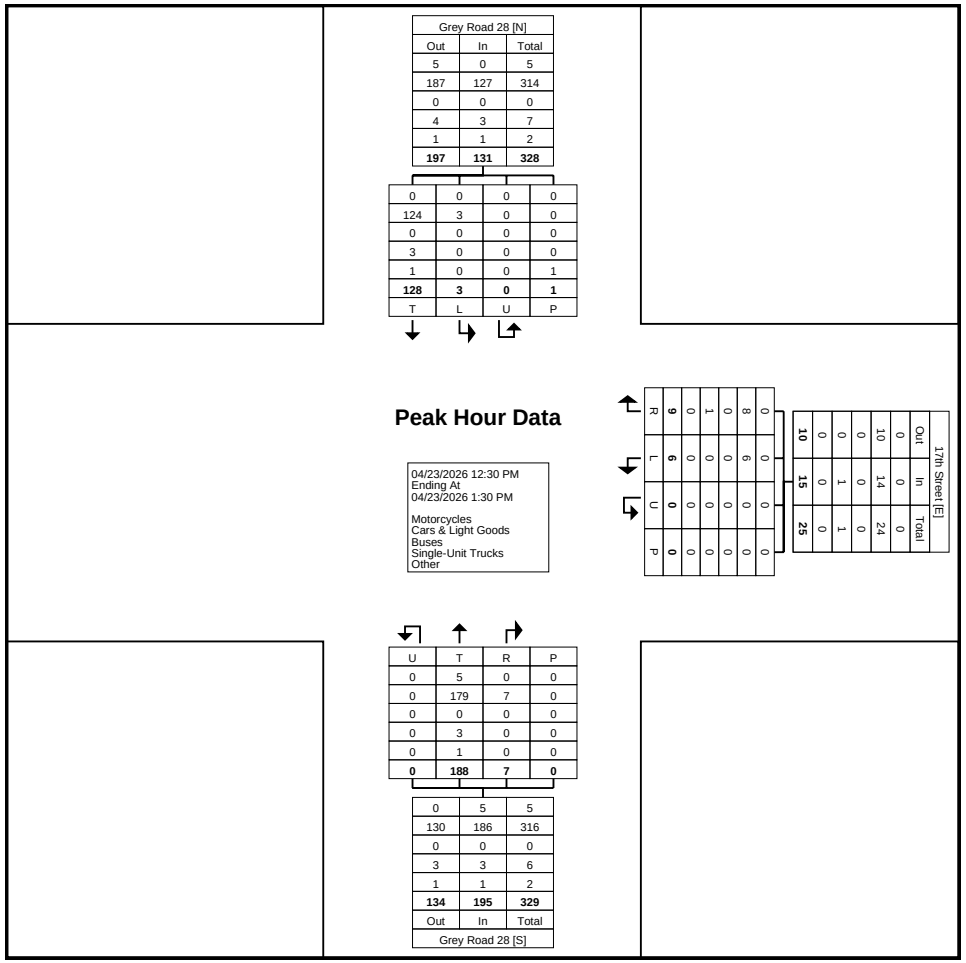
Turning Movement Peak Hour Data (12:30 PM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
12:30 PM	1	3	0	0	4	41	2	0	0	43	0	29	0	0	29	76
12:45 PM	0	3	0	0	3	41	1	0	0	42	0	38	0	0	38	83
1:00 PM	2	0	0	0	2	59	0	0	0	59	3	25	0	0	28	89
1:15 PM	3	3	0	0	6	47	4	0	0	51	0	36	0	1	36	93
Total	6	9	0	0	15	188	7	0	0	195	3	128	0	1	131	341
Approach %	40.0	60.0	0.0	-	-	96.4	3.6	0.0	-	-	2.3	97.7	0.0	-	-	-
Total %	1.8	2.6	0.0	-	4.4	55.1	2.1	0.0	-	57.2	0.9	37.5	0.0	-	38.4	-
PHF	0.500	0.750	0.000	-	0.625	0.797	0.438	0.000	-	0.826	0.250	0.842	0.000	-	0.862	0.917
Motorcycles	0	0	0	-	0	5	0	0	-	5	0	0	0	-	0	5
% Motorcycles	0.0	0.0	-	-	0.0	2.7	0.0	-	-	2.6	0.0	0.0	-	-	0.0	1.5
Cars & Light Goods	6	8	0	-	14	179	7	0	-	186	3	124	0	-	127	327
% Cars & Light Goods	100.0	88.9	-	-	93.3	95.2	100.0	-	-	95.4	100.0	96.9	-	-	96.9	95.9
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	3	0	0	-	3	0	3	0	-	3	7
% Single-Unit Trucks	0.0	11.1	-	-	6.7	1.6	0.0	-	-	1.5	0.0	2.3	-	-	2.3	2.1
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	0.8	-	-	0.8	0.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (12:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026

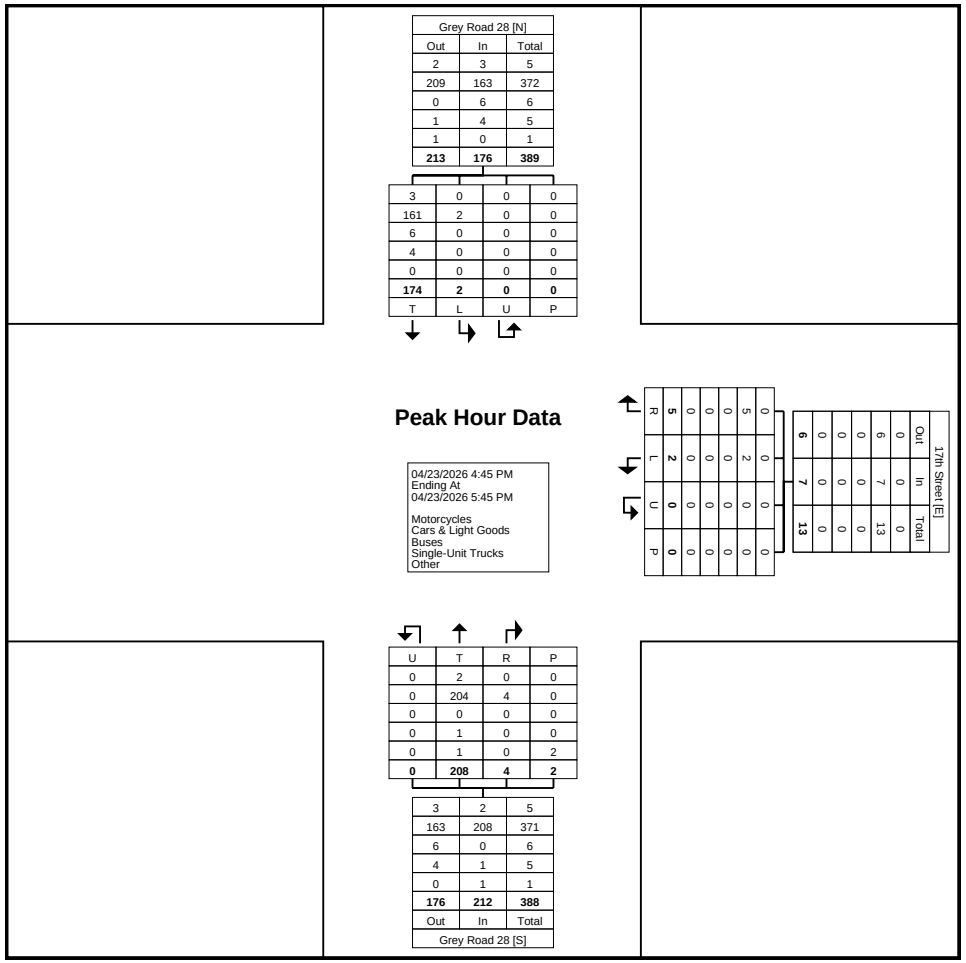
Turning Movement Peak Hour Data (4:45 PM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:45 PM	1	2	0	0	3	44	3	0	0	47	1	43	0	0	44	94
5:00 PM	0	1	0	0	1	52	0	0	0	52	0	53	0	0	53	106
5:15 PM	1	2	0	0	3	56	0	0	0	56	1	42	0	0	43	102
5:30 PM	0	0	0	0	0	56	1	0	2	57	0	36	0	0	36	93
Total	2	5	0	0	7	208	4	0	2	212	2	174	0	0	176	395
Approach %	28.6	71.4	0.0	-	-	98.1	1.9	0.0	-	-	1.1	98.9	0.0	-	-	-
Total %	0.5	1.3	0.0	-	1.8	52.7	1.0	0.0	-	53.7	0.5	44.1	0.0	-	44.6	-
PHF	0.500	0.625	0.000	-	0.583	0.929	0.333	0.000	-	0.930	0.500	0.821	0.000	-	0.830	0.932
Motorcycles	0	0	0	-	0	2	0	0	-	2	0	3	0	-	3	5
% Motorcycles	0.0	0.0	-	-	0.0	1.0	0.0	-	-	0.9	0.0	1.7	-	-	1.7	1.3
Cars & Light Goods	2	5	0	-	7	204	4	0	-	208	2	161	0	-	163	378
% Cars & Light Goods	100.0	100.0	-	-	100.0	98.1	100.0	-	-	98.1	100.0	92.5	-	-	92.6	95.7
Buses	0	0	0	-	0	0	0	0	-	0	0	6	0	-	6	6
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	3.4	-	-	3.4	1.5
Single-Unit Trucks	0	0	0	-	0	1	0	0	-	1	0	4	0	-	4	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	2.3	-	-	2.3	1.3
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

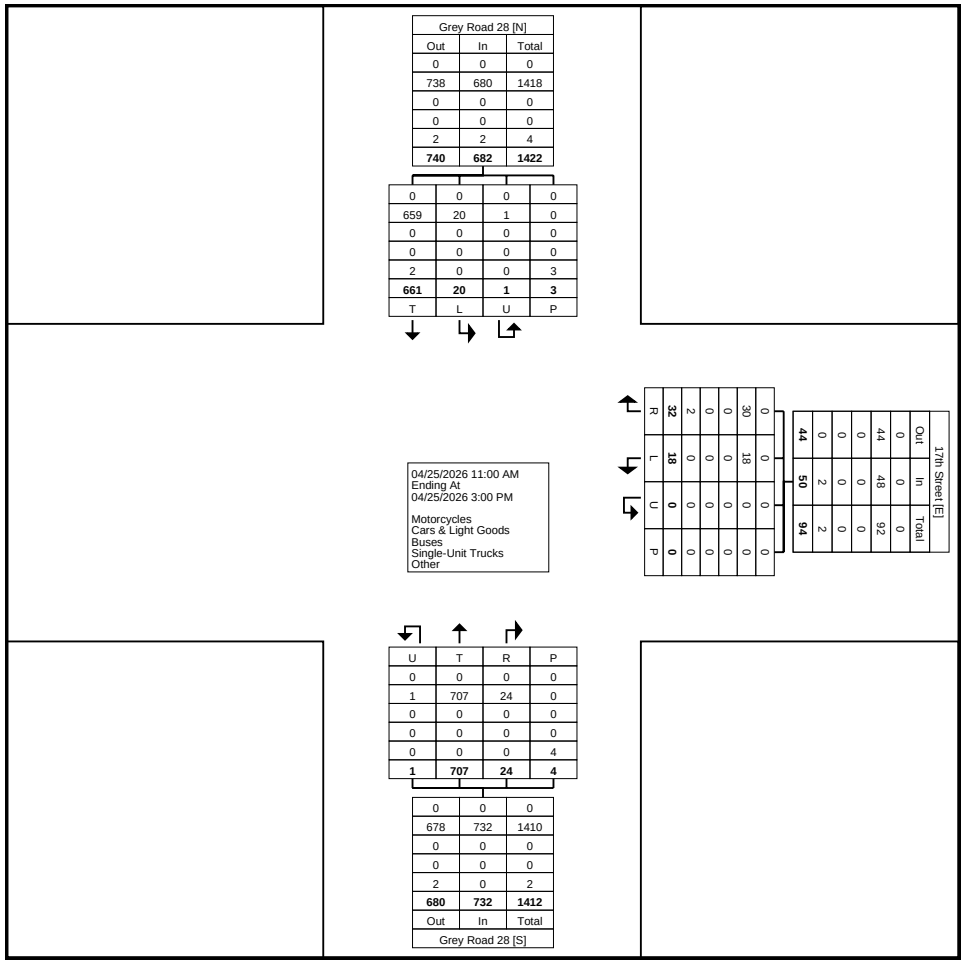
Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
11:00 AM	1	0	0	0	1	40	2	0	1	42	1	38	0	0	39	82
11:15 AM	1	6	0	0	7	39	3	0	0	42	2	37	0	0	39	88
11:30 AM	2	2	0	0	4	53	0	0	0	53	1	42	0	0	43	100
11:45 AM	1	1	0	0	2	54	3	0	1	57	2	42	0	0	44	103
Hourly Total	5	9	0	0	14	186	8	0	2	194	6	159	0	0	165	373
12:00 PM	1	2	0	0	3	35	4	0	0	39	1	52	0	0	53	95
12:15 PM	0	4	0	0	4	43	1	0	1	44	2	38	1	0	41	89
12:30 PM	2	1	0	0	3	45	0	0	0	45	0	52	0	1	52	100
12:45 PM	1	3	0	0	4	35	0	0	0	35	0	42	0	0	42	81
Hourly Total	4	10	0	0	14	158	5	0	1	163	3	184	1	1	188	365
1:00 PM	1	2	0	0	3	45	2	0	0	47	1	42	0	0	43	93
1:15 PM	0	4	0	0	4	45	0	1	0	46	1	35	0	0	36	86
1:30 PM	2	2	0	0	4	49	3	0	0	52	1	46	0	0	47	103
1:45 PM	1	1	0	0	2	49	1	0	1	50	1	38	0	0	39	91
Hourly Total	4	9	0	0	13	188	6	1	1	195	4	161	0	0	165	373
2:00 PM	1	1	0	0	2	48	2	0	0	50	3	33	0	2	36	88
2:15 PM	1	0	0	0	1	38	1	0	0	39	0	44	0	0	44	84
2:30 PM	2	2	0	0	4	47	0	0	0	47	3	44	0	0	47	98
2:45 PM	1	1	0	0	2	42	2	0	0	44	1	36	0	0	37	83
Hourly Total	5	4	0	0	9	175	5	0	0	180	7	157	0	2	164	353
Grand Total	18	32	0	0	50	707	24	1	4	732	20	661	1	3	682	1464
Approach %	36.0	64.0	0.0	-	-	96.6	3.3	0.1	-	-	2.9	96.9	0.1	-	-	-
Total %	1.2	2.2	0.0	-	3.4	48.3	1.6	0.1	-	50.0	1.4	45.2	0.1	-	46.6	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	18	30	0	-	48	707	24	1	-	732	20	659	1	-	680	1460
% Cars & Light Goods	100.0	93.8	-	-	96.0	100.0	100.0	100.0	-	100.0	100.0	99.7	100.0	-	99.7	99.7
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.1
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	6.3	-	-	4.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	4	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

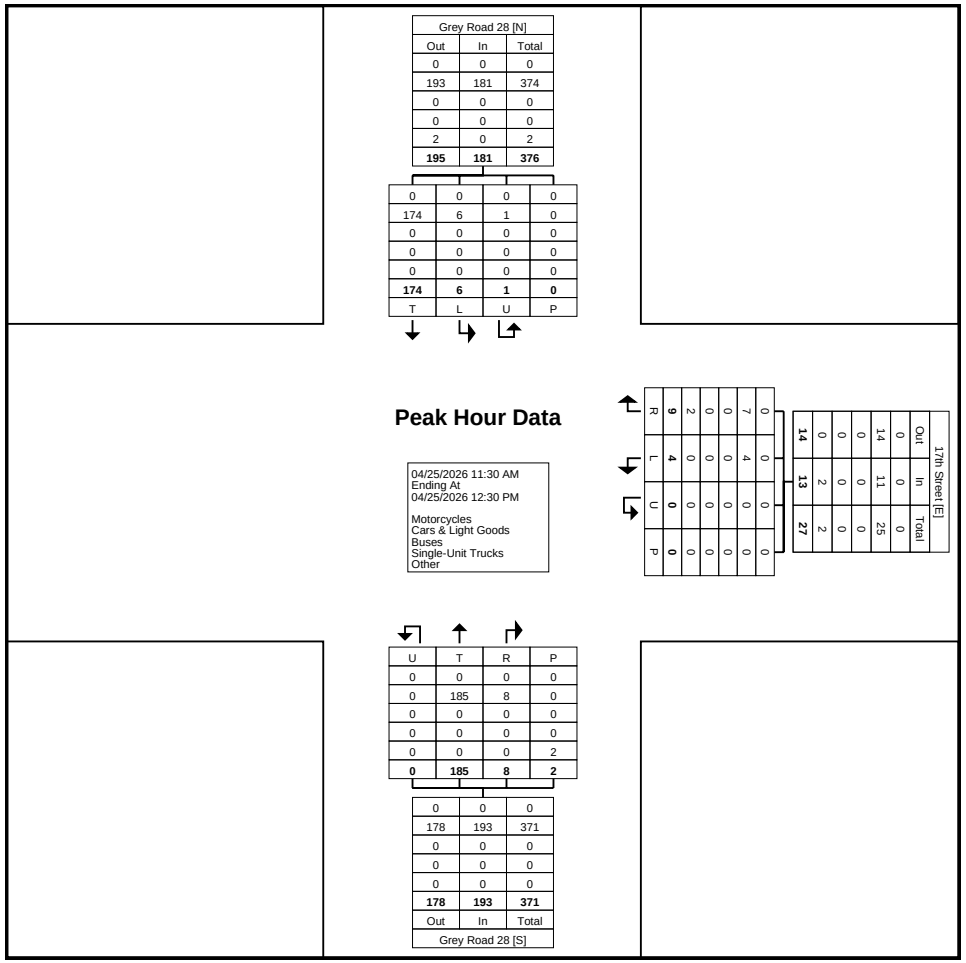
Turning Movement Peak Hour Data (11:30 AM)

Start Time	17th Street Westbound					Grey Road 28 Northbound					Grey Road 28 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
11:30 AM	2	2	0	0	4	53	0	0	0	53	1	42	0	0	43	100
11:45 AM	1	1	0	0	2	54	3	0	1	57	2	42	0	0	44	103
12:00 PM	1	2	0	0	3	35	4	0	0	39	1	52	0	0	53	95
12:15 PM	0	4	0	0	4	43	1	0	1	44	2	38	1	0	41	89
Total	4	9	0	0	13	185	8	0	2	193	6	174	1	0	181	387
Approach %	30.8	69.2	0.0	-	-	95.9	4.1	0.0	-	-	3.3	96.1	0.6	-	-	-
Total %	1.0	2.3	0.0	-	3.4	47.8	2.1	0.0	-	49.9	1.6	45.0	0.3	-	46.8	-
PHF	0.500	0.563	0.000	-	0.813	0.856	0.500	0.000	-	0.846	0.750	0.837	0.250	-	0.854	0.939
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	4	7	0	-	11	185	8	0	-	193	6	174	1	-	181	385
% Cars & Light Goods	100.0	77.8	-	-	84.6	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	99.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	22.2	-	-	15.4	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 17th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	5	0	1	0	0	6	2	4	0	0	0	6	4	10	1	0	2	15	1	16	1	0	0	18	45
7:15 AM	4	0	6	0	0	10	4	1	1	0	0	6	8	16	0	0	0	24	1	18	5	0	1	24	64
7:30 AM	3	1	8	0	0	12	2	0	1	0	0	3	6	12	4	0	1	22	1	24	7	0	0	32	69
7:45 AM	8	7	7	0	0	22	5	8	0	0	0	13	11	11	1	0	0	23	0	30	5	0	0	35	93
Hourly Total	20	8	22	0	0	50	13	13	2	0	0	28	29	49	6	0	3	84	3	88	18	0	1	109	271
8:00 AM	4	0	9	0	1	13	7	2	0	0	0	9	8	11	3	0	0	22	0	24	8	0	0	32	76
8:15 AM	5	3	11	0	4	19	4	5	0	0	0	9	15	31	3	0	2	49	1	29	17	0	1	47	124
8:30 AM	6	1	4	0	0	11	5	6	2	0	0	13	13	18	3	0	0	34	1	38	5	0	0	44	102
8:45 AM	2	6	12	0	2	20	10	4	2	0	0	16	8	22	5	0	0	35	1	27	10	0	2	38	109
Hourly Total	17	10	36	0	7	63	26	17	4	0	0	47	44	82	14	0	2	140	3	118	40	0	3	161	411
9:00 AM	4	5	9	0	3	18	3	5	2	0	0	10	7	24	4	0	0	35	0	29	4	0	3	33	96
9:15 AM	6	4	7	0	1	17	6	1	1	0	1	8	11	24	9	0	1	44	1	22	3	0	5	26	95
9:30 AM	4	2	10	0	0	16	4	5	1	0	0	10	10	26	6	0	1	42	1	29	4	0	6	34	102
9:45 AM	4	3	11	0	1	18	6	2	1	0	0	9	8	34	5	0	1	47	0	40	3	0	3	43	117
Hourly Total	18	14	37	0	5	69	19	13	5	0	1	37	36	108	24	0	3	168	2	120	14	0	17	136	410
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	1	10	0	0	11	6	3	0	0	0	9	10	31	4	0	0	45	1	23	7	0	0	31	96
11:45 AM	7	5	14	0	0	26	3	5	3	0	0	11	13	38	4	0	0	55	1	26	7	0	0	34	126
Hourly Total	7	6	24	0	0	37	9	8	3	0	0	20	23	69	8	0	0	100	2	49	14	0	0	65	222
12:00 PM	4	8	15	0	0	27	6	3	1	0	0	10	11	31	1	0	0	43	1	35	6	0	0	42	122
12:15 PM	2	4	16	0	0	22	7	1	1	0	1	9	10	45	7	0	2	62	0	28	4	0	1	32	125
12:30 PM	7	2	11	0	0	20	4	2	2	0	0	8	9	33	4	0	0	46	0	26	2	0	1	28	102
12:45 PM	5	4	7	0	0	16	4	3	1	0	0	8	10	38	8	0	1	56	2	28	10	0	2	40	120
Hourly Total	18	18	49	0	0	85	21	9	5	0	1	35	40	147	20	0	3	207	3	117	22	0	4	142	469
1:00 PM	11	4	12	0	0	27	6	4	1	0	0	11	8	45	5	0	0	58	1	26	1	0	2	28	124
1:15 PM	5	2	13	0	0	20	8	2	1	0	0	11	13	45	8	0	1	66	1	30	7	0	1	38	135
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	16	6	25	0	0	47	14	6	2	0	0	22	21	90	13	0	1	124	2	56	8	0	3	66	259
4:00 PM	6	4	19	0	1	29	4	8	1	0	0	13	11	43	8	0	0	62	1	31	10	0	1	42	146
4:15 PM	8	1	24	0	3	33	4	3	4	0	0	11	16	40	7	0	0	63	2	33	3	0	0	38	145
4:30 PM	2	3	7	0	2	12	6	4	1	0	0	11	22	34	5	0	0	61	0	28	11	0	2	39	123
4:45 PM	6	1	18	0	3	25	5	4	0	0	0	9	13	41	13	0	0	67	0	36	10	0	0	46	147
Hourly Total	22	9	68	0	9	99	19	19	6	0	0	44	62	158	33	0	0	253	3	128	34	0	3	165	561
5:00 PM	9	7	23	0	0	39	7	2	0	0	0	9	18	43	7	0	1	68	1	45	8	0	2	54	170
5:15 PM	6	2	13	0	2	21	5	0	1	0	0	6	13	49	6	0	0	68	1	35	9	0	3	45	140

5:30 PM	3	3	15	0	1	21	5	2	3	0	0	10	12	52	2	0	0	66	0	28	6	0	1	34	131
5:45 PM	9	0	16	0	2	25	3	2	2	0	1	7	16	27	7	0	3	50	0	31	3	0	1	34	116
Hourly Total	27	12	67	0	5	106	20	6	6	0	1	32	59	171	22	0	4	252	2	139	26	0	7	167	557
6:00 PM	5	2	8	0	0	15	4	0	1	1	0	6	15	33	4	0	0	52	3	25	5	0	0	33	106
6:15 PM	4	4	15	0	0	23	0	2	0	0	0	2	6	26	4	0	0	36	0	17	2	0	2	19	80
6:30 PM	2	0	11	0	0	13	6	4	0	0	0	10	13	22	2	0	0	37	1	14	2	0	0	17	77
6:45 PM	3	2	5	0	0	10	0	3	0	0	0	3	11	23	4	0	0	38	1	16	4	0	1	21	72
Hourly Total	14	8	39	0	0	61	10	9	1	1	0	21	45	104	14	0	0	163	5	72	13	0	3	90	335
Grand Total	159	91	367	0	26	617	151	100	34	1	3	286	359	978	154	0	16	1491	25	887	189	0	41	1101	3495
Approach %	25.8	14.7	59.5	0.0	-	-	52.8	35.0	11.9	0.3	-	-	24.1	65.6	10.3	0.0	-	-	2.3	80.6	17.2	0.0	-	-	-
Total %	4.5	2.6	10.5	0.0	-	17.7	4.3	2.9	1.0	0.0	-	8.2	10.3	28.0	4.4	0.0	-	42.7	0.7	25.4	5.4	0.0	-	31.5	-
Motorcycles	2	0	2	0	-	4	0	0	0	0	-	0	2	12	0	0	-	14	0	12	3	0	-	15	33
% Motorcycles	1.3	0.0	0.5	-	-	0.6	0.0	0.0	0.0	0.0	-	0.0	0.6	1.2	0.0	-	-	0.9	0.0	1.4	1.6	-	-	1.4	0.9
Cars & Light Goods	151	87	361	0	-	599	149	95	31	1	-	276	350	939	152	0	-	1441	25	835	179	0	-	1039	3355
% Cars & Light Goods	95.0	95.6	98.4	-	-	97.1	98.7	95.0	91.2	100.0	-	96.5	97.5	96.0	98.7	-	-	96.6	100.0	94.1	94.7	-	-	94.4	96.0
Buses	2	2	1	0	-	5	1	1	0	0	-	2	2	6	0	0	-	8	0	7	2	0	-	9	24
% Buses	1.3	2.2	0.3	-	-	0.8	0.7	1.0	0.0	0.0	-	0.7	0.6	0.6	0.0	-	-	0.5	0.0	0.8	1.1	-	-	0.8	0.7
Single-Unit Trucks	3	1	2	0	-	6	1	1	1	0	-	3	2	14	2	0	-	18	0	24	3	0	-	27	54
% Single-Unit Trucks	1.9	1.1	0.5	-	-	1.0	0.7	1.0	2.9	0.0	-	1.0	0.6	1.4	1.3	-	-	1.2	0.0	2.7	1.6	-	-	2.5	1.5
Articulated Trucks	1	0	1	0	-	2	0	0	0	0	-	0	2	7	0	0	-	9	0	8	1	0	-	9	20
% Articulated Trucks	0.6	0.0	0.3	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.6	0.7	0.0	-	-	0.6	0.0	0.9	0.5	-	-	0.8	0.6
Bicycles on Road	0	1	0	0	-	1	0	3	2	0	-	5	1	0	0	0	-	1	0	1	1	0	-	2	9
% Bicycles on Road	0.0	1.1	0.0	-	-	0.2	0.0	3.0	5.9	0.0	-	1.7	0.3	0.0	0.0	-	-	0.1	0.0	0.1	0.5	-	-	0.2	0.3
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	15.4	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	4.9	-	-
Pedestrians	-	-	-	-	22	-	-	-	-	-	3	-	-	-	-	-	16	-	-	-	-	-	39	-	-
% Pedestrians	-	-	-	-	84.6	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	95.1	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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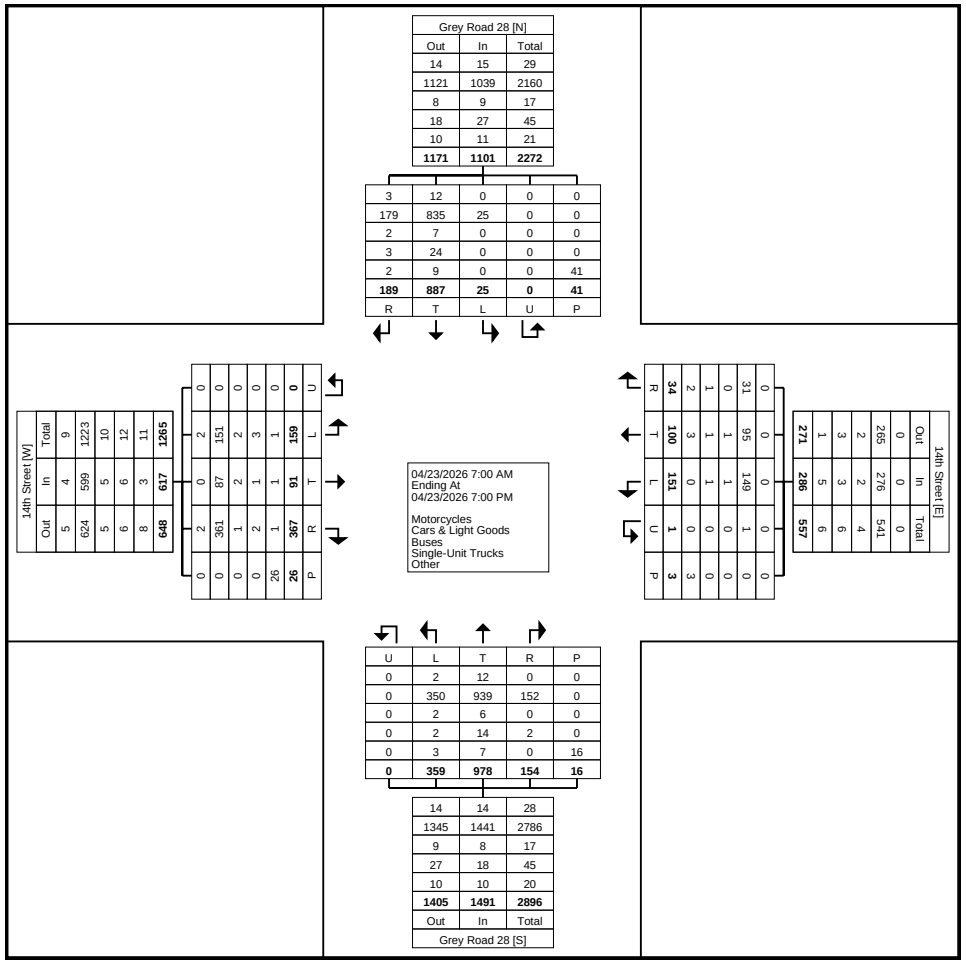
Start Date: 04/23/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

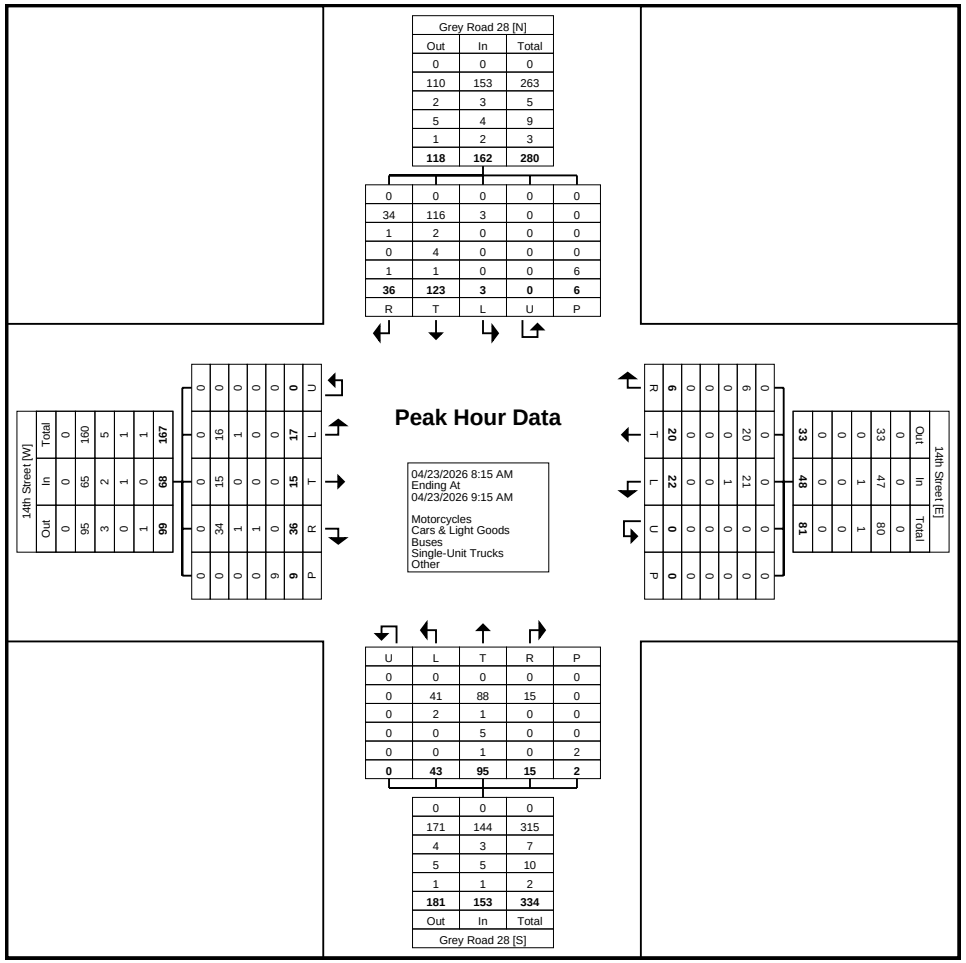
Turning Movement Peak Hour Data (8:15 AM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	5	3	11	0	4	19	4	5	0	0	0	9	15	31	3	0	2	49	1	29	17	0	1	47	124
8:30 AM	6	1	4	0	0	11	5	6	2	0	0	13	13	18	3	0	0	34	1	38	5	0	0	44	102
8:45 AM	2	6	12	0	2	20	10	4	2	0	0	16	8	22	5	0	0	35	1	27	10	0	2	38	109
9:00 AM	4	5	9	0	3	18	3	5	2	0	0	10	7	24	4	0	0	35	0	29	4	0	3	33	96
Total	17	15	36	0	9	68	22	20	6	0	0	48	43	95	15	0	2	153	3	123	36	0	6	162	431
Approach %	25.0	22.1	52.9	0.0	-	-	45.8	41.7	12.5	0.0	-	-	28.1	62.1	9.8	0.0	-	-	1.9	75.9	22.2	0.0	-	-	-
Total %	3.9	3.5	8.4	0.0	-	15.8	5.1	4.6	1.4	0.0	-	11.1	10.0	22.0	3.5	0.0	-	35.5	0.7	28.5	8.4	0.0	-	37.6	-
PHF	0.708	0.625	0.750	0.000	-	0.850	0.550	0.833	0.750	0.000	-	0.750	0.717	0.766	0.750	0.000	-	0.781	0.750	0.809	0.529	0.000	-	0.862	0.869
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	16	15	34	0	-	65	21	20	6	0	-	47	41	88	15	0	-	144	3	116	34	0	-	153	409
% Cars & Light Goods	94.1	100.0	94.4	-	-	95.6	95.5	100.0	100.0	-	-	97.9	95.3	92.6	100.0	-	-	94.1	100.0	94.3	94.4	-	-	94.4	94.9
Buses	1	0	1	0	-	2	1	0	0	0	-	1	2	1	0	0	-	3	0	2	1	0	-	3	9
% Buses	5.9	0.0	2.8	-	-	2.9	4.5	0.0	0.0	-	-	2.1	4.7	1.1	0.0	-	-	2.0	0.0	1.6	2.8	-	-	1.9	2.1
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	5	0	0	-	5	0	4	0	0	-	4	10
% Single-Unit Trucks	0.0	0.0	2.8	-	-	1.5	0.0	0.0	0.0	-	-	0.0	0.0	5.3	0.0	-	-	3.3	0.0	3.3	0.0	-	-	2.5	2.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	1	0	-	2	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	0.7	0.0	0.8	2.8	-	-	1.2	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 5



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

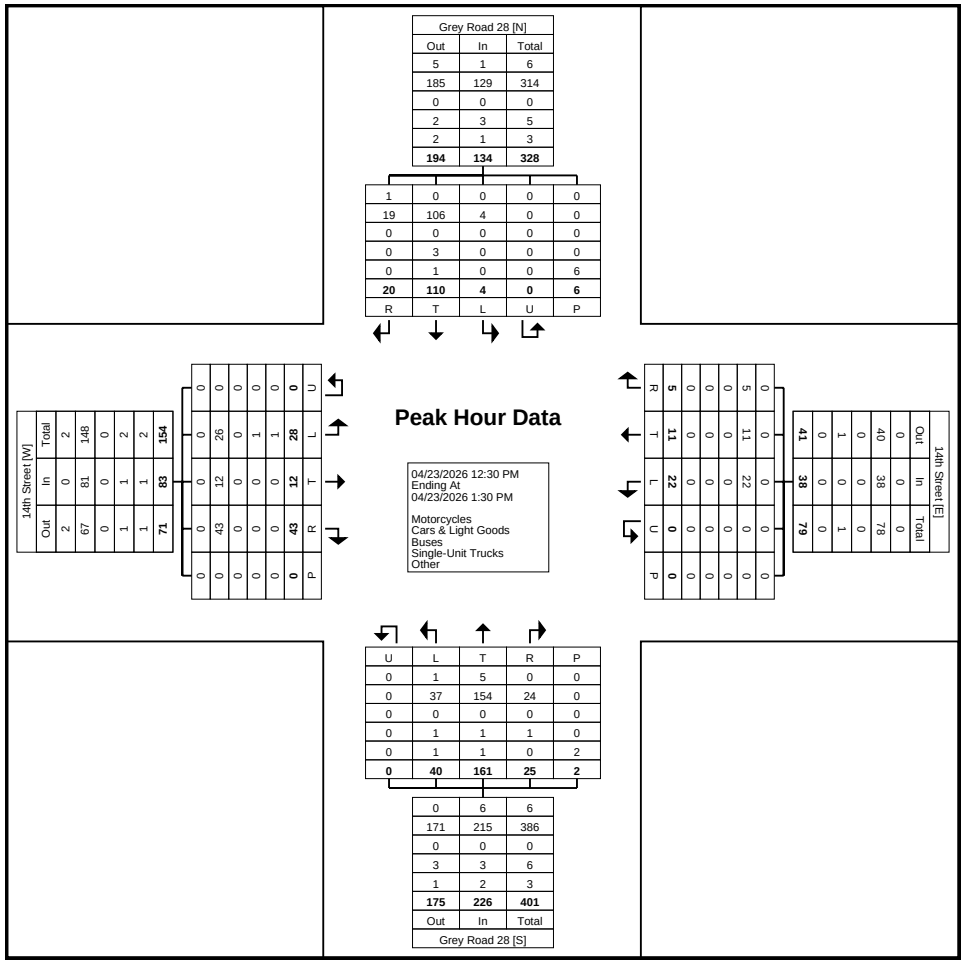
Turning Movement Peak Hour Data (12:30 PM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:30 PM	7	2	11	0	0	20	4	2	2	0	0	8	9	33	4	0	0	46	0	26	2	0	1	28	102
12:45 PM	5	4	7	0	0	16	4	3	1	0	0	8	10	38	8	0	1	56	2	28	10	0	2	40	120
1:00 PM	11	4	12	0	0	27	6	4	1	0	0	11	8	45	5	0	0	58	1	26	1	0	2	28	124
1:15 PM	5	2	13	0	0	20	8	2	1	0	0	11	13	45	8	0	1	66	1	30	7	0	1	38	135
Total	28	12	43	0	0	83	22	11	5	0	0	38	40	161	25	0	2	226	4	110	20	0	6	134	481
Approach %	33.7	14.5	51.8	0.0	-	-	57.9	28.9	13.2	0.0	-	-	17.7	71.2	11.1	0.0	-	-	3.0	82.1	14.9	0.0	-	-	-
Total %	5.8	2.5	8.9	0.0	-	17.3	4.6	2.3	1.0	0.0	-	7.9	8.3	33.5	5.2	0.0	-	47.0	0.8	22.9	4.2	0.0	-	27.9	-
PHF	0.636	0.750	0.827	0.000	-	0.769	0.688	0.688	0.625	0.000	-	0.864	0.769	0.894	0.781	0.000	-	0.856	0.500	0.917	0.500	0.000	-	0.838	0.891
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	1	5	0	0	-	6	0	0	1	0	-	1	7
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.5	3.1	0.0	-	-	2.7	0.0	0.0	5.0	-	-	0.7	1.5
Cars & Light Goods	26	12	43	0	-	81	22	11	5	0	-	38	37	154	24	0	-	215	4	106	19	0	-	129	463
% Cars & Light Goods	92.9	100.0	100.0	-	-	97.6	100.0	100.0	100.0	-	-	100.0	92.5	95.7	96.0	-	-	95.1	100.0	96.4	95.0	-	-	96.3	96.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	1	1	0	-	3	0	3	0	0	-	3	7
% Single-Unit Trucks	3.6	0.0	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	2.5	0.6	4.0	-	-	1.3	0.0	2.7	0.0	-	-	2.2	1.5
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	0	1	0	0	-	1	4
% Articulated Trucks	3.6	0.0	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	2.5	0.6	0.0	-	-	0.9	0.0	0.9	0.0	-	-	0.7	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026


Grey Road 28 [N]
Out In Total
5 1 6
185 129 314
0 0 0
2 3 5
2 1 3
194 134 328
1 0 0 0 0
19 106 4 0 0
0 0 0 0 0
0 3 0 0 0
0 1 0 0 6
20 110 4 0 6
R T L U P
14th Street [W]
Out In Total
2 0 2
67 81 148
0 0 0
1 1 2
1 1 2
71 83 154
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026

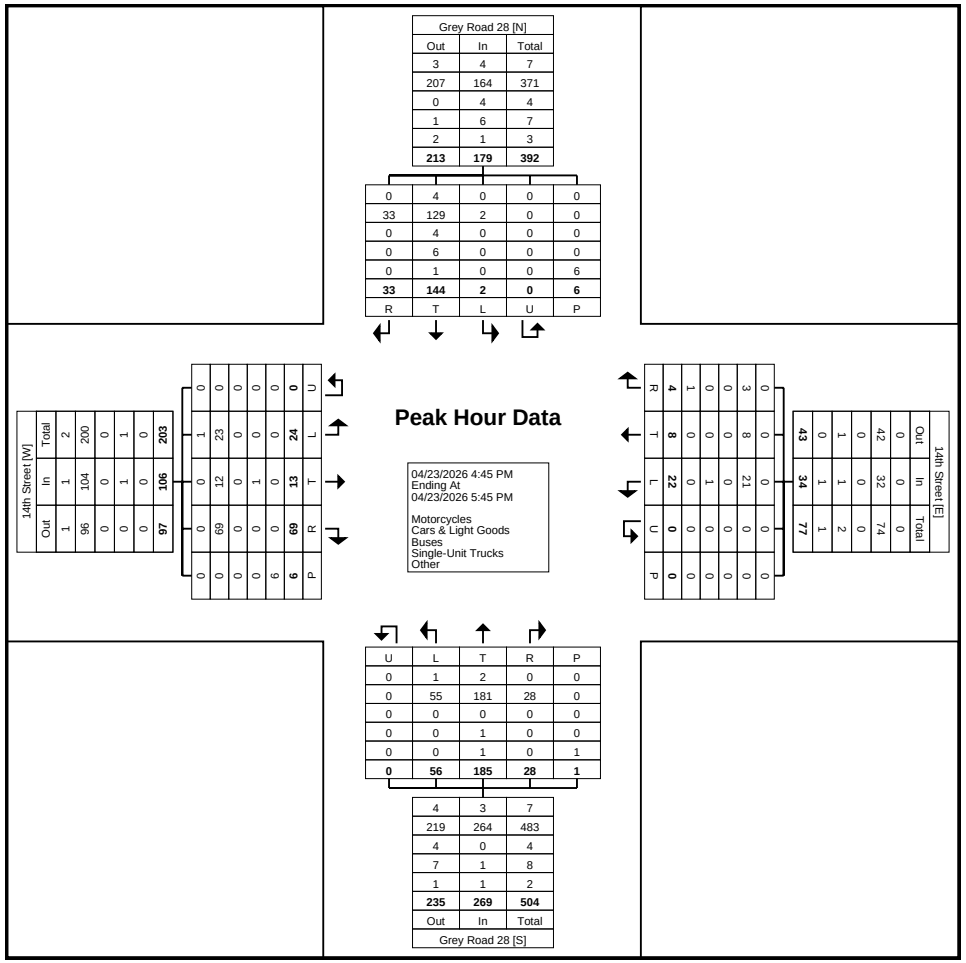
Turning Movement Peak Hour Data (4:45 PM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	6	1	18	0	3	25	5	4	0	0	0	9	13	41	13	0	0	67	0	36	10	0	0	46	147
5:00 PM	9	7	23	0	0	39	7	2	0	0	0	9	18	43	7	0	1	68	1	45	8	0	2	54	170
5:15 PM	6	2	13	0	2	21	5	0	1	0	0	6	13	49	6	0	0	68	1	35	9	0	3	45	140
5:30 PM	3	3	15	0	1	21	5	2	3	0	0	10	12	52	2	0	0	66	0	28	6	0	1	34	131
Total	24	13	69	0	6	106	22	8	4	0	0	34	56	185	28	0	1	269	2	144	33	0	6	179	588
Approach %	22.6	12.3	65.1	0.0	-	-	64.7	23.5	11.8	0.0	-	-	20.8	68.8	10.4	0.0	-	-	1.1	80.4	18.4	0.0	-	-	-
Total %	4.1	2.2	11.7	0.0	-	18.0	3.7	1.4	0.7	0.0	-	5.8	9.5	31.5	4.8	0.0	-	45.7	0.3	24.5	5.6	0.0	-	30.4	-
PHF	0.667	0.464	0.750	0.000	-	0.679	0.786	0.500	0.333	0.000	-	0.850	0.778	0.889	0.538	0.000	-	0.989	0.500	0.800	0.825	0.000	-	0.829	0.865
Motorcycles	1	0	0	0	-	1	0	0	0	0	-	0	1	2	0	0	-	3	0	4	0	0	-	4	8
% Motorcycles	4.2	0.0	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	1.8	1.1	0.0	-	-	1.1	0.0	2.8	0.0	-	-	2.2	1.4
Cars & Light Goods	23	12	69	0	-	104	21	8	3	0	-	32	55	181	28	0	-	264	2	129	33	0	-	164	564
% Cars & Light Goods	95.8	92.3	100.0	-	-	98.1	95.5	100.0	75.0	-	-	94.1	98.2	97.8	100.0	-	-	98.1	100.0	89.6	100.0	-	-	91.6	95.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	4
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.8	0.0	-	-	2.2	0.7
Single-Unit Trucks	0	1	0	0	-	1	1	0	0	0	-	1	0	1	0	0	-	1	0	6	0	0	-	6	9
% Single-Unit Trucks	0.0	7.7	0.0	-	-	0.9	4.5	0.0	0.0	-	-	2.9	0.0	0.5	0.0	-	-	0.4	0.0	4.2	0.0	-	-	3.4	1.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	25.0	-	-	2.9	0.0	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.6	0.3
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	66.7	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

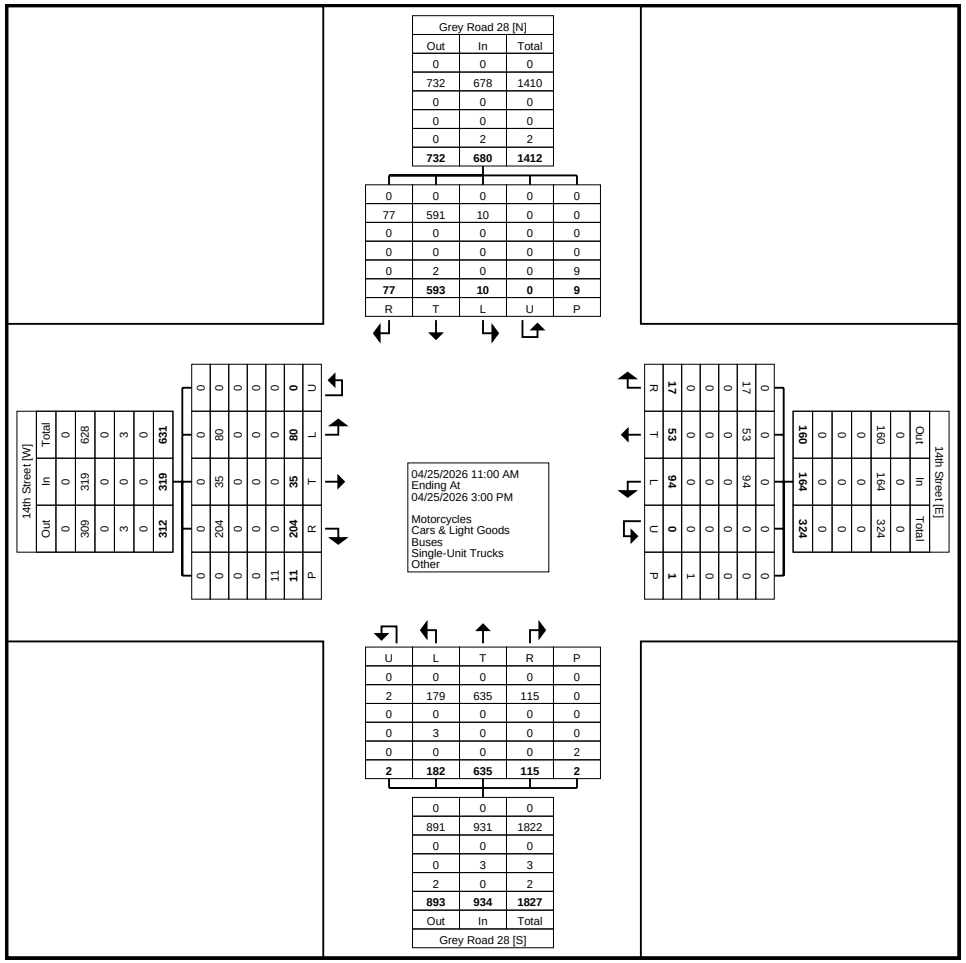
Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	3	6	15	0	2	24	8	8	2	0	0	18	11	38	9	0	0	58	1	32	6	0	3	39	139
11:15 AM	9	1	15	0	0	25	10	4	2	0	0	16	15	30	11	1	0	57	0	35	2	0	0	37	135
11:30 AM	3	7	14	0	2	24	7	5	3	0	0	15	12	50	5	0	0	67	0	41	4	0	0	45	151
11:45 AM	6	1	13	0	1	20	4	6	0	0	0	10	8	48	7	0	0	63	1	41	1	0	0	43	136
Hourly Total	21	15	57	0	5	93	29	23	7	0	0	59	46	166	32	1	0	245	2	149	13	0	3	164	561
12:00 PM	5	1	12	0	0	18	2	4	0	0	0	6	12	35	7	0	0	54	1	42	8	0	0	51	129
12:15 PM	5	2	13	0	1	20	7	4	0	0	0	11	6	39	8	0	0	53	1	33	5	0	1	39	123
12:30 PM	6	1	8	0	0	15	6	2	2	0	0	10	10	37	10	1	0	58	1	50	3	0	0	54	137
12:45 PM	6	0	8	0	0	14	5	4	0	0	0	9	14	28	8	0	0	50	1	35	7	0	0	43	116
Hourly Total	22	4	41	0	1	67	20	14	2	0	0	36	42	139	33	1	0	215	4	160	23	0	1	187	505
1:00 PM	5	2	14	0	0	21	3	3	2	0	0	8	13	40	5	0	1	58	0	36	6	0	0	42	129
1:15 PM	5	4	18	0	1	27	6	0	2	0	0	8	11	39	7	0	0	57	1	35	2	0	0	38	130
1:30 PM	8	3	13	0	1	24	10	3	1	0	0	14	14	44	8	0	0	66	2	37	8	0	1	47	151
1:45 PM	5	0	8	0	0	13	7	2	1	0	0	10	7	43	7	0	0	57	0	35	4	0	1	39	119
Hourly Total	23	9	53	0	2	85	26	8	6	0	0	40	45	166	27	0	1	238	3	143	20	0	2	166	529
2:00 PM	7	3	15	0	2	25	7	2	1	0	0	10	9	43	9	0	0	61	0	31	3	0	2	34	130
2:15 PM	1	2	11	0	0	14	7	0	1	0	1	8	17	38	4	0	1	59	1	40	4	0	0	45	126
2:30 PM	0	1	13	0	0	14	2	5	0	0	0	7	9	46	4	0	0	59	0	38	9	0	0	47	127
2:45 PM	6	1	14	0	1	21	3	1	0	0	0	4	14	37	6	0	0	57	0	32	5	0	1	37	119
Hourly Total	14	7	53	0	3	74	19	8	2	0	1	29	49	164	23	0	1	236	1	141	21	0	3	163	502
Grand Total	80	35	204	0	11	319	94	53	17	0	1	164	182	635	115	2	2	934	10	593	77	0	9	680	2097
Approach %	25.1	11.0	63.9	0.0	-	-	57.3	32.3	10.4	0.0	-	-	19.5	68.0	12.3	0.2	-	-	1.5	87.2	11.3	0.0	-	-	-
Total %	3.8	1.7	9.7	0.0	-	15.2	4.5	2.5	0.8	0.0	-	7.8	8.7	30.3	5.5	0.1	-	44.5	0.5	28.3	3.7	0.0	-	32.4	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	80	35	204	0	-	319	94	53	17	0	-	164	179	635	115	2	-	931	10	591	77	0	-	678	2092
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.4	100.0	100.0	100.0	-	99.7	100.0	99.7	100.0	-	-	99.7	99.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	3	0	0	0	-	3	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.6	0.0	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	-	0.3	0.1

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	9.1	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	90.9	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

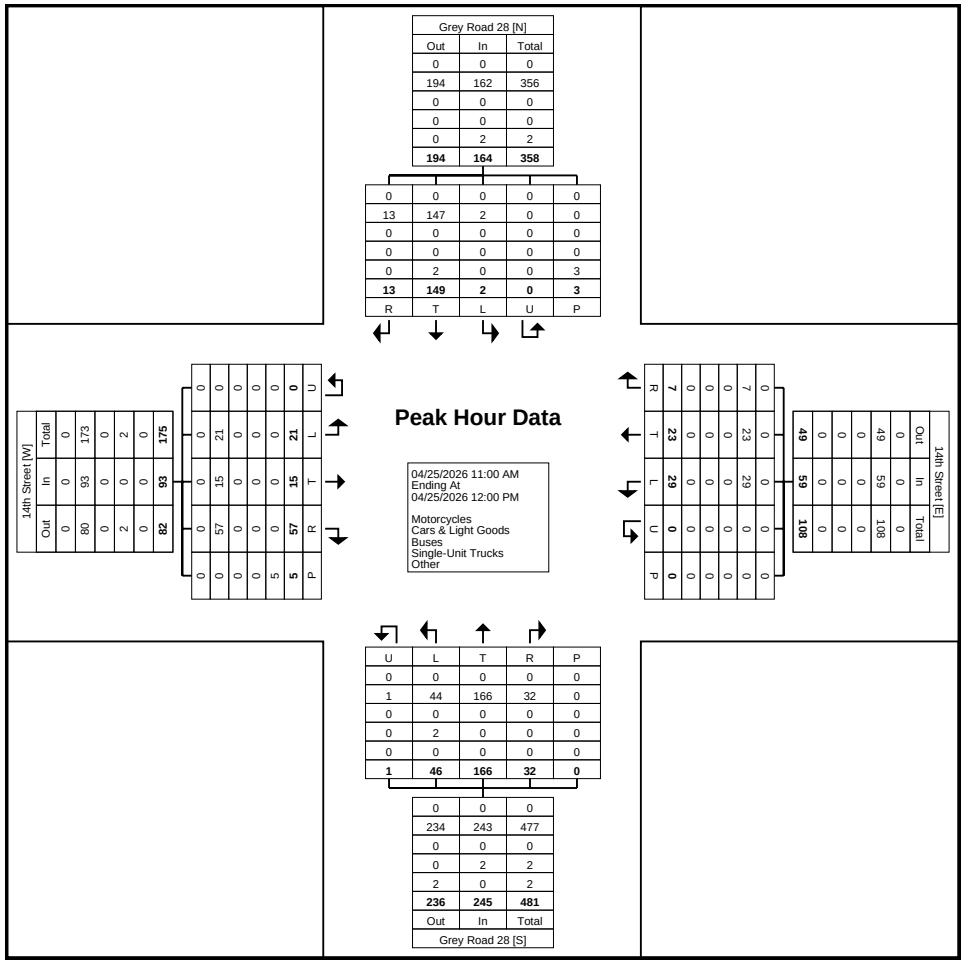
Turning Movement Peak Hour Data (11:00 AM)

Start Time	14th Street Eastbound						14th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	3	6	15	0	2	24	8	8	2	0	0	18	11	38	9	0	0	58	1	32	6	0	3	39	139
11:15 AM	9	1	15	0	0	25	10	4	2	0	0	16	15	30	11	1	0	57	0	35	2	0	0	37	135
11:30 AM	3	7	14	0	2	24	7	5	3	0	0	15	12	50	5	0	0	67	0	41	4	0	0	45	151
11:45 AM	6	1	13	0	1	20	4	6	0	0	0	10	8	48	7	0	0	63	1	41	1	0	0	43	136
Total	21	15	57	0	5	93	29	23	7	0	0	59	46	166	32	1	0	245	2	149	13	0	3	164	561
Approach %	22.6	16.1	61.3	0.0	-	-	49.2	39.0	11.9	0.0	-	-	18.8	67.8	13.1	0.4	-	-	1.2	90.9	7.9	0.0	-	-	-
Total %	3.7	2.7	10.2	0.0	-	16.6	5.2	4.1	1.2	0.0	-	10.5	8.2	29.6	5.7	0.2	-	43.7	0.4	26.6	2.3	0.0	-	29.2	-
PHF	0.583	0.536	0.950	0.000	-	0.930	0.725	0.719	0.583	0.000	-	0.819	0.767	0.830	0.727	0.250	-	0.914	0.500	0.909	0.542	0.000	-	0.911	0.929
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	21	15	57	0	-	93	29	23	7	0	-	59	44	166	32	1	-	243	2	147	13	0	-	162	557
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	95.7	100.0	100.0	100.0	-	99.2	100.0	98.7	100.0	-	-	98.8	99.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	2	0	0	0	0	-	0	2
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	4.3	0.0	0.0	0.0	-	0.8	0.0	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.3	0.0	-	-	1.2	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 14th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Data

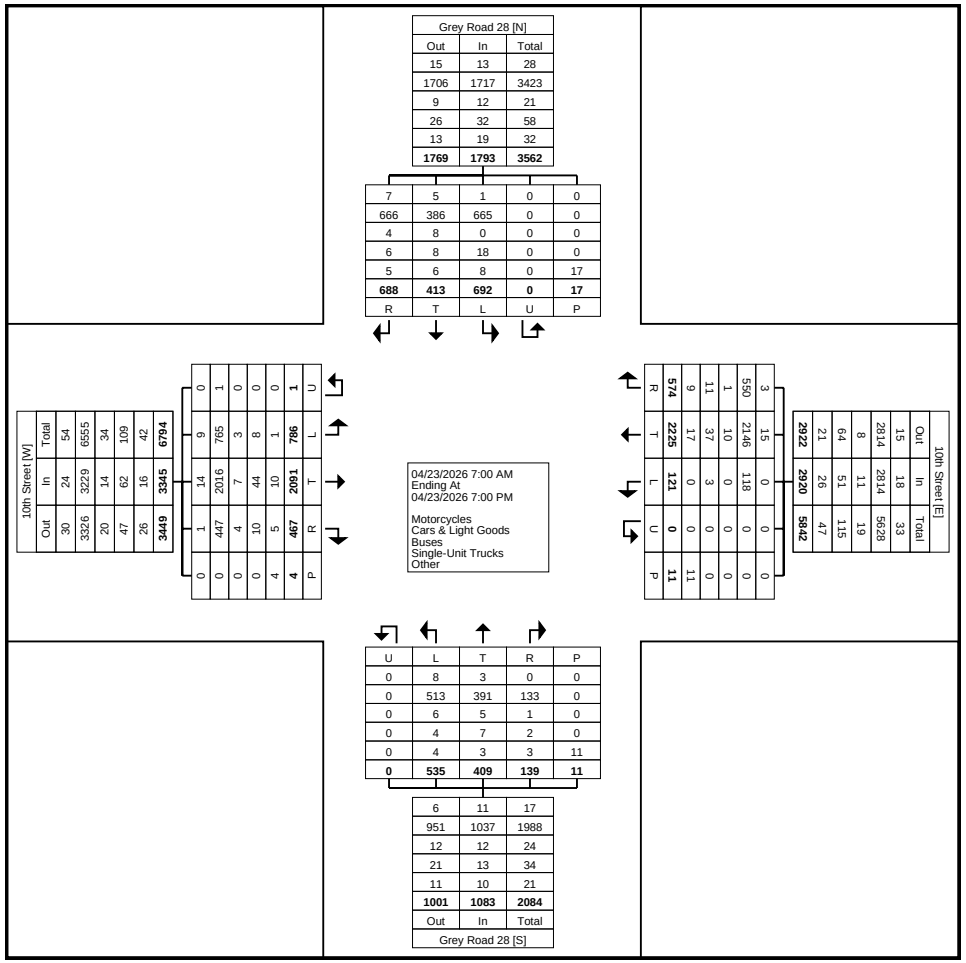
Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	10	23	6	0	0	39	1	30	9	0	0	40	8	6	3	0	0	17	5	3	16	0	1	24	120
7:15 AM	13	37	8	0	0	58	1	37	9	0	0	47	5	10	3	0	0	18	5	7	12	0	0	24	147
7:30 AM	12	38	10	1	0	61	2	53	7	0	0	62	10	7	1	0	0	18	6	5	13	0	0	24	165
7:45 AM	9	56	10	0	0	75	4	60	14	0	0	78	13	13	4	0	0	30	8	10	15	0	0	33	216
Hourly Total	44	154	34	1	0	233	8	180	39	0	0	227	36	36	11	0	0	83	24	25	56	0	1	105	648
8:00 AM	14	38	11	0	0	63	5	78	10	0	0	93	17	10	2	0	0	29	9	10	15	0	0	34	219
8:15 AM	26	43	12	0	0	81	1	66	23	0	0	90	18	8	4	0	0	30	12	9	25	0	1	46	247
8:30 AM	24	46	7	0	0	77	1	83	12	0	0	96	10	17	2	0	0	29	9	10	38	0	0	57	259
8:45 AM	25	56	5	0	1	86	4	81	9	0	0	94	17	11	7	0	0	35	19	8	27	0	1	54	269
Hourly Total	89	183	35	0	1	307	11	308	54	0	0	373	62	46	15	0	0	123	49	37	105	0	2	191	994
9:00 AM	20	69	12	0	0	101	1	43	12	0	0	56	9	14	3	0	0	26	18	6	16	0	0	40	223
9:15 AM	25	61	7	0	0	93	1	52	20	0	0	73	13	10	1	0	0	24	15	13	20	0	0	48	238
9:30 AM	24	47	7	0	0	78	0	62	17	0	0	79	16	13	6	0	0	35	13	8	27	0	1	48	240
9:45 AM	40	50	9	0	0	99	6	75	14	0	0	95	11	13	3	0	0	27	28	10	28	0	1	66	287
Hourly Total	109	227	35	0	0	371	8	232	63	0	0	303	49	50	13	0	0	112	74	37	91	0	2	202	988
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	31	84	15	0	0	130	1	69	16	0	1	86	15	11	4	0	1	30	36	14	17	0	1	67	313
11:45 AM	36	62	18	0	0	116	4	75	20	0	0	99	19	13	6	0	0	38	24	12	24	0	0	60	313
Hourly Total	67	146	33	0	0	246	5	144	36	0	1	185	34	24	10	0	1	68	60	26	41	0	1	127	626
12:00 PM	25	84	18	0	2	127	3	68	20	0	0	91	16	13	4	0	3	33	24	20	23	0	0	67	318
12:15 PM	41	71	16	0	0	128	6	96	27	0	0	129	14	11	2	0	2	27	20	14	42	0	0	76	360
12:30 PM	31	80	11	0	0	122	6	73	16	0	2	95	16	19	4	0	0	39	37	13	29	0	0	79	335
12:45 PM	27	66	11	0	0	104	6	82	24	0	0	112	21	13	2	0	0	36	18	12	30	0	0	60	312
Hourly Total	124	301	56	0	2	481	21	319	87	0	2	427	67	56	12	0	5	135	99	59	124	0	0	282	1325
1:00 PM	25	71	20	0	0	116	6	54	21	0	0	81	16	18	2	0	0	36	17	13	29	0	0	59	292
1:15 PM	28	61	11	0	0	100	3	72	27	0	0	102	16	18	7	0	0	41	24	15	25	0	0	64	307
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	53	132	31	0	0	216	9	126	48	0	0	183	32	36	9	0	0	77	41	28	54	0	0	123	599
4:00 PM	32	79	18	0	0	129	2	94	23	0	0	119	25	17	8	0	0	50	47	25	16	0	2	88	386
4:15 PM	24	87	17	0	0	128	5	78	35	0	1	118	21	16	5	0	0	42	38	18	22	0	0	78	366
4:30 PM	20	80	23	0	0	123	2	70	23	0	1	95	27	22	5	0	0	54	27	17	20	0	0	64	336
4:45 PM	30	92	20	0	0	142	7	106	19	0	0	132	17	15	13	0	0	45	32	23	20	0	1	75	394
Hourly Total	106	338	78	0	0	522	16	348	100	0	2	464	90	70	31	0	0	191	144	83	78	0	3	305	1482
5:00 PM	32	84	28	0	1	144	4	71	24	0	0	99	26	14	6	0	1	46	31	22	25	0	1	78	367
5:15 PM	28	105	24	0	0	157	4	83	19	0	0	106	18	20	8	0	0	46	28	25	30	0	0	83	392

5:30 PM	24	92	21	0	0	137	10	84	21	0	0	115	16	15	6	0	2	37	35	16	15	0	0	66	355
5:45 PM	28	82	13	0	0	123	9	83	28	0	0	120	25	11	3	0	0	39	25	7	15	0	0	47	329
Hourly Total	112	363	86	0	1	561	27	321	92	0	0	440	85	60	23	0	3	168	119	70	85	0	1	274	1443
6:00 PM	24	71	19	0	0	114	7	55	19	0	3	81	22	12	2	0	1	36	17	17	20	0	4	54	285
6:15 PM	18	53	32	0	0	103	3	65	12	0	0	80	21	4	7	0	0	32	21	10	16	0	0	47	262
6:30 PM	20	67	13	0	0	100	3	59	10	0	3	72	22	11	3	0	1	36	30	14	8	0	3	52	260
6:45 PM	20	56	15	0	0	91	3	68	14	0	0	85	15	4	3	0	0	22	14	7	10	0	0	31	229
Hourly Total	82	247	79	0	0	408	16	247	55	0	6	318	80	31	15	0	2	126	82	48	54	0	7	184	1036
Grand Total	786	2091	467	1	4	3345	121	2225	574	0	11	2920	535	409	139	0	11	1083	692	413	688	0	17	1793	9141
Approach %	23.5	62.5	14.0	0.0	-	-	4.1	76.2	19.7	0.0	-	-	49.4	37.8	12.8	0.0	-	-	38.6	23.0	38.4	0.0	-	-	-
Total %	8.6	22.9	5.1	0.0	-	36.6	1.3	24.3	6.3	0.0	-	31.9	5.9	4.5	1.5	0.0	-	11.8	7.6	4.5	7.5	0.0	-	19.6	-
Motorcycles	9	14	1	0	-	24	0	15	3	0	-	18	8	3	0	0	-	11	1	5	7	0	-	13	66
% Motorcycles	1.1	0.7	0.2	0.0	-	0.7	0.0	0.7	0.5	-	-	0.6	1.5	0.7	0.0	-	-	1.0	0.1	1.2	1.0	-	-	0.7	0.7
Cars & Light Goods	765	2016	447	1	-	3229	118	2146	550	0	-	2814	513	391	133	0	-	1037	665	386	666	0	-	1717	8797
% Cars & Light Goods	97.3	96.4	95.7	100.0	-	96.5	97.5	96.4	95.8	-	-	96.4	95.9	95.6	95.7	-	-	95.8	96.1	93.5	96.8	-	-	95.8	96.2
Buses	3	7	4	0	-	14	0	10	1	0	-	11	6	5	1	0	-	12	0	8	4	0	-	12	49
% Buses	0.4	0.3	0.9	0.0	-	0.4	0.0	0.4	0.2	-	-	0.4	1.1	1.2	0.7	-	-	1.1	0.0	1.9	0.6	-	-	0.7	0.5
Single-Unit Trucks	8	44	10	0	-	62	3	37	11	0	-	51	4	7	2	0	-	13	18	8	6	0	-	32	158
% Single-Unit Trucks	1.0	2.1	2.1	0.0	-	1.9	2.5	1.7	1.9	-	-	1.7	0.7	1.7	1.4	-	-	1.2	2.6	1.9	0.9	-	-	1.8	1.7
Articulated Trucks	1	10	2	0	-	13	0	17	9	0	-	26	4	3	3	0	-	10	8	5	5	0	-	18	67
% Articulated Trucks	0.1	0.5	0.4	0.0	-	0.4	0.0	0.8	1.6	-	-	0.9	0.7	0.7	2.2	-	-	0.9	1.2	1.2	0.7	-	-	1.0	0.7
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	4
% Bicycles on Road	0.0	0.0	0.6	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	9.1	-	-	-	-	-	35.3	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	10	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	90.9	-	-	-	-	-	64.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026
Page No: 3



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

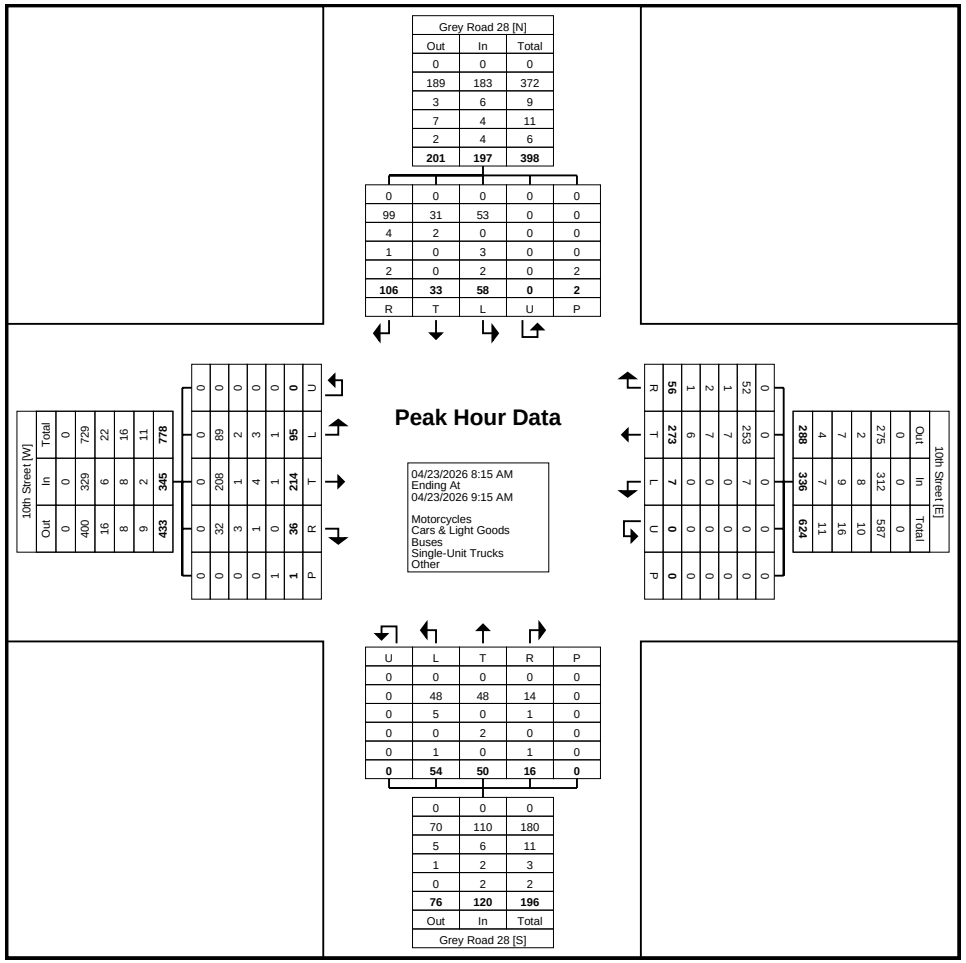
Turning Movement Peak Hour Data (8:15 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	26	43	12	0	0	81	1	66	23	0	0	90	18	8	4	0	0	30	12	9	25	0	1	46	247
8:30 AM	24	46	7	0	0	77	1	83	12	0	0	96	10	17	2	0	0	29	9	10	38	0	0	57	259
8:45 AM	25	56	5	0	1	86	4	81	9	0	0	94	17	11	7	0	0	35	19	8	27	0	1	54	269
9:00 AM	20	69	12	0	0	101	1	43	12	0	0	56	9	14	3	0	0	26	18	6	16	0	0	40	223
Total	95	214	36	0	1	345	7	273	56	0	0	336	54	50	16	0	0	120	58	33	106	0	2	197	998
Approach %	27.5	62.0	10.4	0.0	-	-	2.1	81.3	16.7	0.0	-	-	45.0	41.7	13.3	0.0	-	-	29.4	16.8	53.8	0.0	-	-	-
Total %	9.5	21.4	3.6	0.0	-	34.6	0.7	27.4	5.6	0.0	-	33.7	5.4	5.0	1.6	0.0	-	12.0	5.8	3.3	10.6	0.0	-	19.7	-
PHF	0.913	0.775	0.750	0.000	-	0.854	0.438	0.822	0.609	0.000	-	0.875	0.750	0.735	0.571	0.000	-	0.857	0.763	0.825	0.697	0.000	-	0.864	0.928
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	89	208	32	0	-	329	7	253	52	0	-	312	48	48	14	0	-	110	53	31	99	0	-	183	934
% Cars & Light Goods	93.7	97.2	88.9	-	-	95.4	100.0	92.7	92.9	-	-	92.9	88.9	96.0	87.5	-	-	91.7	91.4	93.9	93.4	-	-	92.9	93.6
Buses	2	1	3	0	-	6	0	7	1	0	-	8	5	0	1	0	-	6	0	2	4	0	-	6	26
% Buses	2.1	0.5	8.3	-	-	1.7	0.0	2.6	1.8	-	-	2.4	9.3	0.0	6.3	-	-	5.0	0.0	6.1	3.8	-	-	3.0	2.6
Single-Unit Trucks	3	4	1	0	-	8	0	7	2	0	-	9	0	2	0	0	-	2	3	0	1	0	-	4	23
% Single-Unit Trucks	3.2	1.9	2.8	-	-	2.3	0.0	2.6	3.6	-	-	2.7	0.0	4.0	0.0	-	-	1.7	5.2	0.0	0.9	-	-	2.0	2.3
Articulated Trucks	1	1	0	0	-	2	0	6	1	0	-	7	1	0	1	0	-	2	2	0	2	0	-	4	15
% Articulated Trucks	1.1	0.5	0.0	-	-	0.6	0.0	2.2	1.8	-	-	2.1	1.9	0.0	6.3	-	-	1.7	3.4	0.0	1.9	-	-	2.0	1.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

Turning Movement Peak Hour Data (11:45 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:45 AM	36	62	18	0	0	116	4	75	20	0	0	99	19	13	6	0	0	38	24	12	24	0	0	60	313
12:00 PM	25	84	18	0	2	127	3	68	20	0	0	91	16	13	4	0	3	33	24	20	23	0	0	67	318
12:15 PM	41	71	16	0	0	128	6	96	27	0	0	129	14	11	2	0	2	27	20	14	42	0	0	76	360
12:30 PM	31	80	11	0	0	122	6	73	16	0	2	95	16	19	4	0	0	39	37	13	29	0	0	79	335
Total	133	297	63	0	2	493	19	312	83	0	2	414	65	56	16	0	5	137	105	59	118	0	0	282	1326
Approach %	27.0	60.2	12.8	0.0	-	-	4.6	75.4	20.0	0.0	-	-	47.4	40.9	11.7	0.0	-	-	37.2	20.9	41.8	0.0	-	-	-
Total %	10.0	22.4	4.8	0.0	-	37.2	1.4	23.5	6.3	0.0	-	31.2	4.9	4.2	1.2	0.0	-	10.3	7.9	4.4	8.9	0.0	-	21.3	-
PHF	0.811	0.884	0.875	0.000	-	0.963	0.792	0.813	0.769	0.000	-	0.802	0.855	0.737	0.667	0.000	-	0.878	0.709	0.738	0.702	0.000	-	0.892	0.921
Motorcycles	1	0	0	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	4
% Motorcycles	0.8	0.0	0.0	-	-	0.2	0.0	0.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	-	-	0.4	0.3
Cars & Light Goods	130	291	62	0	-	483	17	300	82	0	-	399	63	53	15	0	-	131	101	56	115	0	-	272	1285
% Cars & Light Goods	97.7	98.0	98.4	-	-	98.0	89.5	96.2	98.8	-	-	96.4	96.9	94.6	93.8	-	-	95.6	96.2	94.9	97.5	-	-	96.5	96.9
Buses	0	0	0	0	-	0	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	1.5	0.0	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	2	4	1	0	-	7	2	5	1	0	-	8	1	2	1	0	-	4	2	2	0	0	-	4	23
% Single-Unit Trucks	1.5	1.3	1.6	-	-	1.4	10.5	1.6	1.2	-	-	1.9	1.5	3.6	6.3	-	-	2.9	1.9	3.4	0.0	-	-	1.4	1.7
Articulated Trucks	0	2	0	0	-	2	0	4	0	0	-	4	0	1	0	0	-	1	2	1	2	0	-	5	12
% Articulated Trucks	0.0	0.7	0.0	-	-	0.4	0.0	1.3	0.0	-	-	1.0	0.0	1.8	0.0	-	-	0.7	1.9	1.7	1.7	-	-	1.8	0.9
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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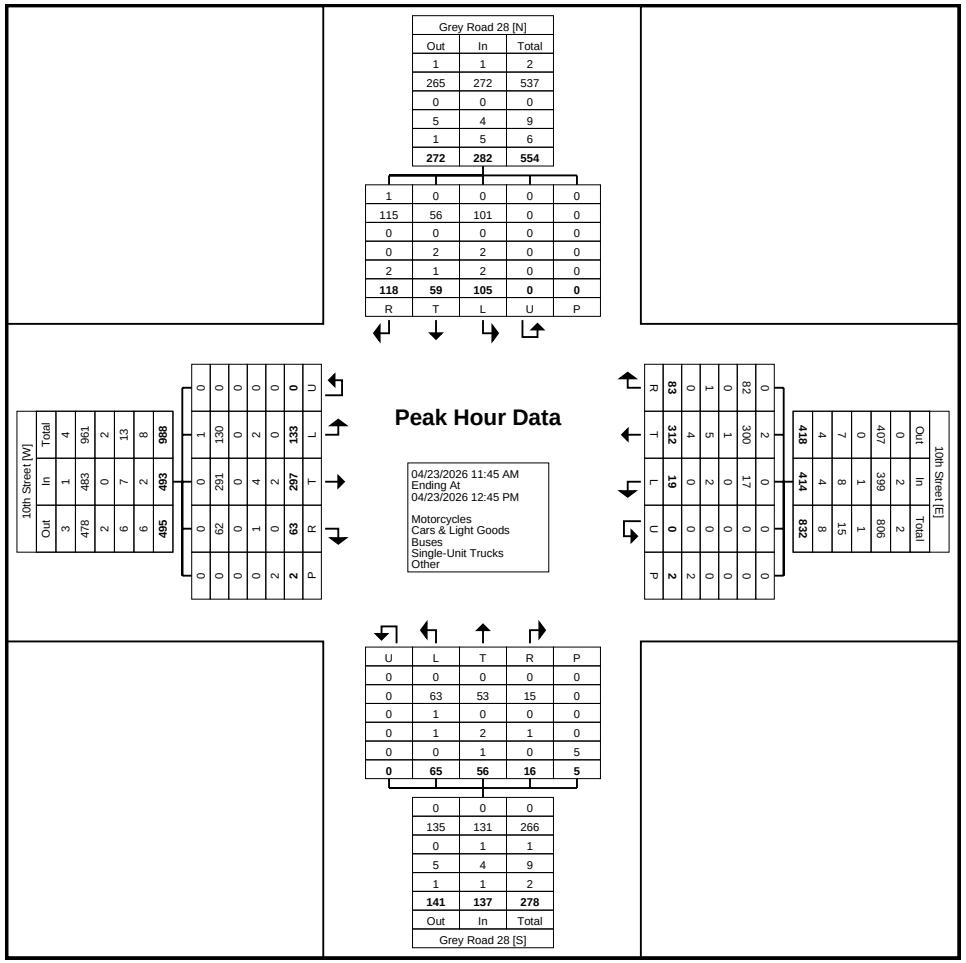
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026

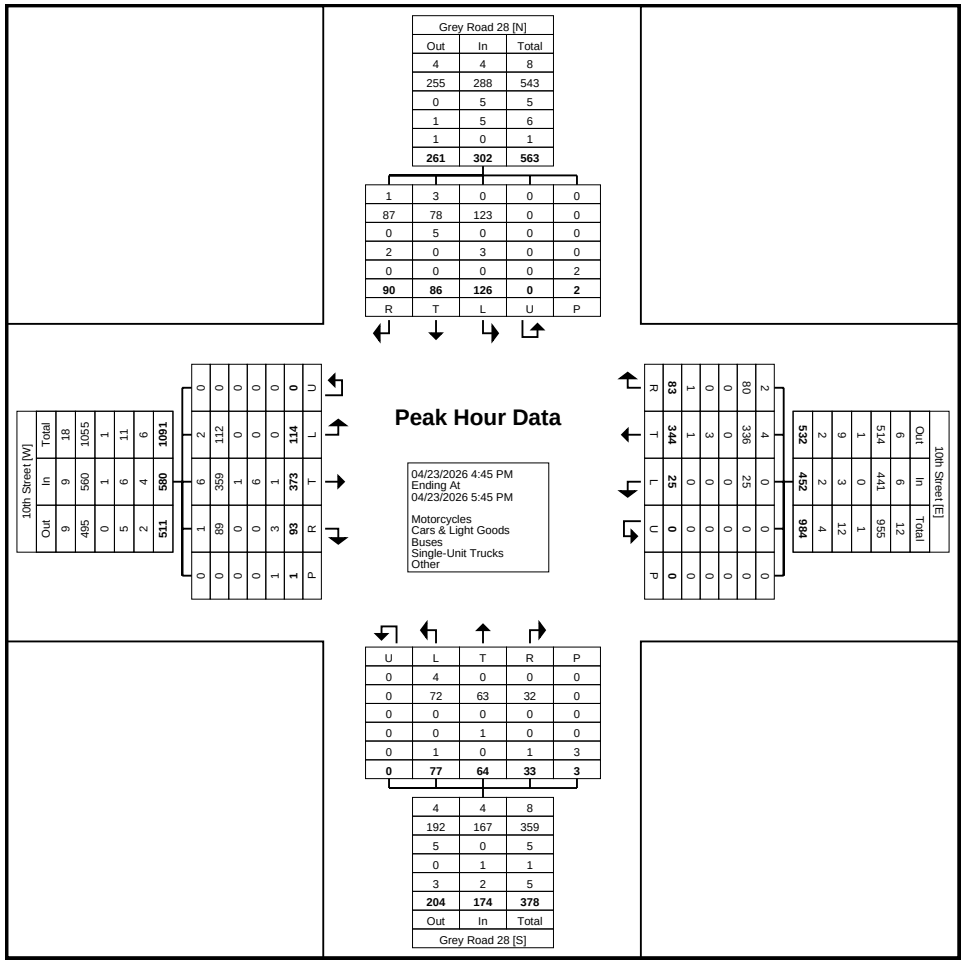
Turning Movement Peak Hour Data (4:45 PM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	30	92	20	0	0	142	7	106	19	0	0	132	17	15	13	0	0	45	32	23	20	0	1	75	394
5:00 PM	32	84	28	0	1	144	4	71	24	0	0	99	26	14	6	0	1	46	31	22	25	0	1	78	367
5:15 PM	28	105	24	0	0	157	4	83	19	0	0	106	18	20	8	0	0	46	28	25	30	0	0	83	392
5:30 PM	24	92	21	0	0	137	10	84	21	0	0	115	16	15	6	0	2	37	35	16	15	0	0	66	355
Total	114	373	93	0	1	580	25	344	83	0	0	452	77	64	33	0	3	174	126	86	90	0	2	302	1508
Approach %	19.7	64.3	16.0	0.0	-	-	5.5	76.1	18.4	0.0	-	-	44.3	36.8	19.0	0.0	-	-	41.7	28.5	29.8	0.0	-	-	-
Total %	7.6	24.7	6.2	0.0	-	38.5	1.7	22.8	5.5	0.0	-	30.0	5.1	4.2	2.2	0.0	-	11.5	8.4	5.7	6.0	0.0	-	20.0	-
PHF	0.891	0.888	0.830	0.000	-	0.924	0.625	0.811	0.865	0.000	-	0.856	0.740	0.800	0.635	0.000	-	0.946	0.900	0.860	0.750	0.000	-	0.910	0.957
Motorcycles	2	6	1	0	-	9	0	4	2	0	-	6	4	0	0	0	-	4	0	3	1	0	-	4	23
% Motorcycles	1.8	1.6	1.1	-	-	1.6	0.0	1.2	2.4	-	-	1.3	5.2	0.0	0.0	-	-	2.3	0.0	3.5	1.1	-	-	1.3	1.5
Cars & Light Goods	112	359	89	0	-	560	25	336	80	0	-	441	72	63	32	0	-	167	123	78	87	0	-	288	1456
% Cars & Light Goods	98.2	96.2	95.7	-	-	96.6	100.0	97.7	96.4	-	-	97.6	93.5	98.4	97.0	-	-	96.0	97.6	90.7	96.7	-	-	95.4	96.6
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	5	0	0	-	5	6
% Buses	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	5.8	0.0	-	-	1.7	0.4
Single-Unit Trucks	0	6	0	0	-	6	0	3	0	0	-	3	0	1	0	0	-	1	3	0	2	0	-	5	15
% Single-Unit Trucks	0.0	1.6	0.0	-	-	1.0	0.0	0.9	0.0	-	-	0.7	0.0	1.6	0.0	-	-	0.6	2.4	0.0	2.2	-	-	1.7	1.0
Articulated Trucks	0	1	0	0	-	1	0	1	1	0	-	2	1	0	1	0	-	2	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.3	1.2	-	-	0.4	1.3	0.0	3.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	3.2	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street
Site Code: 260040
Start Date: 04/23/2026



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

Turning Movement Data

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	31	70	18	0	0	119	8	74	18	0	0	100	17	14	6	0	0	37	37	18	24	0	0	79	335
11:15 AM	28	67	15	0	0	110	9	66	26	0	0	101	21	20	4	0	0	45	31	20	24	0	0	75	331
11:30 AM	45	91	19	0	0	155	6	70	15	0	0	91	18	11	11	0	0	40	38	16	28	0	1	82	368
11:45 AM	37	79	24	0	0	140	4	101	29	0	0	134	19	22	9	0	0	50	30	19	21	0	0	70	394
Hourly Total	141	307	76	0	0	524	27	311	88	0	0	426	75	67	30	0	0	172	136	73	97	0	1	306	1428
12:00 PM	27	91	22	0	2	140	3	83	17	0	0	103	21	16	5	0	0	42	46	14	27	0	1	87	372
12:15 PM	21	87	17	0	0	125	7	88	35	0	0	130	9	15	4	0	0	28	30	24	32	0	0	86	369
12:30 PM	28	82	21	0	0	131	2	75	17	0	0	94	24	9	3	0	0	36	39	19	26	0	0	84	345
12:45 PM	23	91	18	0	0	132	6	77	28	0	0	111	19	24	8	0	0	51	31	11	23	0	0	65	359
Hourly Total	99	351	78	0	2	528	18	323	97	0	0	438	73	64	20	0	0	157	146	68	108	0	1	322	1445
1:00 PM	38	97	22	0	0	157	6	75	26	0	0	107	12	14	4	0	1	30	47	20	21	0	0	88	382
1:15 PM	32	77	12	0	0	121	7	86	33	0	0	126	14	19	7	0	0	40	31	18	27	0	0	76	363
1:30 PM	37	63	13	0	0	113	10	73	31	0	0	114	19	12	8	0	0	39	34	15	21	0	0	70	336
1:45 PM	27	74	20	0	0	121	4	80	32	0	2	116	17	14	11	0	1	42	34	11	30	0	0	75	354
Hourly Total	134	311	67	0	0	512	27	314	122	0	2	463	62	59	30	0	2	151	146	64	99	0	0	309	1435
2:00 PM	38	98	17	0	1	153	11	68	24	0	0	103	15	11	8	0	1	34	36	10	28	0	0	74	364
2:15 PM	26	92	5	0	0	123	4	64	28	0	0	96	11	20	1	0	0	32	27	20	21	0	1	68	319
2:30 PM	34	79	5	0	0	118	6	60	27	0	2	93	13	16	7	0	0	36	30	15	28	0	4	73	320
2:45 PM	32	83	21	0	3	136	8	86	29	0	0	123	12	11	4	0	0	27	29	12	16	0	2	57	343
Hourly Total	130	352	48	0	4	530	29	278	108	0	2	415	51	58	20	0	1	129	122	57	93	0	7	272	1346
Grand Total	504	1321	269	0	6	2094	101	1226	415	0	4	1742	261	248	100	0	3	609	550	262	397	0	9	1209	5654
Approach %	24.1	63.1	12.8	0.0	-	-	5.8	70.4	23.8	0.0	-	-	42.9	40.7	16.4	0.0	-	-	45.5	21.7	32.8	0.0	-	-	-
Total %	8.9	23.4	4.8	0.0	-	37.0	1.8	21.7	7.3	0.0	-	30.8	4.6	4.4	1.8	0.0	-	10.8	9.7	4.6	7.0	0.0	-	21.4	-
Motorcycles	1	1	0	0	-	2	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	5
% Motorcycles	0.2	0.1	0.0	-	-	0.1	0.0	0.2	0.0	-	-	0.1	0.4	0.0	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	502	1317	268	0	-	2087	101	1220	410	0	-	1731	260	247	99	0	-	606	548	260	397	0	-	1205	5629
% Cars & Light Goods	99.6	99.7	99.6	-	-	99.7	100.0	99.5	98.8	-	-	99.4	99.6	99.6	99.0	-	-	99.5	99.6	99.2	100.0	-	-	99.7	99.6
Buses	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.2	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	0	-	2	0	3	4	0	-	7	0	1	1	0	-	2	1	0	0	0	-	1	12
% Single-Unit Trucks	0.0	0.2	0.0	-	-	0.1	0.0	0.2	1.0	-	-	0.4	0.0	0.4	1.0	-	-	0.3	0.2	0.0	0.0	-	-	0.1	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1	2	0	0	-	3	4
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.2	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.2	0.8	0.0	-	-	0.2	0.1

Bicycles on Road	0	0	1	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.4	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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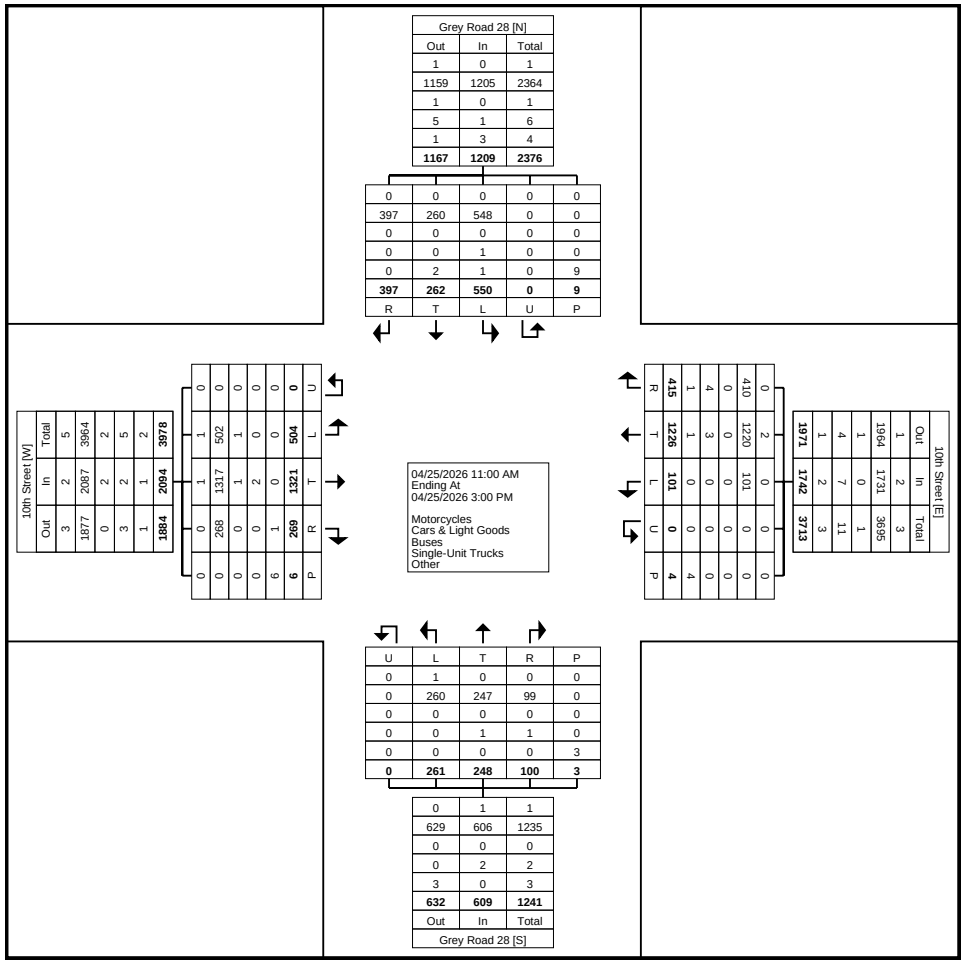
Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026


Grey Road 28 [N]
Out In Total
1 0 1
1159 1205 2364
1 0 1
5 1 6
1 3 4
1167 1209 2376
0 0 0 0 0
397 260 548 0 0
0 0 0 0 0
0 0 1 0 0
0 2 1 0 9
397 262 550 0 9
R T L U P
10th Street [W]
Out In Total
3 2 5
1877 2087 3964
0 2 2
3 2 5
1 1 2
1884 2094 3978
0 1 1 0 0
0 0 1 0 0
0 0 0 0 0
0 0 1 0 0
0 0 0 0 0
0 0 1 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026

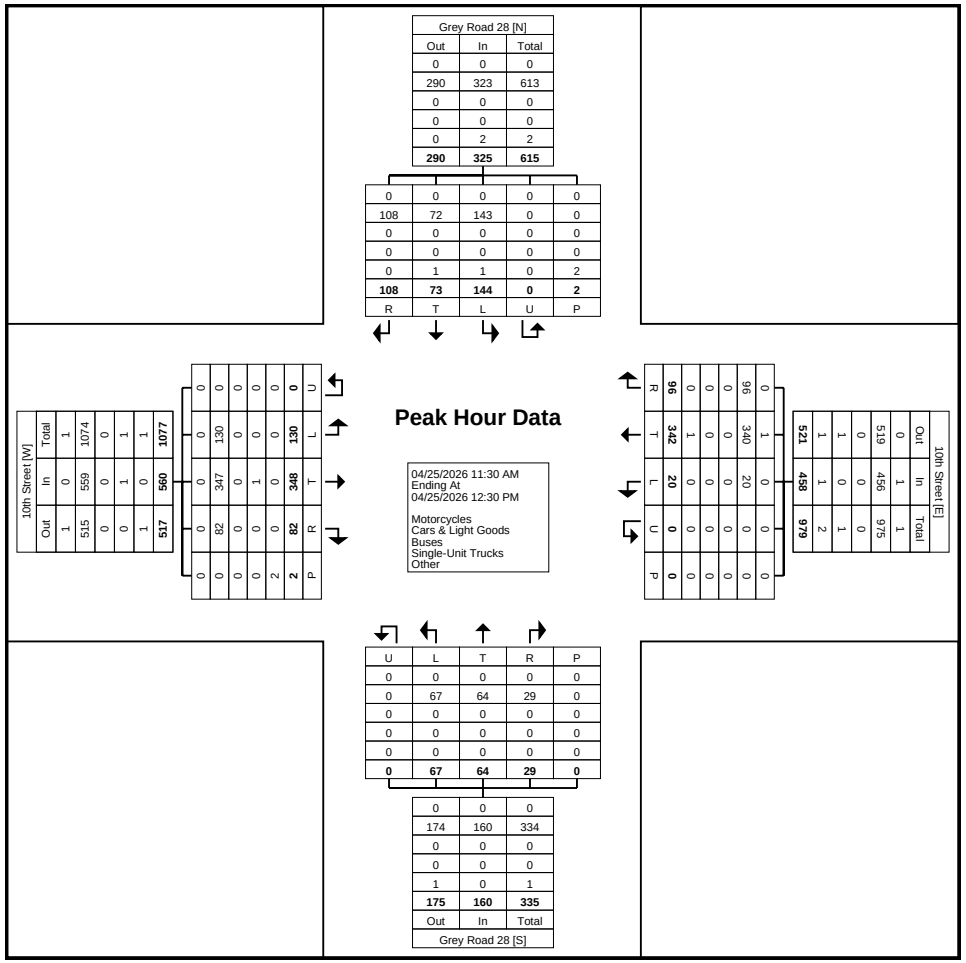
Turning Movement Peak Hour Data (11:30 AM)

Start Time	10th Street Eastbound						10th Street Westbound						Grey Road 28 Northbound						Grey Road 28 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:30 AM	45	91	19	0	0	155	6	70	15	0	0	91	18	11	11	0	0	40	38	16	28	0	1	82	368
11:45 AM	37	79	24	0	0	140	4	101	29	0	0	134	19	22	9	0	0	50	30	19	21	0	0	70	394
12:00 PM	27	91	22	0	2	140	3	83	17	0	0	103	21	16	5	0	0	42	46	14	27	0	1	87	372
12:15 PM	21	87	17	0	0	125	7	88	35	0	0	130	9	15	4	0	0	28	30	24	32	0	0	86	369
Total	130	348	82	0	2	560	20	342	96	0	0	458	67	64	29	0	0	160	144	73	108	0	2	325	1503
Approach %	23.2	62.1	14.6	0.0	-	-	4.4	74.7	21.0	0.0	-	-	41.9	40.0	18.1	0.0	-	-	44.3	22.5	33.2	0.0	-	-	-
Total %	8.6	23.2	5.5	0.0	-	37.3	1.3	22.8	6.4	0.0	-	30.5	4.5	4.3	1.9	0.0	-	10.6	9.6	4.9	7.2	0.0	-	21.6	-
PHF	0.722	0.956	0.854	0.000	-	0.903	0.714	0.847	0.686	0.000	-	0.854	0.798	0.727	0.659	0.000	-	0.800	0.783	0.760	0.844	0.000	-	0.934	0.954
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	130	347	82	0	-	559	20	340	96	0	-	456	67	64	29	0	-	160	143	72	108	0	-	323	1498
% Cars & Light Goods	100.0	99.7	100.0	-	-	99.8	100.0	99.4	100.0	-	-	99.6	100.0	100.0	100.0	-	-	100.0	99.3	98.6	100.0	-	-	99.4	99.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7	1.4	0.0	-	-	0.6	0.1
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Grey Road 28 & 10th Street - Saturday
Site Code: 260040
Start Date: 04/25/2026



Turning Movement Peak Hour Data Plot (11:30 AM)

20. EPAC300 PROGRAM LOG

Prepared By .....: Joel Merswolke_ Date: Jan 30 2013

Approved By.....: _____ Date: ____ / ____ / ____

Intersection Name.....: Hanover Grey rd 28 @ Grey rd 4_

UTILITIES - ACCESS

Access Code .....: _____ Codes: Four Digits (0000 - 9999)

PHASE DATA - VEHICLE TIMINGS

Basic Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green.....:	5	30	___	10	10	15	10	15	___	___	___	___	___	___	___	___
Passage Time .....:	40	50	___	30	40	50	40	50	___	___	___	___	___	___	___	___
Maximum No 1 .....:	25	35	___	18	25	35	25	35	___	___	___	___	___	___	___	___
Maximum No 2 .....:	30	50	___	18	30	50	30	50	___	___	___	___	___	___	___	___
Yellow Change .....:	3.0	5.0	___	4.0	4.0	4.0	4.0	4.0	___	___	___	___	___	___	___	___
Red Clearance .....:	___	2.0	___	2.0	2.0	2.0	1.0	2.0	___	___	___	___	___	___	___	___

Density Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seconds/Actuation .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Maximum Initial .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Time B4 Reduction.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cars B4 Reduction .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Time To Reduce.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Minimum Gap.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

PHASE DATA - PEDESTRIAN TIMINGS & CONTROL

Pedestrian Times Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk .....:	___	15	___	13	___	7	___	7	___	___	___	___	___	___	___	___
Pedestrian Clearance.....:	___	5	___	5	___	8	___	8	___	___	___	___	___	___	___	___

Pedestrian Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Walk.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extended Pedestrian Clear .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Act Rest In Walk.....:	___		___	___	___	___	___	___	___	___	___	___	___	___	___	___

Pedestrian Control Entry: “1” = Yes & “0” = No

PHASE DATA - VEHICLE CONTROL

Veh Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Non-Lock Memory.....:	1	1	1	1	___	___	___		___	___	___	___	___	___	___	___
Dual Entry.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Last Car Passage.....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Conditional Service .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Simultaneous Gap .....:	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Vehicle Control Entry: “1” = Yes & “0” = No

PHASE DATA - GENERAL CONTROL

General Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initialization ..... :	1	3	1	1	0	0	0	0	___	___	___	___	___	___	___	___
Non-Act Response ..... :	___	1	___	2	___	1	___	2	___	___	___	___	___	___	___	___
Vehicle Recall ..... :	___		___		___	___	___	___	___	___	___	___	___	___	___	___
Pedestrian Recall ..... :	___		___		___	___	___	___	___	___	___	___	___	___	___	___
Recall Delay ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Initialization ..... :	NONE	INACTIVE	RED	YELLOW	GREEN
Non-Act Response ..... :	NONE	TO NA I	TO NA II	TO BOTH	-----
Vehicle Recall ..... :	NONE	1 CALL	MINIMUM	MAXIMUM	SOFT
Pedestrian Recall ..... :	NONE	1 CALL	PED	NA	NA+

PHASE DATA - SEQUENCE CONTROL

Sequence Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Omit ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase - Yellow ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Omit Call..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	01 TO 16 (# - PHASE)
Phase Omit ..... :	NONE	Phase Is Omitted By # - Phase On
Phase - Yellow ..... :	NONE	Phase Yellow Is Omitted By # - Phase Yellow
Phase Omit Call ..... :	NONE	When Omitted, Dets Call # Phase

PHASE DATA - VEH DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Assigned Phase ..... :	_1_	_2_	_3_	_4_	_5_	_6_	_7_	_8_	___	___	___	___	___	___	___	___
Operation Mode ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Control Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode ..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - VEH DETECTOR CONTROL

Control Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Control Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Assigned Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - PED DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8
Assigned Phase ..... :	1	_2_	_3_	_4_	_5_	_6_	_7_	_8_
Operation Mode..... :	_1_	_1_	_1_	_1_	_1_	_1_	_1_	_1_
Switch..... :	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

PHASE DATA - SPC DETECTOR CONTROL

Control Detector:	1	2	3	4	5	6	7	8
Assigned Phase ..... :	___	___	___	___	___	___	___	___
Operation Mode..... :	___	___	___	___	___	___	___	___
Switch..... :	___	___	___	___	___	___	___	___
Extend Time ..... :	___	___	___	___	___	___	___	___
Delay Time ..... :	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Operation Mode..... :	NORM VEH	NORM PED	ONE CALL	ST BAR A	ST BAR B
Assigned Phase ..... :	NONE	Detector Is Assigned To # - Phase			
Switch..... :	NONE	Detector Is Switched To # - Phase When The Assigned Phase Is Yellow / Red & # - Phase Is Green			

UNIT DATA - STARTUP & MISC

Startup Time..... :	__5_	Time In Seconds
Startup State ..... :	____	0-Flash 1-Red
Red Revert..... :	_40_	Time In Tenth Second
Auto Pedestrian Clear ..... :	____	0-No 1-Yes
Stop Time Reset ..... :	____	0-No 1-Yes
Alternate Sequence..... :	____	00-15 Alt Sequence ##

UNIT DATA - AUTOMATIC FLASH

TST A = Flash ..... : ____ 0 - NO / 1 - YES For TEST A Input For An Automatic Flash Input

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Alt Flash ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Entry Phase..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Flash Exit Phase ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	
Flash ..... :	NO	RED	YEL	All = 0 Then Voltage Monitor Flash
Alt Flash ..... :	NO	YES	--	Used To Provide Wig-Wag Flashing
Flash Entry Phase..... :	NO	YES	--	Phase(s) To Precede Automatic Flash
Flash Exit Phase ..... :	NO	YES	--	Phase(s) To Follow Automatic Flash

UNIT DATA – OVERLAP

Control Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
OL A Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL B Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL C Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL D Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL E Phase(s)..... :	1	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL F Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL G Phase(s) ..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
OL H Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL I Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL J Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL K Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL L Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL M Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL N Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL O Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
OL P Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes: 0 – NO 1 - YES Phase Is Included In Overlap

UNIT DATA - OVERLAP

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OL A Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL B Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL C Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL D Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL E Channel(s)....:	1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL F Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL G Channel(s) ....:	__	__	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL H Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL I Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL J Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL K Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL L Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL M Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL N Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL O Channel(s) ....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
OL P Channel(s)....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes: 0 – NO 1 - YES Overlap Outputs To Channel

Overlap Controls MUST First Be Assigned To Channels. Once Assigned, They Must Also Be Assigned To Hardware Output Pins.

UNIT DATA – OVERLAP

Control :	TRL GRN	TRL YEL	TRL RED	-GRN/YEL	+GRN
Overlap A ....:	____	____	____	____	____
Overlap B ....:	____	____	____	____	____
Overlap C ....:	____	____	____	____	____
Overlap D ....:	____	____	____	____	____
Overlap E ....:	____	____	____	____	____
Overlap F....:	____	____	____	____	____
Overlap G....:	____	____	____	____	____
Overlap H ....:	____	____	____	____	____
Overlap I....:	____	____	____	____	____
Overlap J ....:	____	____	____	____	____
Overlap K ....:	____	____	____	____	____
Overlap L....:	____	____	____	____	____
Overlap M....:	____	____	____	____	____
Overlap N ....:	____	____	____	____	____
Overlap O ....:	____	____	____	____	____
Overlap P ....:	____	____	____	____	____

Codes ....:

TRL GRN....: Time In Seconds
TRL YEL....: Time In Tenth Seconds
TRL RED....: Time In Tenth Seconds
-GRN / YEL ....:
+GRN ....:

UNIT DATA - RING STRUCTURE

Control Channel:	RING	NXT	CONCUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1 ....:	1	2		__	__	__	__	1	1	__	__	__	__	__	__	__	__	__	__
Phase 2 ....:	1	3		__	__	__	__	1	1	__	__	__	__	__	__	__	__	__	__
Phase 3 ....:	1	4		__	__	__	__	__	__	1	1	__	__	__	__	__	__	__	__
Phase 4 ....:	1	1		__	__	__	__	__	__	1	1	__	__	__	__	__	__	__	__
Phase 5 ....:	2	6		1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 6 ....:	2	7		1	1	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 7 ....:	2	8		__	__	1	1	__	__	__	__	__	__	__	__	__	__	__	__
Phase 8 ....:	2	5		__	__	1	1	__	__	__	__	__	__	__	__	__	__	__	__
Phase 11 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 12 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 13 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 14 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 15 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Phase 16 ....:	___	___		__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes .....:

RING	Ring Number For Phase (1-4)
PH NXT	Phase Next In Ring (1-16)
CONCUR PH	Phase(s) To Run Concurrent (0-NO / 1-YES)

UNIT DATA - RING STRUCTURE

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ph 01 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 01 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 02 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 02 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 03 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 03 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 04 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 04 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 05 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 05 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 06 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 06 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 07 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 07 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 08 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 08 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 09 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 09 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 10 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 10 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

UNIT DATA - RING STRUCTURE

Control Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ph 12 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 12 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 13 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 13 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 14 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 14 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 15 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 15 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 16 Veh Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Ph 16 Ped Channel(s).....:	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

Codes: 0 – NO 1 - YES Phase Vehicle / Pedest Outputs To Channel

Phase Controls MUST First Be Assigned To Channels. Once Assigned, They Must Also Be Assigned To Hardware Output Pins.

UNIT DATA - ALTERNATE SEQUENCE

Control	REVERSE PHASES							
Alternate Sequence 00..... :	NONE							
Alternate Sequence 01..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 02..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 03..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 04..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 05..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 06..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 07..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 08..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 09..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 10..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 11..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 12..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 13..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 14..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__
Alternate Sequence 15..... :	__ / __	__ /__	__ /__	__ /__	__ / __	__ /__	__ /__	__ /__

Reverse Phases Must Be In The Same Ring And Next To Each Other

UNIT DATA - PORT 1

ADDRESS	DESCRIPTION	PRES	M40
00	T&F BIU # 1 TS2 ..... :	___	___
01	T&F BIU # 2 TS2 ..... :	___	___
02	T&F BIU # 3 TS2 ..... :	___	___
03	T&F BIU # 4 TS2 ..... :	___	___
04	T&F BIU # 5 RESERVED ..... :	___	___
05	T&F BIU # 6 RESERVED ..... :	___	___
06	T&F BIU # 7 MFG USE..... :	___	___
07	T&F BIU # 8 MFG USE..... :	___	___
08	DET BIU # 1 TS2..... :	___	___
09	DET BIU # 2 TS2..... :	___	___
10	DET BIU # 3 TS2..... :	___	___
11	DET BIU # 4 TS2..... :	___	___
12	DET BIU # 5 RESERVED..... :	___	___
13	DET BIU # 6 RESERVED..... :	___	___
14	DET BIU # 7 MFG USE ..... :	___	___
15	DET BIU # 8 MFG USE ..... :	___	___
16	MALFUNCTION UNIT ..... :	___	___
17	DIAGNOSTIC (MSG 30)..... :	___	___
18	CONTROLLER UNIT..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___
___	_____..... :	___	___

PRES: 0-NO / 1-YES; this Port 1 device is present.

M40: 0-NO / 1-YES; this Port 1 device is to receive Message 40 to query same for peer to peer messages.

UNIT DATA - I/O MISC

Ring I/O ..... Ring:	1	2	3	4	
Input Response ..... :	____	____	____	____	Ring # (1-4)
Output Select ..... :	____	____	____	____	Ring # (1-4)

I/O Modes ..... :	INPUT	OUTPUT
"ABC" Connector ..... :	____	____
"D" Connector ..... :	____	____

UNIT DATA - SIGNAL DRIVER OUTPUTS

SIGNAL DRIVER GROUP	CHN	HARDWARE OUTPUT PIN	SET	Reference SET ## Function
_____	01	_____	____	01 - Ph 1 Red/Yel/Grn
_____	02	_____	____	02 - Ph 2 Red/Yel/Grn
_____	03	_____	____	03 - Ph 3 Red/Yel/Grn
_____	04	_____	____	04 - Ph 4 Red/Yel/Grn
_____	05	_____	____	05 - Ph 5 Red/Yel/Grn
_____	06	_____	____	06 - Ph 6 Red/Yel/Grn
_____	07	_____	____	07 - Ph 7 Red/Yel/Grn
_____	08	_____	____	08 - Ph 8 Red/Yel/Grn
_____	09	_____	____	09 - Ph 1 DW/PC/WK
_____	10	_____	____	10 - Ph 2 DW/PC/WK
_____	11	_____	____	11 - Ph 3 DW/PC/WK
_____	12	_____	____	12 - Ph 4 DW/PC/WK
_____	13	_____	____	13 - Ph 5 DW/PC/WK
_____	14	_____	____	14 - Ph 6 DW/PC/WK
_____	15	_____	____	15 - Ph 7 DW/PC/WK
_____	16	_____	____	16 - Ph 8 DW/PC/WK
_____	17	_____	____	17 - OL A Red/Yel/Grn
_____	18	_____	____	18 - OL B Red/Yel/Grn
_____	19	_____	____	19 - OL C Red/Yel/Grn
_____	20	_____	____	20 - OL D Red/Yel/Grn
_____	21	_____	____	21 - Ph 1 On/Nxt/Chk
_____	22	_____	____	22 - Ph 2 On/Nxt/Chk
_____	23	_____	____	23 - Ph 3 On/Nxt/Chk
_____	24	_____	____	24 - Ph 4 On/Nxt/Chk
	X			25 - Ph 5 On/Nxt/Chk
	X			26 - Ph 6 On/Nxt/Chk
	X			27 - Ph 7 On/Nxt/Chk
	X			28 - Ph 8 On/Nxt/Chk

SIGNAL DRIVER GROUP column is automatic & indicates the assigned Channels in Ring Structure & Overlap database.
CHN column is a list of the available channels 01-24 in numerical order.
HARDWARE OUTPUT PIN column is automatic & indicates the assigned SET entered here.
SET column is for user entry of the hardware outputs to receive a channels outputs.

COORD DATA – MODE

Control		Codes: 0	1	2	3	4	5
Operation ..... :	____	FRE	AUT	MAN	---	---	---
Mode ..... :	____	PRM	YLD	PYL	POM	SOM	FAC
Maximum..... :	____	INH	MX1	MX2	---	---	---
Correction..... :	____	DW	MDW	SWY	SW+	---	---
Offset (?? Of Green) ..... :	____	BEGIN	END OF GREEN				
Force..... :	____	PLAN	CYCLE TIME				
Max Dwell Time..... :	____	Time In Seconds					
Yield Period..... :	____	Time In Seconds					
Manual Pattern (Dial/Split/Offset)	__/__/__						

COORD DATA - TIMING PLANS

Control Timing Plan:	D1/S1	D1/S2	D1/S3	D1/S4	D2/S1	D2/S2	D2/S3	D2/S4
Cycle Length ..... :	____	____	____	____	____	____	____	____
Phase 01 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 02 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 03 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 04 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 05 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 06 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 07 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 08 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 09 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 10 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 11 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 12 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 13 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 14 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 15 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 16 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Offset 1..... :	____	____	____	____	____	____	____	____
Offset 1 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 1 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2..... :	____	____	____	____	____	____	____	____
Offset 2 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 2 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3..... :	____	____	____	____	____	____	____	____
Offset 3 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 3 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____

COORD DATA - TIMING PLANS

Control Timing Plan:	D3/S1	D3/S2	D3/S3	D3/S4	D4/S1	D4/S2	D4/S3	D4/S4
Cycle Length ..... :	____	____	____	____	____	____	____	____
Phase 01 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 02 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 03 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 04 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 05 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 06 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 07 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 08 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 09 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 10 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 11 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 12 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 13 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 14 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 15 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Phase 16 Time/Mode ..... :	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __	___ / __
Offset 1 Time..... :	____	____	____	____	____	____	____	____
Offset 1 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 1 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 1 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2..... :	____	____	____	____	____	____	____	____
Offset 2 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 2 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 2 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3..... :	____	____	____	____	____	____	____	____
Offset 3 Alt Sequence ..... :	____	____	____	____	____	____	____	____
Offset 3 Pattern Mode ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 2 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 3 Lag ..... :	____	____	____	____	____	____	____	____
Offset 3 Ring 4 Lag ..... :	____	____	____	____	____	____	____	____

Codes ..... :

Phase Mode ..... :	0-Actuated	1-Coord Phase	2-Min Rec	3-Max Rec
	4-Ped Rec	5-Max+Ped Recall	6-Phase Omitted	7-Dual Coord Phase
Pattern Mode..... :	00-15 (Unit Data Has Definition)			
Alternate Sequence..... :	0-Normal / 1-Perm / 2-Yield / 3-Perm Yield / 4-Perm Omit / 5-Seq Omit / 6-Full Act			
R# LAG..... :	Time In Seconds Of The Ring Offset To Lcl Cycle 0 When Not Barrier Locked To Ring 1			

TIME BASE DATA – MISCELLANEOUS

DST: BEGIN: MONTH _02_ WEEK _03_
DST: END: MONTH _11_ WEEK _01_

DST: Daylight Savings Time
Month = 01 to 12 (Begin < End)
Week = 1 to 5 (5 = Last Week)

COORD CYCLE ZERO ___ : ___

CYCLE ZERO: Time (HH:MM) Sets Reference For Coord Sync
00:00 = Event Time / Other = That HH:MM

EQUATED DAY: (DEFINED DAY = DAY)

____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____
____	=	____	____	____	____	____	____	____

DAY EQUATES: Care Must Be Used To Insure Days Are Not Equated To Undefined Days Or Days That Are Equated To Other Days. Result Will Be A Day Without Events To Run.

TIME BASE DATA - TRAFFIC EVENTS

DAY	TIME		TRAFFIC EVENT FUNCTIONS																
PDAY	HH : MM	PATTERN	P	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
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___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
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___	___ : ___	__ / __ / __	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

REFERENCE DATA:
PDAY - 01-99 Program Day
HH:MM - 24 Hour Clock
PATTERN: (D / S / O)
Flash - 5 / 5 / 0
Free - 0 / 0 / 4
MAX 2 & OMITS: Call Free, Set Pattern To 0 / 0 / 0

TIME BASE DATA - AUXILIARY EVENTS

DAY PDAY	TIME HH : MM	AUXILIARY EVENT FUNCTIONS A: 1 2 3	D: 1 2 3	DIM	S. 1 2 3 4 5 6 7 8
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
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___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___
___	___ : ___	___ ___ ___	___ ___ ___	___	___ ___ ___ ___ ___ ___ ___ ___

REFERENCE DATA:
- PDAY - 01-99 Program Day
- HH:MM - 24 Hour Clock
- A.123 - Auxiliary Output
- D.123 - Detector
- 1 - Det Diag Vaule
- 2 - Enables Report
- 3 - Rep Multiplier
- DIM - Dimming Enable
- S.1>8 - Special Function Output
- ALL - 0-OFF / 1-ON

TIME BASE DATA - TIME OF YEAR EVENTS

DATE MM / DD / YY	SPECIAL DAY	SPECIAL WEEK	DATE MM / DD / YY	SPECIAL DAY	SPECIAL WEEK
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___
___ / ___ / ___	___	___	___ / ___ / ___	___	___

Reference Data:
- Special Day - Any Program Day 00-99
- Special Week -
  - Week 0 = Program Day 01-07
  - Week 1 = Program Day 11-17
  - Week 2 = Program Day 21-27
  - | | |
  - Week 9 = Program Day 91-97

TIME BASE DATA - DIMMING

DIM OUTPUTS Channel:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Channel Red ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Channel Yellow ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Channel Green..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__
Dim Alternate ..... :	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__	__

CODES: 0-NO DIMMING / 1-DIMMING

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 01 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MAX # 2 ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 01 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PHS OMIT ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 01 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED OMIT..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MAX RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 09 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 MIN RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
CODES: 0-OFF / 1-ON																
PHS 01 PED RECALL..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED RECALL..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

TIME BASE DATA - PHASE FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHS 03 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 01 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 02 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 03 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 04 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 05 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 06 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 07 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 08 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

PHS 09 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 10 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 11 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 12 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 13 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 14 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 15 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
PHS 16 PED RECALL ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

CODES: 0-OFF / 1-ON

TIME BASE DATA - SPECIAL FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8
Special Function 1..... :	___	___	___	___	___	___	___	___
Special Function 2..... :	___	___	___	___	___	___	___	___
Special Function 3..... :	___	___	___	___	___	___	___	___
Special Function 4..... :	___	___	___	___	___	___	___	___
Special Function 5..... :	___	___	___	___	___	___	___	___
Special Function 6..... :	___	___	___	___	___	___	___	___
Special Function 7..... :	___	___	___	___	___	___	___	___
Special Function 8..... :	___	___	___	___	___	___	___	___
PAS3+MAX3=VEH 33-48 TIME:	___	___	___	___	___	___	___	___
PAS4+MAX4=VEH 49-64 TIME:	___	___	___	___	___	___	___	___
PAS5+MAX5=SPC+PED TIME:	___	___	___	___	___	___	___	___
DYNA MAX3=VEH 33-48 TIME:	___	___	___	___	___	___	___	___
DYNA MAX4=VEH 49-64 TIME:	___	___	___	___	___	___	___	___
DYNA MAX5=SPC+PED TIME:	___	___	___	___	___	___	___	___
DISABLE PROT/PERM OMITS:	___	___	___	___	___	___	___	___
PHASE 2 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
PHASE 4 SIGN CONTROL..... :	___	___	___	___	___	___	___	___

CODES:
0-OFF
1-ON

TIME BASE DATA - SPECIAL FUNCTION MAPPING

FUNCTION NAME	1	2	3	4	5	6	7	8
PHASE 6 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
PHASE 8 SIGN CONTROL..... :	___	___	___	___	___	___	___	___
TX DIAMOND - 4 PHASE ..... :	___	___	___	___	___	___	___	___
TX DIAMOND - 3 PHASE ..... :	___	___	___	___	___	___	___	___
TX DIAMOND -SEPARATE .... :	___	___	___	___	___	___	___	___
QUE1/LVL1 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE1/LVL2 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE2/LVL1 CONTROLS ..... :	___	___	___	___	___	___	___	___
QUE2/LVL2 CONTROLS ..... :	___	___	___	___	___	___	___	___
AS8-15=OLI-P FL G PHS ..... :	___	___	___	___	___	___	___	___
AS8-15=OLI-P FL R PHS..... :	___	___	___	___	___	___	___	___
	___	___	___	___	___	___	___	___

CODES:

PREEMPTION DATA – MISCELLANEOUS

Ring:	1	2	3	4	
Minimum Green / Walk Time	__10	__10	__10	__10	Time In Seconds

PRIORITIES

Preemption > Automatic Flash :	___1
Preempt 1 > Preempt 2 ..... :	___1
Preempt 2 > Preempt 3 ..... :	___1
Preempt 3 > Preempt 4 ..... :	___1
Preempt 4 > Preempt 5 ..... :	___1
Preempt 5 > Preempt 6 ..... :	___1

PRIORITY: 0-NO (Equal Priority)
1-1st Has Priority
When A Function Has Priority Over Another, The Function Of Lower Priority Will Terminate And The Higher Priority Will Assume Control.

PREEMPT DATA - PREEMPT 1

CONTROL			INTERVAL TIMES		
Non-Lock.....:	_1_	0-NO / 1-YES	Selective Ped Clear .... :	___	0-999 Seconds
			Selective Yel Chg ..... :	__	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	__	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	__10	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	___0	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	__40	0-99.9 Seconds
			Return Red Clear..... :	__20	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	1	___	1	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 1 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 1 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 2

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	__1	0-NO / 1-YES	Selective Ped Clear .... :	___	0-999 Seconds
			Selective Yel Chg..... :	__	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	__	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	__10	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	___0	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	__40	0-99.9 Seconds
			Return Red Clear ..... :	__20	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	1	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	1	___	1	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 2 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	1	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	_1_	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 2 - LOW PRIORITY ROUTINE

Non-Lock ..... :	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip ..... :	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The
Delay ..... :	____	0-999 Seconds	Dwell Phases
Extend ..... :	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration..... :	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell..... :	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call ..... :	____	0-999 Seconds	
Lock Out..... :	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 3

CONTROL			INTERVAL TIMES		
Non-Lock.....:	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg ..... :	____	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 3 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 3 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 4

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg..... :	____	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear ..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 4 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 4 - LOW PRIORITY ROUTINE

Non-Lock..... :	____	0-NO / 1-YES
Skip ..... :	____	0-NO / 1-YES
Delay ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds
Duration..... :	____	0-999 Seconds
Dwell..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds

- When No Dwell Phases Are Set, This Routine Is Disabled.
- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
- Set Max Call = 0 To Disable
- Lock Out Duration Will Be Dependent On Calls If = 0
- Calls (Yes) Will Place A Ped Call On Exit From Routine

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 5

CONTROL			INTERVAL TIMES		
Non-Lock.....:	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg ..... :	____	0-99.9 Seconds
Link PE #.....:	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green..... :	____	0-999 Seconds
Delay .....:	____	0-999 Seconds	Track Ped Clear..... :	____	0-999 Seconds
Extend .....:	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration.....:	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call .....:	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out.....:	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s)..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s)..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 5 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle ..... :	RED	GRN	FL R	FL Y	DARK
Pedest..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle ..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 5 - LOW PRIORITY ROUTINE

Non-Lock.....:	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip .....:	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The Dwell Phases
Delay .....:	____	0-999 Seconds	
Extend .....:	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration.....:	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell .....:	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call .....:	____	0-999 Seconds	
Lock Out.....:	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s)..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

PREEMPT DATA - PREEMPT 6

CONTROL			INTERVAL TIMES		
Non-Lock ..... :	____	0-NO / 1-YES	Selective Ped Clear .... :	____	0-999 Seconds
			Selective Yel Chg..... :	____	0-99.9 Seconds
Link PE # ..... :	____	0-6 Preempt #	Selective Red Clear .... :	____	0-99.9 Seconds
			Track Green ..... :	____	0-999 Seconds
Delay ..... :	____	0-999 Seconds	Track Ped Clear ..... :	____	0-999 Seconds
Extend ..... :	____	0-999 Seconds	Track Yel Chg ..... :	____	0-99.9 Seconds
Duration..... :	____	0-999 Seconds	Track Red Clear..... :	____	0-99.9 Seconds
			Dwell Green ..... :	____	0-999 Seconds
Max Call ..... :	____	0-999 Seconds	Return Ped Clear	____	0-999 Seconds
Lock Out..... :	____	0-999 Seconds	Return Yel Chg ..... :	____	0-99.9 Seconds
			Return Red Clear ..... :	____	0-99.9 Seconds

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exit Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	
Non-Lock ..... :	NO	YES	Preempt Memory To Be Non-Locking
Exit Phase(s) ..... :	NO	YES	Phase(s) To Be Serviced First Following Preempt
Exit Call(s) ..... :	NO	YES	Phase(s) To Receive Calls On Preempt Exit

Notes:

If Track Green Time = 0, Then All Track Intervals Are Omitted.
Set Max Call = 0 To Disable
Lock Out Duration Will Be Dependent On Calls If = 0

PREEMPT 6 - OUTPUT STATUS

Phase Vehicle Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Phase Pedest Phase:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Overlap Vehicle Overlap:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Track Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Dwell Status ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Cycle ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Codes ..... :	0	1	2	3	4
Vehicle..... :	RED	GRN	FL R	FL Y	DARK
Pedest ..... :	DT WK	WALK	FL WK	DARK	----
Cycle Vehicle..... :	NO	ACT'D	MIN REC	MAX REC	----
Cycle Pedest ..... :	NO	ACT'D	REC	----	----
Cycle Overlap..... :	NO	ACT'D	----	----	----

PREEMPT 6 - LOW PRIORITY ROUTINE

Non-Lock..... :	____	0-NO / 1-YES	- When No Dwell Phases Are Set, This Routine Is Disabled.
Skip ..... :	____	0-NO / 1-YES	- Skip (Yes) Will Allow Phases To Be Skipped To Service The
Delay ..... :	____	0-999 Seconds	Dwell Phases
Extend ..... :	____	0-999 Seconds	- Set Max Call = 0 To Disable
Duration..... :	____	0-999 Seconds	- Lock Out Duration Will Be Dependent On Calls If = 0
Dwell..... :	____	0-999 Seconds	- Calls (Yes) Will Place A Ped Call On Exit From Routine
Max Call ..... :	____	0-999 Seconds	
Lock Out..... :	____	0-999 Seconds	

Phase:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dwell Phase(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Exit Call(s) ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Dwell Phase(s) & Exit Call(s) Control Entry: "1" = Yes & "0" = No

SYSTEM DATA - GENERAL

Local Address ..... : _____ Three Digits (000 - 032)
Revert To Backup ..... : _____ Time In Minutes (000- 255)

1) An Address Other Than “000” Transfers Local “D” Connector I/O To It’s System Definition
2) On Loss Of Communications, The Local Will Revert To It’s Time Base Events After The Revert To Backup Time

SYSTEM DATA - SYSTEM DETECTORS

ASSIGN System Detector	1	2	3	4	5	6	7	8
Assigned Detector..... :	____	____	____	____	____	____	____	____

To Assign : VEH 01-64 Enter 01-64 / SPC 01-08 Enter 65-72 / PED 01-08 Enter 73-80

V+O System Detector	1	2	3	4	5	6	7	8
VPHR X 100..... :	____	____	____	____	____	____	____	____
AVGT (Minutes) ..... :	____	____	____	____	____	____	____	____
CTFC / 10..... :	____	____	____	____	____	____	____	____
MVOL..... :	____	____	____	____	____	____	____	____

V+O PARAMETERS:
VPHR - Lane Capacity
AVGT - Averaging Time
CTFC - Correct Factor
MVOL - Min Vol b4 Occ Add

Report Interval..... : ____ Time In Minutes (00- 99) / Time Base Aux D2 Starts A Report

SYSTEM DATA - QUEUE ROUTINES

QUEUE 1

ASSIGN Detector:	1	2	3	4
System Detector..... :	___	___	___	___
WTFC Factor..... :	___	___	___	___
Input Select ..... :	___			
Failed Level..... :	___			

SELECT Level:	A	B
Enter (UP) ..... :	____	____
Leave (DN)..... :	____	____
PATTERN	D / S / O	D / S / O
Called ..... :	_ / _ / _	_ / _ / _

QUEUE 2

ASSIGN Detector:	1	2	3	4	
System Detector..... :	___	___	___	___	Det # 1 To 8
WTFC Factor..... :	___	___	___	___	Factor 1 To 100
Input Select ..... :	___				0-AVG / 1-HIGH
Failed Level ..... :	___				# To Fail Channel

SELECT Level:	A	B
Enter (UP)..... :	____	____
Leave (DN) ..... :	____	____
PATTERN	D / S / O	D / S / O
Pattern Called..... :	_ / _ / _	_ / _ / _

Queue Pattern or Partial Pattern Selection Is Made When The V+O Of Assigned System Detectors Exceeds The Level To Enter.

SYSTEM DATA - VEH DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 0 Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

VALUE 1 Detector:	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Max Presence ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
Erratic Counts..... :	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - PED DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - SPC DETECTOR DIAGNOSTICS

VALUE 0 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

VALUE 1 Detector:	1	2	3	4	5	6	7	8
Max Presence ..... :	___	___	___	___	___	___	___	___
No Activity ..... :	___	___	___	___	___	___	___	___
Erratic Counts ..... :	___	___	___	___	___	___	___	___

Time Base Auxiliary “D1” Enables Value 1 diagnostic Parameters

SYSTEM DATA - SPEED

Measurement .....: ____ 0-Miles Per Hour / 1-Kilometers Per Hour

SPEED TRAP 1 Detector:	1	2
Assigned Detector.....:	____	____
Distance.....:	____	____

SPEED TRAP 2 Detector:	1	2
Assigned Detector..... :	____	____
Distance ..... :	____	____

1) Each Speed Trap Needs Two Detectors Assigned, Any Vehicle, Special, or Pedestrian Detector May Be Assigned.
To Assign : VEH 01-64 Enter 01-64 / SPC 01-08 Enter 65-72 / PED 01-08 Enter 73-80
2) The Distance Between Det 1 and Det 2 May Be Either 11 Feet or 22 Feet. Enter '1' For 11 Ft or '2' for 22 Ft.

RANGES / PATTERN

PATTERN		OFFSET 1		OFFSET 2		OFFSET 3	
Dial	Split	Low	High	Low	High	Low	High
1	1	____	____	____	____	____	____
1	2	____	____	____	____	____	____
1	3	____	____	____	____	____	____
1	4	____	____	____	____	____	____
2	1	____	____	____	____	____	____
2	2	____	____	____	____	____	____
2	3	____	____	____	____	____	____
2	4	____	____	____	____	____	____
3	1	____	____	____	____	____	____
3	2	____	____	____	____	____	____
3	3	____	____	____	____	____	____
3	4	____	____	____	____	____	____
4	1	____	____	____	____	____	____
4	2	____	____	____	____	____	____
4	3	____	____	____	____	____	____
4	4	____	____	____	____	____	____

RANGES:
Enter The Low & High Speed In MPH or KPH For Each Pattern To Enable A Report Of % Lower, Within, & Above It

Appendix C

Existing Traffic Operations Report

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	8	3	134	139	0
Future Volume (vph)	2	8	3	134	139	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.896					
Flt Protected	0.989			0.999		
Satd. Flow (prot)	1702	0	0	1865	1883	0
Flt Permitted	0.989			0.999		
Satd. Flow (perm)	1702	0	0	1865	1883	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%
Adj. Flow (vph)	3	10	4	172	178	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	176	178	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 19.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	8	3	134	139	0
Future Vol, veh/h	2	8	3	134	139	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	3	2	0
Mvmt Flow	3	10	4	172	178	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	358	178	178	0	-	0
Stage 1	178	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	645	870	1410	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	856	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	643	870	1410	-	-	-
Mov Cap-2 Maneuver	643	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	856	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.5	0.17	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	39	-	813	-	-
HCM Lane V/C Ratio	0.003	-	0.016	-	-
HCM Ctrl Dly (s/v)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	1	115	3	2	157
Future Volume (vph)	7	1	115	3	2	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986		0.996			
Flt Protected	0.957					0.999
Satd. Flow (prot)	1813	0	1775	0	0	1786
Flt Permitted	0.957					0.999
Satd. Flow (perm)	1813	0	1775	0	0	1786
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	50%	7%
Adj. Flow (vph)	9	1	142	4	2	194
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	146	0	0	196
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 19.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	1	115	3	2	157
Future Vol, veh/h	7	1	115	3	2	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	50	7
Mvmt Flow	9	1	142	4	2	194

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	343	144	0	0	146	0
Stage 1	144	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.6	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.65	-
Pot Cap-1 Maneuver	658	909	-	-	1189	-
Stage 1	888	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	656	909	-	-	1189	-
Mov Cap-2 Maneuver	656	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.37	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	23	-
HCM Lane V/C Ratio	-	-	0.015	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.4	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	15	36	22	20	6	43	95	15	3	123	36
Future Volume (vph)	17	15	36	22	20	6	43	95	15	3	123	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.929			0.983			0.987			0.970	
Flt Protected		0.987			0.978			0.986			0.999	
Satd. Flow (prot)	0	1683	0	0	1806	0	0	1757	0	0	1758	0
Flt Permitted		0.987			0.978			0.986			0.999	
Satd. Flow (perm)	0	1683	0	0	1806	0	0	1757	0	0	1758	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		2	2		6	9					9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	0%	6%	5%	0%	0%	5%	8%	0%	0%	6%	6%
Adj. Flow (vph)	20	17	41	25	23	7	49	109	17	3	141	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	78	0	0	55	0	0	175	0	0	185	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 34.8%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	15	36	22	20	6	43	95	15	3	123	36
Future Vol, veh/h	17	15	36	22	20	6	43	95	15	3	123	36
Conflicting Peds, #/hr	6	0	2	2	0	6	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	6	0	6	5	0	0	5	8	0	0	6	6
Mvmt Flow	20	17	41	25	23	7	49	109	17	3	141	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	404	403	173	376	415	124	192	0	0	126	0	0
Stage 1	178	178	-	217	217	-	-	-	-	-	-	-
Stage 2	226	225	-	159	199	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.5	6.26	7.15	6.5	6.2	4.15	-	-	4.1	-	-
Critical Hdwy Stg 1	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.354	3.545	4	3.3	2.245	-	-	2.2	-	-
Pot Cap-1 Maneuver	550	539	860	576	531	932	1364	-	-	1472	-	-
Stage 1	815	756	-	779	727	-	-	-	-	-	-	-
Stage 2	768	721	-	836	740	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	494	512	851	507	504	927	1353	-	-	1472	-	-
Mov Cap-2 Maneuver	494	512	-	507	504	-	-	-	-	-	-	-
Stage 1	806	748	-	748	699	-	-	-	-	-	-	-
Stage 2	704	693	-	774	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.39	12.48	2.18	0.14
HCM LOS	B	B		

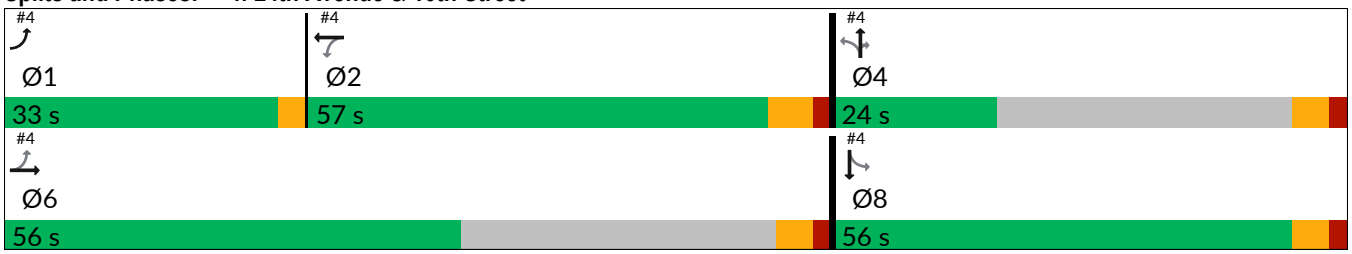
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	492	-	-	641	536	32	-	-
HCM Lane V/C Ratio	0.037	-	-	0.122	0.103	0.002	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	11.4	12.5	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	214	36	7	273	56	54	50	16	58	33	106
Future Volume (vph)	95	214	36	7	273	56	54	50	16	58	33	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			1.00	
Frt		0.978			0.975				0.850		0.927	
Flt Protected	0.950				0.999			0.975			0.986	
Satd. Flow (prot)	1722	1804	0	0	3323	0	0	1740	1445	0	1632	0
Flt Permitted	0.489				0.947			0.730			0.862	
Satd. Flow (perm)	883	1804	0	0	3150	0	0	1302	1445	0	1427	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			17				52		44	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	11%	0%	7%	7%	11%	4%	13%	9%	6%	7%
Adj. Flow (vph)	102	230	39	8	294	60	58	54	17	62	35	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	269	0	0	362	0	0	112	17	0	211	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	42.6	39.6			30.2			16.0	16.0		16.0	
Actuated g/C Ratio	0.63	0.59			0.45			0.24	0.24		0.24	
v/c Ratio	0.16	0.25			0.26			0.36	0.04		0.57	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	5.6	7.3			12.7			26.8	0.6		25.6	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	5.6	7.3			12.7			26.8	0.6		25.6	
LOS	A	A			B			C	A		C	
Approach Delay (s/veh)		6.9			12.7			23.3			25.6	
Approach LOS		A			B			C			C	
90th %ile Green (s)	9.4	43.4		30.0	30.0		19.1	19.1	19.1	19.1	19.1	
90th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
70th %ile Green (s)	8.0	42.0		30.0	30.0		15.5	15.5	15.5	15.5	15.5	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	7.2	41.2		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Min	Min	
30th %ile Green (s)	6.6	40.6		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Min	Min	
10th %ile Green (s)	0.0	31.0		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
10th %ile Term Code	Skip	Hold		Min	Min		Hold	Hold	Hold	Min	Min	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 67.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 14.5	Intersection LOS: B
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	
90th %ile Actuated Cycle: 74.5	
70th %ile Actuated Cycle: 69.5	
50th %ile Actuated Cycle: 68.2	
30th %ile Actuated Cycle: 67.6	
10th %ile Actuated Cycle: 58	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	214	36	7	273	56	54	50	16	58	33	106
Future Volume (veh/h)	95	214	36	7	273	56	54	50	16	58	33	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1737	1900	1796	1796	1737	1841	1707	1767	1811	1796
Adj Flow Rate, veh/h	102	230	39	8	294	60	58	54	17	62	35	114
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	3	11	0	7	7	11	4	13	9	6	7
Cap, veh/h	613	882	150	67	1267	251	236	194	332	145	88	190
Arrive On Green	0.06	0.57	0.57	0.46	0.46	0.46	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1725	1546	262	20	2753	545	663	845	1445	322	381	826
Grp Volume(v), veh/h	102	0	269	193	0	169	112	0	17	211	0	0
Grp Sat Flow(s),veh/h/ln	1725	0	1808	1783	0	1535	1508	0	1445	1530	0	0
Q Serve(g_s), s	1.8	0.0	4.9	0.0	0.0	4.4	0.0	0.0	0.6	3.9	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	4.9	4.2	0.0	4.4	3.6	0.0	0.6	7.8	0.0	0.0
Prop In Lane	1.00		0.14	0.04		0.35	0.52		1.00	0.29		0.54
Lane Grp Cap(c), veh/h	613	0	1032	878	0	707	430	0	332	423	0	0
V/C Ratio(X)	0.17	0.00	0.26	0.22	0.00	0.24	0.26	0.00	0.05	0.50	0.00	0.00
Avail Cap(c_a), veh/h	1295	0	1387	1414	0	1178	498	0	399	1222	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	7.0	10.6	0.0	10.7	20.7	0.0	19.6	22.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	0.2	0.3	0.0	0.1	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.1	0.1	0.0	0.1	0.8	0.0	0.1	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.3	0.0	7.2	10.8	0.0	10.8	21.0	0.0	19.6	23.2	0.0	0.0
LnGrp LOS	A		A	B		B	C		B	C		
Approach Vol, veh/h		371			362			129			211	
Approach Delay, s/veh		7.2			10.8			20.8			23.2	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.2	37.0		21.0		44.2		21.0
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	3.8	6.4		5.6		6.9		9.8
Green Ext Time (p_c), s	0.5	7.2		1.1		5.3		4.1

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	15	18	200	162	5
Future Volume (vph)	2	15	18	200	162	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.880				0.996	
Flt Protected	0.994			0.996		
Satd. Flow (prot)	1680	0	0	1896	1808	0
Flt Permitted	0.994			0.996		
Satd. Flow (perm)	1680	0	0	1896	1808	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	6%	0%
Adj. Flow (vph)	2	16	20	220	178	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	240	183	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	15	18	200	162	5
Future Vol, veh/h	2	15	18	200	162	5
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	6	0
Mvmt Flow	2	16	20	220	178	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	441	183	185	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	577	865	1402	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	568	863	1401	-	-	-
Mov Cap-2 Maneuver	568	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.53	0.63	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	149	-	813	-	-
HCM Lane V/C Ratio	0.014	-	0.023	-	-
HCM Ctrl Dly (s/v)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	5	208	4	2	174
Future Volume (vph)	2	5	208	4	2	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.998			
Flt Protected	0.986					0.999
Satd. Flow (prot)	1712	0	1899	0	0	1812
Flt Permitted	0.986					0.999
Satd. Flow (perm)	1712	0	1899	0	0	1812
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	6%
Adj. Flow (vph)	2	5	224	4	2	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	228	0	0	189
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 21.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	5	208	4	2	174
Future Vol, veh/h	2	5	208	4	2	174
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	6
Mvmt Flow	2	5	224	4	2	187

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	419	226	0	0	228	0
Stage 1	226	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	594	819	-	-	1352	-
Stage 1	816	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	592	819	-	-	1352	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.93	0	0.09
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	738	20	-
HCM Lane V/C Ratio	-	-	0.01	0.002	-
HCM Ctrl Dly (s/v)	-	-	9.9	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	13	69	22	8	4	56	185	28	2	144	33
Future Volume (vph)	24	13	69	22	8	4	56	185	28	2	144	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.913			0.983			0.986			0.975	
Flt Protected		0.989			0.969			0.990				
Satd. Flow (prot)	0	1718	0	0	1773	0	0	1862	0	0	1773	0
Flt Permitted		0.989			0.969			0.990				
Satd. Flow (perm)	0	1718	0	0	1773	0	0	1862	0	0	1773	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		1	1		6	6					6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	8%	0%	5%	0%	0%	0%	1%	0%	0%	7%	0%
Adj. Flow (vph)	28	15	79	25	9	5	64	213	32	2	166	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	39	0	0	309	0	0	206	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 41.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	13	69	22	8	4	56	185	28	2	144	33
Future Vol, veh/h	24	13	69	22	8	4	56	185	28	2	144	33
Conflicting Peds, #/hr	6	0	1	1	0	6	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	8	0	5	0	0	0	1	0	0	7	0
Mvmt Flow	28	15	79	25	9	5	64	213	32	2	166	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	547	569	191	536	572	235	209	0	0	245	0	0
Stage 1	195	195	-	357	357	-	-	-	-	-	-	-
Stage 2	352	374	-	179	214	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.58	6.2	7.15	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.072	3.3	3.545	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	451	424	855	451	433	809	1373	-	-	1333	-	-
Stage 1	811	728	-	654	632	-	-	-	-	-	-	-
Stage 2	669	608	-	816	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	409	398	850	371	406	805	1366	-	-	1333	-	-
Mov Cap-2 Maneuver	409	398	-	371	406	-	-	-	-	-	-	-
Stage 1	805	723	-	618	597	-	-	-	-	-	-	-
Stage 2	616	574	-	723	724	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.3	14.83	1.62	0.09
HCM LOS	B	B		

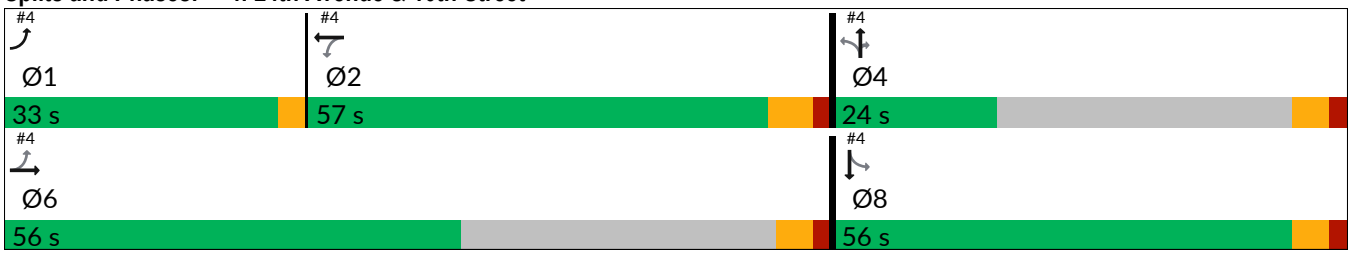
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	365	-	-	614	405	19	-	-
HCM Lane V/C Ratio	0.047	-	-	0.198	0.096	0.002	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	12.3	14.8	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	373	93	25	344	83	77	64	33	126	86	90
Future Volume (vph)	114	373	93	25	344	83	77	64	33	126	86	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00						1.00	
Frt		0.970			0.973				0.850		0.960	
Flt Protected	0.950				0.997			0.974			0.980	
Satd. Flow (prot)	1825	1829	0	0	3503	0	0	1844	1585	0	1751	0
Flt Permitted	0.432				0.908			0.663			0.798	
Satd. Flow (perm)	828	1829	0	0	3189	0	0	1255	1585	0	1426	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			20				52		16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2		3	3		2	1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	1%	2%	3%	2%	6%	2%
Adj. Flow (vph)	119	389	97	26	358	86	80	67	34	131	90	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	486	0	0	470	0	0	147	34	0	315	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	46.1	43.1			30.3			22.9	22.9		22.9	
Actuated g/C Ratio	0.59	0.55			0.39			0.29	0.29		0.29	
v/c Ratio	0.20	0.48			0.38			0.40	0.07		0.73	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	9.4	13.6			19.1			25.4	3.5		34.3	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.4	13.6			19.1			25.4	3.5		34.3	
LOS	A	B			B			C	A		C	
Approach Delay (s/veh)		12.7			19.1			21.2			34.3	
Approach LOS		B			B			C			C	
90th %ile Green (s)	12.1	46.1		30.0	30.0		34.1	34.1	34.1	34.1	34.1	
90th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
70th %ile Green (s)	9.7	43.7		30.0	30.0		26.8	26.8	26.8	26.8	26.8	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	8.4	42.4		30.0	30.0		22.2	22.2	22.2	22.2	22.2	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	7.4	41.4		30.0	30.0		18.7	18.7	18.7	18.7	18.7	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	6.3	40.3		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Min	Min	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 78.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 19.9	Intersection LOS: B
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	
90th %ile Actuated Cycle: 92.2	
70th %ile Actuated Cycle: 82.5	
50th %ile Actuated Cycle: 76.6	
30th %ile Actuated Cycle: 72.1	
10th %ile Actuated Cycle: 67.3	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	373	93	25	344	83	77	64	33	126	86	90
Future Volume (veh/h)	114	373	93	25	344	83	77	64	33	126	86	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1885	1885	1870	1856	1870	1811	1870
Adj Flow Rate, veh/h	119	389	97	26	358	86	80	67	34	131	90	94
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	0	0	1	1	1	2	3	2	6	2
Cap, veh/h	491	714	178	89	1043	243	283	218	528	221	150	129
Arrive On Green	0.06	0.49	0.49	0.39	0.39	0.39	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1810	1444	360	96	2668	621	628	647	1571	458	446	385
Grp Volume(v), veh/h	119	0	486	248	0	222	147	0	34	315	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1804	1784	0	1601	1275	0	1571	1289	0	0
Q Serve(g_s), s	2.8	0.0	14.3	0.0	0.0	7.5	0.0	0.0	1.1	11.5	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	14.3	7.1	0.0	7.5	6.3	0.0	1.1	17.9	0.0	0.0
Prop In Lane	1.00		0.20	0.10		0.39	0.54		1.00	0.42		0.30
Lane Grp Cap(c), veh/h	491	0	892	749	0	626	501	0	528	500	0	0
V/C Ratio(X)	0.24	0.00	0.54	0.33	0.00	0.35	0.29	0.00	0.06	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1082	0	1175	1191	0	1043	501	0	528	960	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	13.4	16.4	0.0	16.5	18.8	0.0	17.3	23.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5	0.3	0.0	0.3	0.3	0.0	0.1	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.5	1.3	0.0	1.2	1.1	0.0	0.2	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.0	0.0	13.9	16.7	0.0	16.9	19.1	0.0	17.3	24.9	0.0	0.0
LnGrp LOS	B		B	B		B	B		B	C		
Approach Vol, veh/h		605			470			181			315	
Approach Delay, s/veh		13.6			16.8			18.8			24.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.0	37.0		31.8		45.0		31.8
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	4.8	9.5		8.3		16.3		19.9
Green Ext Time (p_c), s	0.6	9.6		1.4		10.1		5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.4
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	12	12	180	169	6
Future Volume (vph)	7	12	12	180	169	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.912				0.996	
Flt Protected	0.983			0.997		
Satd. Flow (prot)	1722	0	0	1915	1913	0
Flt Permitted	0.983			0.997		
Satd. Flow (perm)	1722	0	0	1915	1913	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	7	13	13	191	180	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	204	186	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 29.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	12	12	180	169	6
Future Vol, veh/h	7	12	12	180	169	6
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	13	13	191	180	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	403	186	189	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	607	861	1397	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	599	859	1393	-	-	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10	0.48	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	113	-	741	-	-
HCM Lane V/C Ratio	0.009	-	0.027	-	-
HCM Ctrl Dly (s/v)	7.6	0	10	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	9	185	8	6	174
Future Volume (vph)	4	9	185	8	6	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.994			
Flt Protected	0.986					0.998
Satd. Flow (prot)	1712	0	1910	0	0	1917
Flt Permitted	0.986					0.998
Satd. Flow (perm)	1712	0	1910	0	0	1917
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	10	197	9	6	185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	206	0	0	191
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 24.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	9	185	8	6	174
Future Vol, veh/h	4	9	185	8	6	174
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	10	197	9	6	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	401	201	0	0	205	0
Stage 1	201	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	609	845	-	-	1378	-
Stage 1	838	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	605	845	-	-	1378	-
Mov Cap-2 Maneuver	605	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	837	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.87	0	0.25
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	60	-
HCM Lane V/C Ratio	-	-	0.018	0.005	-
HCM Ctrl Dly (s/v)	-	-	9.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	15	57	29	23	7	46	166	32	2	149	13
Future Volume (vph)	21	15	57	29	23	7	46	166	32	2	149	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.918			0.983			0.982			0.989	
Flt Protected		0.989			0.976			0.991			0.999	
Satd. Flow (prot)	0	1744	0	0	1843	0	0	1856	0	0	1881	0
Flt Permitted		0.989			0.976			0.991			0.999	
Satd. Flow (perm)	0	1744	0	0	1843	0	0	1856	0	0	1881	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	3					3	5					5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	1%	0%
Adj. Flow (vph)	23	16	61	31	25	8	49	178	34	2	160	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	64	0	0	261	0	0	176	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 39.8%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	15	57	29	23	7	46	166	32	2	149	13
Future Vol, veh/h	21	15	57	29	23	7	46	166	32	2	149	13
Conflicting Peds, #/hr	3	0	0	0	0	3	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	4	0	0	0	1	0
Mvmt Flow	23	16	61	31	25	8	49	178	34	2	160	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	469	488	172	467	478	199	179	0	0	213	0	0
Stage 1	177	177	-	295	295	-	-	-	-	-	-	-
Stage 2	293	312	-	173	183	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	508	483	877	509	489	847	1384	-	-	1369	-	-
Stage 1	830	757	-	718	673	-	-	-	-	-	-	-
Stage 2	720	661	-	834	752	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	454	460	873	438	466	845	1378	-	-	1369	-	-
Mov Cap-2 Maneuver	454	460	-	438	466	-	-	-	-	-	-	-
Stage 1	825	752	-	689	645	-	-	-	-	-	-	-
Stage 2	656	634	-	757	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.6	13.71	1.45	0.09
HCM LOS	B	B		

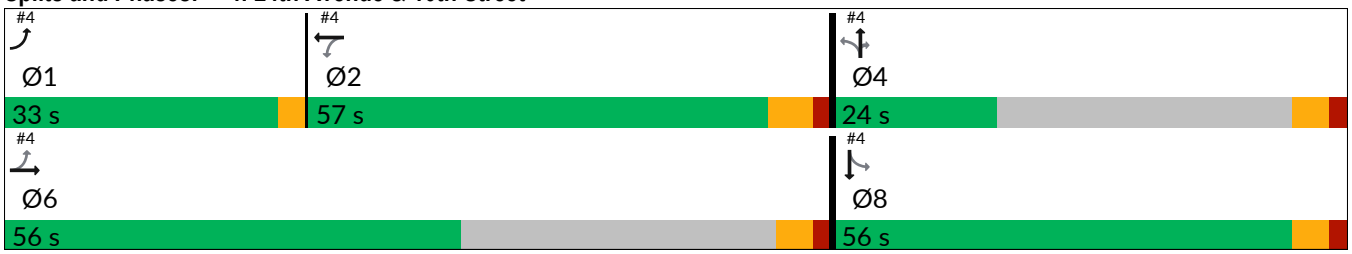
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	329	-	-	645	477	22	-	-
HCM Lane V/C Ratio	0.036	-	-	0.155	0.133	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	11.6	13.7	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	348	82	20	342	96	67	64	29	144	73	108
Future Volume (vph)	130	348	82	20	342	96	67	64	29	144	73	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00						1.00	
Frt		0.971			0.969				0.850		0.955	
Flt Protected	0.950				0.998			0.975			0.978	
Satd. Flow (prot)	1825	1865	0	0	3524	0	0	1873	1633	0	1779	0
Flt Permitted	0.420				0.922			0.685			0.792	
Satd. Flow (perm)	805	1865	0	0	3256	0	0	1316	1633	0	1441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			25				52		19	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Adj. Flow (vph)	137	366	86	21	360	101	71	67	31	152	77	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	452	0	0	482	0	0	138	31	0	343	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	46.9	43.8			30.4			24.2	24.2		24.2	
Actuated g/C Ratio	0.58	0.55			0.38			0.30	0.30		0.30	
v/c Ratio	0.23	0.44			0.39			0.35	0.06		0.77	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	10.1	13.4			20.0			24.2	2.8		36.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	10.1	13.4			20.0			24.2	2.8		36.0	
LOS	B	B			B			C	A		D	
Approach Delay (s/veh)		12.7			20.0			20.3			36.0	
Approach LOS		B			B			C			D	
90th %ile Green (s)	13.2	47.2		30.0	30.0		36.3	36.3	36.3	36.3	36.3	
90th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
70th %ile Green (s)	10.7	44.7		30.0	30.0		27.9	27.9	27.9	27.9	27.9	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	9.1	43.1		30.0	30.0		23.7	23.7	23.7	23.7	23.7	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	7.9	41.9		30.0	30.0		20.0	20.0	20.0	20.0	20.0	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	6.6	40.6		30.0	30.0		15.4	15.4	15.4	15.4	15.4	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 80.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 20.8	Intersection LOS: C
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	
90th %ile Actuated Cycle: 95.5	
70th %ile Actuated Cycle: 84.6	
50th %ile Actuated Cycle: 78.8	
30th %ile Actuated Cycle: 73.9	
10th %ile Actuated Cycle: 68	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	348	82	20	342	96	67	64	29	144	73	108
Future Volume (veh/h)	130	348	82	20	342	96	67	64	29	144	73	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1885	1885	1900
Adj Flow Rate, veh/h	137	366	86	21	360	101	71	67	31	152	77	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	1	1	0
Cap, veh/h	486	729	171	75	1005	272	283	247	554	249	128	155
Arrive On Green	0.07	0.49	0.49	0.38	0.38	0.38	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1810	1487	349	67	2648	717	620	717	1607	532	372	450
Grp Volume(v), veh/h	137	0	452	257	0	225	138	0	31	343	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1836	1834	0	1598	1337	0	1607	1353	0	0
Q Serve(g_s), s	3.4	0.0	13.1	0.0	0.0	8.0	0.0	0.0	1.0	13.4	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	13.1	7.7	0.0	8.0	5.5	0.0	1.0	18.8	0.0	0.0
Prop In Lane	1.00		0.19	0.08		0.45	0.51		1.00	0.44		0.33
Lane Grp Cap(c), veh/h	486	0	901	746	0	607	530	0	554	532	0	0
V/C Ratio(X)	0.28	0.00	0.50	0.34	0.00	0.37	0.26	0.00	0.06	0.64	0.00	0.00
Avail Cap(c_a), veh/h	1041	0	1162	1190	0	1011	530	0	554	964	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	13.6	17.6	0.0	17.7	18.5	0.0	17.3	23.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.3	0.0	0.4	0.3	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.8	1.7	0.0	1.5	1.1	0.0	0.2	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.7	0.0	14.0	17.8	0.0	18.1	18.8	0.0	17.3	25.2	0.0	0.0
LnGrp LOS	B		B	B		B	B		B	C		
Approach Vol, veh/h		589			482			169			343	
Approach Delay, s/veh		13.7			18.0			18.5			25.2	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.8	37.0		33.2		45.8		33.2
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	5.4	10.0		7.5		15.1		20.8
Green Ext Time (p_c), s	0.7	9.8		1.3		9.3		6.4

Intersection Summary	
HCM 7th Control Delay, s/veh	18.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix D

Internal Trip Capture

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	260040 (741 24th Ave & Grey Rd 4)	**Organization:**	Paradigm
Project Location:	Hanover	**Performed By:**	
Scenario Description:	Total Traffic	**Date:**	01-Jun-26
Analysis Year:	2035	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822	10,000		39	21	18
Restaurant				0		
Cinema/Entertainment				0		
Residential	215, 221		175	66	16	50
Hotel				0		
All Other Land Uses[2]				0		
Total				105	37	68

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	105	37	68
Internal Capture Percentage	2%	3%	1%
External Vehicle-Trips[3]	103	36	67
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	5%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	2%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
[4]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	260040 (741 24th Ave & Grey Rd 4)
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	21	21	1.00	18	18
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	16	16	1.00	50	50
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	5		2	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	10	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	20	21	20	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	16	16	16	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	18	18	18	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	49	50	49	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	260040 (741 24th Ave & Grey Rd 4)	**Organization:**	Paradigm
Project Location:	Hanover	**Performed By:**	
Scenario Description:	Total Traffic	**Date:**	01-Jun-26
Analysis Year:	2035	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822	10,000		76	38	38
Restaurant				0		
Cinema/Entertainment				0		
Residential	215, 221		175	76	46	30
Hotel				0		
All Other Land Uses[2]				0		
Total				152	84	68

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					0	
Restaurant						
Cinema/Entertainment						
Residential		0				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	10	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	152	84	68
Internal Capture Percentage	18%	17%	21%
External Vehicle-Trips[3]	124	70	54
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	26%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	22%	13%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
[4]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	260040 (741 24th Ave & Grey Rd 4)
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	38	38	1.00	38	38
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	46	46	1.00	30	30
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		11	2	10	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	13	6	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	2	0
Retail	0		0	0	21	0
Restaurant	0	19		0	7	0
Cinema/Entertainment	0	2	0		2	0
Residential	0	4	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	4	34	38	34	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	36	46	36	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	10	28	38	28	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	26	30	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	260040 (741 24th Ave & Grey Rd 4)	**Organization:**	Paradigm
Project Location:	Hanover	**Performed By:**	
Scenario Description:	Total Traffic	**Date:**	01-Jun-26
Analysis Year:	2035	**Checked By:**	
Analysis Period:	**Saturday Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822	10,000		66	33	33
Restaurant				0		
Cinema/Entertainment				0		
Residential	215, 221		175	72	36	36
Hotel				0		
All Other Land Uses[2]				0		
Total				138	69	69

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					0	
Restaurant						
Cinema/Entertainment						
Residential		0				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	9	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	138	69	69
Internal Capture Percentage	17%	17%	17%
External Vehicle-Trips[3]	114	57	57
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	25%	8%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.
[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator
[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
[4]Person-Trips
*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	260040 (741 24th Ave & Grey Rd 4)
Analysis Period:	**Saturday Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0		1.00	0	0
Retail	1.00	33	33		1.00	33	33
Restaurant	1.00	0	0		1.00	0	0
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	36	36		1.00	36	36
Hotel	1.00	0	0		1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		10	1	9	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	15	8	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	1	0
Retail	0		0	0	17	0
Restaurant	0	17		0	6	0
Cinema/Entertainment	0	1	0		1	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	3	30	33		30	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	9	27	36		27	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	9	24	33		24	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	3	33	36		33	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix E

2035 Background Traffic Operations Report

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	41	14	160	166	6
Future Volume (vph)	20	41	14	160	166	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909				0.995	
Flt Protected	0.984			0.996		
Satd. Flow (prot)	1718	0	0	1862	1875	0
Flt Permitted	0.984			0.996		
Satd. Flow (perm)	1718	0	0	1862	1875	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%
Adj. Flow (vph)	26	53	18	205	213	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	223	221	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	41	14	160	166	6
Future Vol, veh/h	20	41	14	160	166	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	3	2	0
Mvmt Flow	26	53	18	205	213	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	458	217	221	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	565	828	1361	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	556	828	1361	-	-	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.66	0.62	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	145	-	714	-	-
HCM Lane V/C Ratio	0.013	-	0.11	-	-
HCM Ctrl Dly (s/v)	7.7	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	1	148	3	2	221
Future Volume (vph)	7	1	148	3	2	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986		0.997			
Flt Protected	0.957					
Satd. Flow (prot)	1813	0	1776	0	0	1790
Flt Permitted	0.957					
Satd. Flow (perm)	1813	0	1776	0	0	1790
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	50%	7%
Adj. Flow (vph)	9	1	183	4	2	273
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	187	0	0	275
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 23.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	1	148	3	2	221
Future Vol, veh/h	7	1	148	3	2	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	50	7
Mvmt Flow	9	1	183	4	2	273

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	462	185	0	0	186	0
Stage 1	185	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.6	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.65	-
Pot Cap-1 Maneuver	561	863	-	-	1146	-
Stage 1	852	-	-	-	-	-
Stage 2	774	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	560	863	-	-	1146	-
Mov Cap-2 Maneuver	560	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.25	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	586	16	-
HCM Lane V/C Ratio	-	-	0.017	0.002	-
HCM Ctrl Dly (s/v)	-	-	11.3	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	15	43	22	20	6	51	125	15	3	180	43
Future Volume (vph)	20	15	43	22	20	6	51	125	15	3	180	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.926			0.983			0.990			0.974	
Flt Protected		0.987			0.978			0.987			0.999	
Satd. Flow (prot)	0	1675	0	0	1806	0	0	1761	0	0	1765	0
Flt Permitted		0.987			0.978			0.987			0.999	
Satd. Flow (perm)	0	1675	0	0	1806	0	0	1761	0	0	1765	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		2	2		6	9					9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	0%	6%	5%	0%	0%	5%	8%	0%	0%	6%	6%
Adj. Flow (vph)	23	17	49	25	23	7	59	144	17	3	207	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	55	0	0	220	0	0	259	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 39.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	15	43	22	20	6	51	125	15	3	180	43
Future Vol, veh/h	20	15	43	22	20	6	51	125	15	3	180	43
Conflicting Peds, #/hr	6	0	2	2	0	6	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	6	0	6	5	0	0	5	8	0	0	6	6
Mvmt Flow	23	17	49	25	23	7	59	144	17	3	207	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	526	526	243	494	542	158	265	0	0	161	0	0
Stage 1	248	248	-	270	270	-	-	-	-	-	-	-
Stage 2	278	278	-	224	272	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.5	6.26	7.15	6.5	6.2	4.15	-	-	4.1	-	-
Critical Hdwy Stg 1	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.354	3.545	4	3.3	2.245	-	-	2.2	-	-
Pot Cap-1 Maneuver	456	460	786	481	450	892	1281	-	-	1430	-	-
Stage 1	748	705	-	730	690	-	-	-	-	-	-	-
Stage 2	719	684	-	771	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	401	432	778	409	423	887	1271	-	-	1430	-	-
Mov Cap-2 Maneuver	401	432	-	409	423	-	-	-	-	-	-	-
Stage 1	739	697	-	693	655	-	-	-	-	-	-	-
Stage 2	650	649	-	701	680	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.69	14.23	2.13	0.1
HCM LOS	B	B		

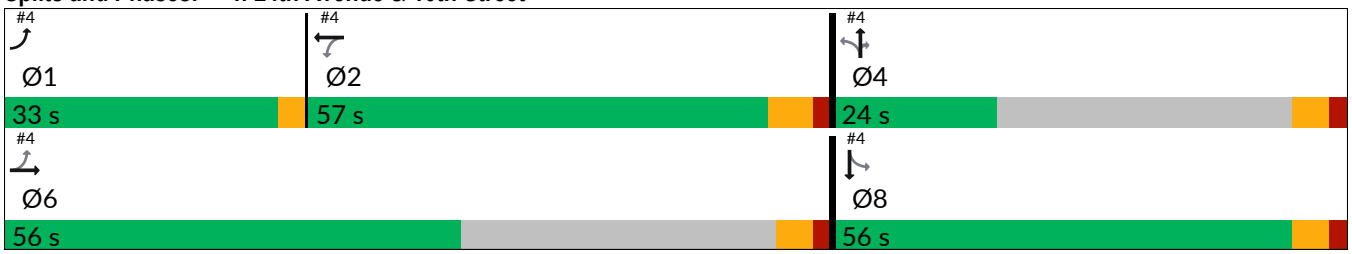
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	471	-	-	558	445	23	-	-
HCM Lane V/C Ratio	0.046	-	-	0.161	0.124	0.002	-	-
HCM Ctrl Dly (s/v)	8	0	-	12.7	14.2	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	256	43	8	326	71	65	62	19	78	45	145
Future Volume (vph)	119	256	43	8	326	71	65	62	19	78	45	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			1.00	
Frt		0.979			0.974				0.850		0.927	
Flt Protected	0.950				0.999			0.975			0.986	
Satd. Flow (prot)	1722	1806	0	0	3320	0	0	1741	1445	0	1632	0
Flt Permitted	0.455				0.946			0.654			0.853	
Satd. Flow (perm)	822	1806	0	0	3143	0	0	1167	1445	0	1412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			19				52		44	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	11%	0%	7%	7%	11%	4%	13%	9%	6%	7%
Adj. Flow (vph)	128	275	46	9	351	76	70	67	20	84	48	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	321	0	0	436	0	0	137	20	0	288	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	45.8	42.8			30.2			19.1	19.1		19.1	
Actuated g/C Ratio	0.62	0.58			0.41			0.26	0.26		0.26	
v/c Ratio	0.21	0.31			0.34			0.46	0.05		0.73	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	7.5	9.4			16.3			28.6	1.1		32.7	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	7.5	9.4			16.3			28.6	1.1		32.7	
LOS	A	A			B			C	A		C	
Approach Delay (s/veh)		8.8			16.3			25.1			32.7	
Approach LOS		A			B			C			C	
90th %ile Green (s)	11.8	45.8		30.0	30.0		26.7	26.7	26.7	26.7	26.7	
90th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
70th %ile Green (s)	9.5	43.5		30.0	30.0		21.3	21.3	21.3	21.3	21.3	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	8.3	42.3		30.0	30.0		18.1	18.1	18.1	18.1	18.1	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	7.4	41.4		30.0	30.0		15.3	15.3	15.3	15.3	15.3	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	6.3	40.3		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Min	Min	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 73.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 18.4	Intersection LOS: B
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 84.5	
70th %ile Actuated Cycle: 76.8	
50th %ile Actuated Cycle: 72.4	
30th %ile Actuated Cycle: 68.7	
10th %ile Actuated Cycle: 67.3	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	256	43	8	326	71	65	62	19	78	45	145
Future Volume (veh/h)	119	256	43	8	326	71	65	62	19	78	45	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1737	1900	1796	1796	1737	1841	1707	1767	1811	1796
Adj Flow Rate, veh/h	128	275	46	9	351	76	70	67	20	84	48	156
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	3	11	0	7	7	11	4	13	9	6	7
Cap, veh/h	524	817	137	60	1131	238	243	209	422	156	98	225
Arrive On Green	0.07	0.53	0.53	0.42	0.42	0.42	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1725	1549	259	20	2718	573	573	715	1445	314	337	769
Grp Volume(v), veh/h	128	0	321	233	0	203	137	0	20	288	0	0
Grp Sat Flow(s),veh/h/ln	1725	0	1808	1781	0	1530	1288	0	1445	1420	0	0
Q Serve(g_s), s	2.8	0.0	7.4	0.0	0.0	6.4	0.0	0.0	0.7	7.6	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	7.4	6.3	0.0	6.4	5.7	0.0	0.7	13.4	0.0	0.0
Prop In Lane	1.00		0.14	0.04		0.37	0.51		1.00	0.29		0.54
Lane Grp Cap(c), veh/h	524	0	954	793	0	637	452	0	422	479	0	0
V/C Ratio(X)	0.24	0.00	0.34	0.29	0.00	0.32	0.30	0.00	0.05	0.60	0.00	0.00
Avail Cap(c_a), veh/h	1121	0	1254	1277	0	1061	452	0	422	1074	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	9.8	14.1	0.0	14.2	19.8	0.0	18.3	22.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.2	0.0	0.3	0.4	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.1	0.6	0.0	0.5	1.0	0.0	0.1	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.0	0.0	10.0	14.3	0.0	14.5	20.2	0.0	18.4	24.0	0.0	0.0
LnGrp LOS	B		A	B		B	C		B	C		
Approach Vol, veh/h		449			436			157			288	
Approach Delay, s/veh		10.0			14.4			20.0			24.0	
Approach LOS		A			B			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.0	37.0		27.1		45.0		27.1
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	4.8	8.4		7.7		9.4		15.4
Green Ext Time (p_c), s	0.6	8.9		1.2		6.5		5.7

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	29	41	239	194	39
Future Volume (vph)	22	29	41	239	194	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.923				0.977	
Flt Protected	0.979			0.993		
Satd. Flow (prot)	1736	0	0	1892	1788	0
Flt Permitted	0.979			0.993		
Satd. Flow (perm)	1736	0	0	1892	1788	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	6%	0%
Adj. Flow (vph)	24	32	45	263	213	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	308	256	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 41.1%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	29	41	239	194	39
Future Vol, veh/h	22	29	41	239	194	39
Conflicting Peds, #/hr	0	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	6	0
Mvmt Flow	24	32	45	263	213	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	588	237	257	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	475	807	1319	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	806	1318	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.56	1.15	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	264	-	605	-	-
HCM Lane V/C Ratio	0.034	-	0.093	-	-
HCM Ctrl Dly (s/v)	7.8	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	5	272	4	2	222
Future Volume (vph)	2	5	272	4	2	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.998			
Flt Protected	0.986					
Satd. Flow (prot)	1712	0	1899	0	0	1813
Flt Permitted	0.986					
Satd. Flow (perm)	1712	0	1899	0	0	1813
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	6%
Adj. Flow (vph)	2	5	292	4	2	239
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	296	0	0	241
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 24.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	5	272	4	2	222
Future Vol, veh/h	2	5	272	4	2	222
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	6
Mvmt Flow	2	5	292	4	2	239

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	540	295	0	0	297	0
Stage 1	295	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	506	749	-	-	1276	-
Stage 1	760	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	749	-	-	1276	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.53	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	658	16	-
HCM Lane V/C Ratio	-	-	0.011	0.002	-
HCM Ctrl Dly (s/v)	-	-	10.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	13	82	22	8	4	67	244	28	2	186	39
Future Volume (vph)	29	13	82	22	8	4	67	244	28	2	186	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.911			0.983			0.989			0.977	
Flt Protected		0.989			0.969			0.990				
Satd. Flow (prot)	0	1716	0	0	1773	0	0	1868	0	0	1775	0
Flt Permitted		0.989			0.969			0.990				
Satd. Flow (perm)	0	1716	0	0	1773	0	0	1868	0	0	1775	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		1	1		6	6					6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	8%	0%	5%	0%	0%	0%	1%	0%	0%	7%	0%
Adj. Flow (vph)	33	15	94	25	9	5	77	280	32	2	214	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	39	0	0	389	0	0	261	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	13	82	22	8	4	67	244	28	2	186	39
Future Vol, veh/h	29	13	82	22	8	4	67	244	28	2	186	39
Conflicting Peds, #/hr	6	0	1	1	0	6	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	8	0	5	0	0	0	1	0	0	7	0
Mvmt Flow	33	15	94	25	9	5	77	280	32	2	214	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	692	713	243	677	720	303	265	0	0	313	0	0
Stage 1	247	247	-	451	451	-	-	-	-	-	-	-
Stage 2	445	467	-	227	269	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.58	6.2	7.15	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.072	3.3	3.545	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	361	350	801	362	356	742	1311	-	-	1259	-	-
Stage 1	762	691	-	582	575	-	-	-	-	-	-	-
Stage 2	596	552	-	769	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	320	322	795	283	328	738	1304	-	-	1259	-	-
Mov Cap-2 Maneuver	320	322	-	283	328	-	-	-	-	-	-	-
Stage 1	756	686	-	541	533	-	-	-	-	-	-	-
Stage 2	537	512	-	661	685	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.28	17.99	1.57	0.07
HCM LOS	B	C		

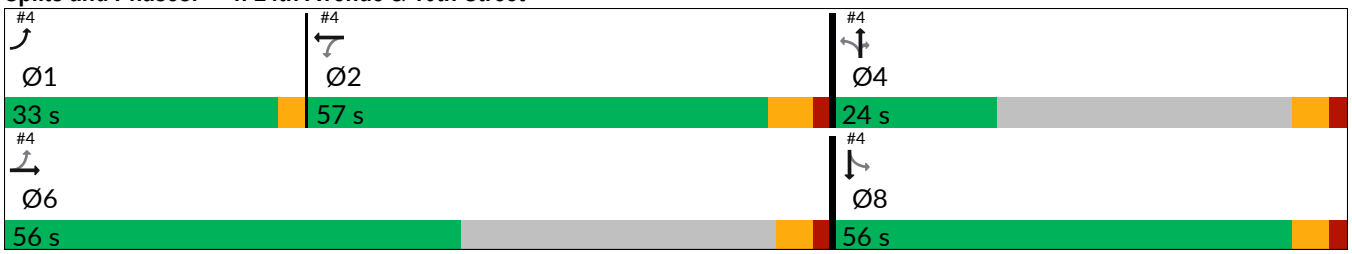
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	349	-	-	530	316	15	-	-
HCM Lane V/C Ratio	0.059	-	-	0.269	0.124	0.002	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	14.3	18	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	446	111	30	411	107	92	82	39	156	106	114
Future Volume (vph)	145	446	111	30	411	107	92	82	39	156	106	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00						1.00	
Frt		0.970			0.971				0.850		0.959	
Flt Protected	0.950				0.997			0.974			0.980	
Satd. Flow (prot)	1825	1829	0	0	3496	0	0	1844	1585	0	1749	0
Flt Permitted	0.331				0.892			0.649			0.774	
Satd. Flow (perm)	635	1829	0	0	3126	0	0	1229	1585	0	1382	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			22				52		16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2		3	3		2	1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	1%	2%	3%	2%	6%	2%
Adj. Flow (vph)	151	465	116	31	428	111	96	85	41	163	110	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	581	0	0	570	0	0	181	41	0	392	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	48.4	45.4			30.8			35.9	35.9		35.9	
Actuated g/C Ratio	0.52	0.49			0.33			0.38	0.38		0.38	
v/c Ratio	0.33	0.65			0.55			0.38	0.06		0.73	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	15.9	23.6			29.0			23.1	3.9		31.9	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	15.9	23.6			29.0			23.1	3.9		31.9	
LOS	B	C			C			C	A		C	
Approach Delay (s/veh)		22.0			29.0			19.6			31.9	
Approach LOS		C			C			B			C	
90th %ile Green (s)	13.9	49.9		32.0	32.0		50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold	Hold	Max	Max	
70th %ile Green (s)	12.0	46.0		30.0	30.0		42.3	42.3	42.3	42.3	42.3	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	10.8	44.8		30.0	30.0		37.3	37.3	37.3	37.3	37.3	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	9.1	43.1		30.0	30.0		29.9	29.9	29.9	29.9	29.9	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	7.2	41.2		30.0	30.0		23.2	23.2	23.2	23.2	23.2	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 93.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 25.8	Intersection LOS: C
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	
90th %ile Actuated Cycle: 111.9	
70th %ile Actuated Cycle: 100.3	
50th %ile Actuated Cycle: 94.1	
30th %ile Actuated Cycle: 85	
10th %ile Actuated Cycle: 76.4	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	446	111	30	411	107	92	82	39	156	106	114
Future Volume (veh/h)	145	446	111	30	411	107	92	82	39	156	106	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1885	1885	1870	1856	1870	1811	1870
Adj Flow Rate, veh/h	151	465	116	31	428	111	96	85	41	162	110	119
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	0	0	1	1	1	2	3	2	6	2
Cap, veh/h	401	649	162	77	859	219	299	247	637	239	158	149
Arrive On Green	0.08	0.45	0.45	0.34	0.34	0.34	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1810	1444	360	97	2559	654	586	610	1571	448	390	367
Grp Volume(v), veh/h	151	0	581	299	0	271	181	0	41	391	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1804	1715	0	1594	1197	0	1571	1205	0	0
Q Serve(g_s), s	4.6	0.0	23.4	0.2	0.0	12.1	0.0	0.0	1.4	18.9	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	23.4	13.4	0.0	12.1	9.1	0.0	1.4	28.0	0.0	0.0
Prop In Lane	1.00		0.20	0.10		0.41	0.53		1.00	0.41		0.30
Lane Grp Cap(c), veh/h	401	0	810	620	0	535	547	0	637	545	0	0
V/C Ratio(X)	0.38	0.00	0.72	0.48	0.00	0.51	0.33	0.00	0.06	0.72	0.00	0.00
Avail Cap(c_a), veh/h	863	0	1009	994	0	892	547	0	637	768	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.8	0.0	20.0	23.5	0.0	23.8	18.2	0.0	16.2	26.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.9	0.6	0.0	0.7	0.4	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	5.5	4.0	0.0	3.6	1.6	0.0	0.3	6.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.3	0.0	21.9	24.0	0.0	24.5	18.5	0.0	16.3	27.9	0.0	0.0
LnGrp LOS	B		C	C		C	B		B	C		
Approach Vol, veh/h		732			570			222			391	
Approach Delay, s/veh		20.9			24.3			18.1			27.9	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.2	37.0		42.2		47.2		42.2
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	6.6	15.4		11.1		25.4		30.0
Green Ext Time (p_c), s	0.8	11.5		1.4		10.7		6.3

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	34	37	215	202	15
Future Volume (vph)	15	34	37	215	202	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.907				0.991	
Flt Protected	0.985			0.993		
Satd. Flow (prot)	1716	0	0	1908	1904	0
Flt Permitted	0.985			0.993		
Satd. Flow (perm)	1716	0	0	1908	1904	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	80.4			122.6	188.9	
Travel Time (s)	5.8			8.8	13.6	
Confl. Peds. (#/hr)			3			3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	36	39	229	215	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	0	268	231	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 38.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	34	37	215	202	15
Future Vol, veh/h	15	34	37	215	202	15
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	36	39	229	215	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	533	226	234	0	-	0
Stage 1	226	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	511	819	1345	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	492	816	1342	-	-	-
Mov Cap-2 Maneuver	492	-	-	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.74	1.14	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	264	-	679	-	-
HCM Lane V/C Ratio	0.029	-	0.077	-	-
HCM Ctrl Dly (s/v)	7.8	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	9	246	8	6	230
Future Volume (vph)	4	9	246	8	6	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904		0.996			
Flt Protected	0.986					0.999
Satd. Flow (prot)	1712	0	1913	0	0	1919
Flt Permitted	0.986					0.999
Satd. Flow (perm)	1712	0	1913	0	0	1919
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	10	262	9	6	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	271	0	0	251
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 26.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	9	246	8	6	230
Future Vol, veh/h	4	9	246	8	6	230
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	10	262	9	6	245

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	525	266	0	0	270	0
Stage 1	266	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	516	778	-	-	1305	-
Stage 1	783	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	512	778	-	-	1305	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.48	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	46	-
HCM Lane V/C Ratio	-	-	0.021	0.005	-
HCM Ctrl Dly (s/v)	-	-	10.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	15	68	29	23	7	55	218	32	2	196	20
Future Volume (vph)	30	15	68	29	23	7	55	218	32	2	196	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.983			0.986			0.987	
Flt Protected		0.987			0.976			0.991				
Satd. Flow (prot)	0	1743	0	0	1843	0	0	1864	0	0	1879	0
Flt Permitted		0.987			0.976			0.991				
Satd. Flow (perm)	0	1743	0	0	1843	0	0	1864	0	0	1879	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	3					3	5					5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	1%	0%
Adj. Flow (vph)	32	16	73	31	25	8	59	234	34	2	211	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	64	0	0	327	0	0	235	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 45.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	15	68	29	23	7	55	218	32	2	196	20
Future Vol, veh/h	30	15	68	29	23	7	55	218	32	2	196	20
Conflicting Peds, #/hr	3	0	0	0	0	3	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	4	0	0	0	1	0
Mvmt Flow	32	16	73	31	25	8	59	234	34	2	211	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	599	618	227	593	611	255	237	0	0	269	0	0
Stage 1	231	231	-	370	370	-	-	-	-	-	-	-
Stage 2	368	387	-	223	242	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	416	408	818	420	411	789	1318	-	-	1306	-	-
Stage 1	777	717	-	654	624	-	-	-	-	-	-	-
Stage 2	656	613	-	784	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	363	383	814	347	387	787	1312	-	-	1306	-	-
Mov Cap-2 Maneuver	363	383	-	347	387	-	-	-	-	-	-	-
Stage 1	772	712	-	619	591	-	-	-	-	-	-	-
Stage 2	588	580	-	696	705	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.38	16.07	1.42	0.07
HCM LOS	B	C		

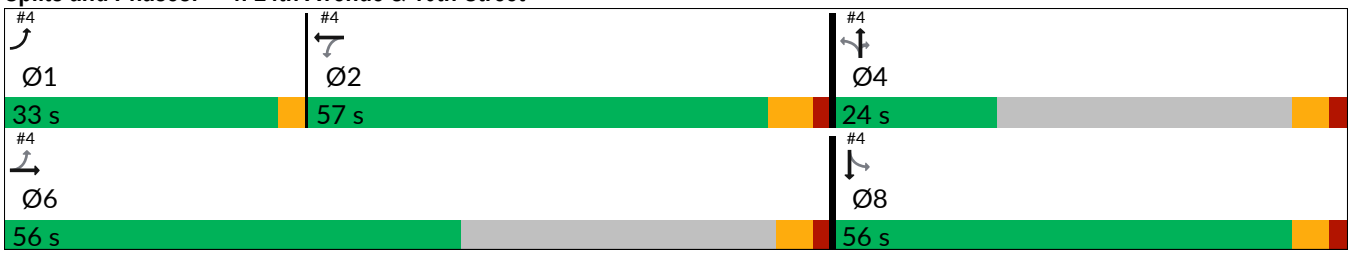
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	316	-	-	551	388	16	-	-
HCM Lane V/C Ratio	0.045	-	-	0.221	0.163	0.002	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	13.4	16.1	7.8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.6	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	416	98	24	409	115	80	83	35	172	93	141
Future Volume (vph)	168	416	98	24	409	115	80	83	35	172	93	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00						1.00	
Frt		0.971			0.969				0.850		0.953	
Flt Protected	0.950				0.998			0.976			0.979	
Satd. Flow (prot)	1825	1865	0	0	3524	0	0	1875	1633	0	1777	0
Flt Permitted	0.315				0.910			0.669			0.782	
Satd. Flow (perm)	604	1865	0	0	3214	0	0	1285	1633	0	1420	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			25				52		20	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Adj. Flow (vph)	177	438	103	25	431	121	84	87	37	181	98	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	541	0	0	577	0	0	171	37	0	427	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	49.3	46.3			30.6			39.1	39.1		39.1	
Actuated g/C Ratio	0.51	0.47			0.31			0.40	0.40		0.40	
v/c Ratio	0.39	0.61			0.56			0.33	0.05		0.74	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	17.6	23.4			31.0			22.1	3.2		32.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	17.6	23.4			31.0			22.1	3.2		32.1	
LOS	B	C			C			C	A		C	
Approach Delay (s/veh)		22.0			31.0			18.7			32.1	
Approach LOS		C			C			B			C	
90th %ile Green (s)	15.3	50.6		31.3	31.3		50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Gap	Hold		Gap	Gap		Hold	Hold	Hold	Max	Max	
70th %ile Green (s)	13.2	47.2		30.0	30.0		46.7	46.7	46.7	46.7	46.7	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	11.8	45.8		30.0	30.0		39.8	39.8	39.8	39.8	39.8	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	10.4	44.4		30.0	30.0		34.2	34.2	34.2	34.2	34.2	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	8.0	42.0		30.0	30.0		27.0	27.0	27.0	27.0	27.0	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 97.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay (s/veh): 26.5	Intersection LOS: C
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	
90th %ile Actuated Cycle: 112.6	
70th %ile Actuated Cycle: 105.9	
50th %ile Actuated Cycle: 97.6	
30th %ile Actuated Cycle: 90.6	
10th %ile Actuated Cycle: 81	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	416	98	24	409	115	80	83	35	172	93	141
Future Volume (veh/h)	168	416	98	24	409	115	80	83	35	172	93	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1885	1885	1900
Adj Flow Rate, veh/h	177	438	103	25	431	121	84	87	37	181	98	148
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	1	1	0
Cap, veh/h	405	665	156	67	847	231	291	284	663	262	136	182
Arrive On Green	0.09	0.45	0.45	0.32	0.32	0.32	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1810	1487	350	77	2617	715	566	690	1608	501	331	441
Grp Volume(v), veh/h	177	0	541	307	0	270	171	0	37	427	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1836	1811	0	1598	1256	0	1608	1273	0	0
Q Serve(g_s), s	5.7	0.0	21.4	0.0	0.0	12.8	0.0	0.0	1.3	21.8	0.0	0.0
Cycle Q Clear(g_c), s	5.7	0.0	21.4	12.1	0.0	12.8	7.9	0.0	1.3	29.7	0.0	0.0
Prop In Lane	1.00		0.19	0.08		0.45	0.49		1.00	0.42		0.35
Lane Grp Cap(c), veh/h	405	0	821	628	0	517	576	0	663	580	0	0
V/C Ratio(X)	0.44	0.00	0.66	0.49	0.00	0.52	0.30	0.00	0.06	0.74	0.00	0.00
Avail Cap(c_a), veh/h	825	0	991	1003	0	862	576	0	663	769	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	0.0	20.1	25.3	0.0	25.5	18.0	0.0	16.4	26.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.2	0.6	0.0	0.8	0.3	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	5.5	4.7	0.0	4.2	1.6	0.0	0.3	7.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.5	0.0	21.3	25.9	0.0	26.3	18.3	0.0	16.4	29.3	0.0	0.0
LnGrp LOS	B		C	C		C	B		B	C		
Approach Vol, veh/h		718			577			208			427	
Approach Delay, s/veh		20.6			26.1			18.0			29.3	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.5	37.0		44.2		48.5		44.2
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	7.7	14.8		9.9		23.4		31.7
Green Ext Time (p_c), s	0.9	11.6		1.4		10.3		6.5

Intersection Summary	
HCM 7th Control Delay, s/veh	23.9
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix F

2035 Total Traffic Operations Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	41	44	0	13	14	160	17	7	166	6
Future Volume (vph)	20	0	41	44	0	13	14	160	17	7	166	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.909			0.970			0.990			0.995	
Flt Protected		0.984			0.963			0.996			0.998	
Satd. Flow (prot)	0	1718	0	0	1759	0	0	1844	0	0	1872	0
Flt Permitted		0.984			0.963			0.996			0.998	
Satd. Flow (perm)	0	1718	0	0	1759	0	0	1844	0	0	1872	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		80.4			146.4			122.6			188.9	
Travel Time (s)		5.8			10.5			8.8			13.6	
Peak Hour Factor	0.78	0.92	0.78	0.92	0.92	0.92	0.78	0.78	0.92	0.92	0.78	0.78
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	3%	2%	2%	2%	0%
Adj. Flow (vph)	26	0	53	48	0	14	18	205	18	8	213	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	62	0	0	241	0	0	229	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	41	44	0	13	14	160	17	7	166	6
Future Vol, veh/h	20	0	41	44	0	13	14	160	17	7	166	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	92	92	92	78	78	92	92	78	78
Heavy Vehicles, %	0	2	0	2	2	2	0	3	2	2	2	0
Mvmt Flow	26	0	53	48	0	14	18	205	18	8	213	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	473	491	217	478	486	214	221	0	0	224	0	0
Stage 1	232	232	-	250	250	-	-	-	-	-	-	-
Stage 2	241	260	-	228	236	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	478	828	497	481	826	1361	-	-	1345	-	-
Stage 1	776	713	-	754	700	-	-	-	-	-	-	-
Stage 2	767	693	-	775	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	486	468	828	456	471	826	1361	-	-	1345	-	-
Mov Cap-2 Maneuver	486	468	-	456	471	-	-	-	-	-	-	-
Stage 1	771	708	-	742	689	-	-	-	-	-	-	-
Stage 2	742	683	-	721	705	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.06	13.07	0.57	0.26
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	132	-	-	673	508	60	-	-
HCM Lane V/C Ratio	0.013	-	-	0.116	0.122	0.006	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	11.1	13.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	1	165	6	2	265
Future Volume (vph)	17	1	165	6	2	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994		0.996			
Flt Protected	0.954					
Satd. Flow (prot)	1822	0	1776	0	0	1791
Flt Permitted	0.954					
Satd. Flow (perm)	1822	0	1776	0	0	1791
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	50%	7%
Adj. Flow (vph)	21	1	204	7	2	327
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	211	0	0	329
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 25.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	1	165	6	2	265
Future Vol, veh/h	17	1	165	6	2	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	50	7
Mvmt Flow	21	1	204	7	2	327

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	540	207	0	0	211	0
Stage 1	207	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.6	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.65	-
Pot Cap-1 Maneuver	507	838	-	-	1120	-
Stage 1	832	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	838	-	-	1120	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.28	0	0.06
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	517	13	-
HCM Lane V/C Ratio	-	-	0.043	0.002	-
HCM Ctrl Dly (s/v)	-	-	12.3	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	15	43	22	20	6	51	141	15	3	227	50
Future Volume (vph)	24	15	43	22	20	6	51	141	15	3	227	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930			0.983			0.990			0.976	
Flt Protected		0.985			0.978			0.988				
Satd. Flow (prot)	0	1677	0	0	1806	0	0	1761	0	0	1770	0
Flt Permitted		0.985			0.978			0.988				
Satd. Flow (perm)	0	1677	0	0	1806	0	0	1761	0	0	1770	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		2	2		6	9					9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	0%	6%	5%	0%	0%	5%	8%	0%	0%	6%	6%
Adj. Flow (vph)	28	17	49	25	23	7	59	162	17	3	261	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	55	0	0	238	0	0	321	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	15	43	22	20	6	51	141	15	3	227	50
Future Vol, veh/h	24	15	43	22	20	6	51	141	15	3	227	50
Conflicting Peds, #/hr	6	0	2	2	0	6	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	6	0	6	5	0	0	5	8	0	0	6	6
Mvmt Flow	28	17	49	25	23	7	59	162	17	3	261	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	602	602	301	566	622	177	327	0	0	179	0	0
Stage 1	306	306	-	288	288	-	-	-	-	-	-	-
Stage 2	297	297	-	278	334	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.5	6.26	7.15	6.5	6.2	4.15	-	-	4.1	-	-
Critical Hdwy Stg 1	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.354	3.545	4	3.3	2.245	-	-	2.2	-	-
Pot Cap-1 Maneuver	406	416	730	430	405	872	1216	-	-	1409	-	-
Stage 1	696	665	-	713	677	-	-	-	-	-	-	-
Stage 2	703	672	-	722	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	353	389	722	361	379	867	1205	-	-	1409	-	-
Mov Cap-2 Maneuver	353	389	-	361	379	-	-	-	-	-	-	-
Stage 1	688	658	-	675	641	-	-	-	-	-	-	-
Stage 2	633	635	-	651	639	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.01	15.49	2.01	0.08
HCM LOS	B	C		

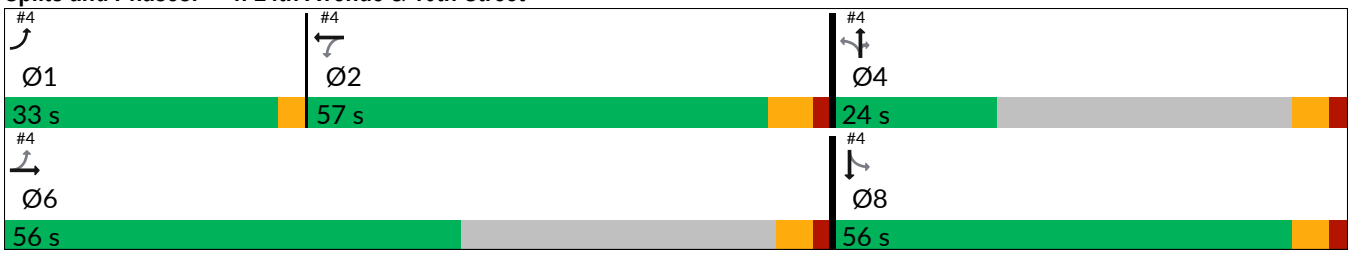
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	435	-	-	494	398	19	-	-
HCM Lane V/C Ratio	0.049	-	-	0.191	0.139	0.002	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	14	15.5	7.6	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.5	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	256	43	8	326	71	65	67	19	95	55	165
Future Volume (vph)	130	256	43	8	326	71	65	67	19	95	55	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00						1.00	
Frt		0.979			0.974				0.850		0.929	
Flt Protected	0.950				0.999			0.976			0.985	
Satd. Flow (prot)	1722	1806	0	0	3320	0	0	1745	1445	0	1634	0
Flt Permitted	0.453				0.946			0.660			0.847	
Satd. Flow (perm)	819	1806	0	0	3143	0	0	1180	1445	0	1405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			19				52		41	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	11%	0%	7%	7%	11%	4%	13%	9%	6%	7%
Adj. Flow (vph)	140	275	46	9	351	76	70	72	20	102	59	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	321	0	0	436	0	0	142	20	0	338	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	47.1	44.1			30.4			23.3	23.3		23.3	
Actuated g/C Ratio	0.59	0.55			0.38			0.29	0.29		0.29	
v/c Ratio	0.24	0.32			0.36			0.41	0.04		0.77	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	9.7	11.5			19.6			26.4	0.7		34.8	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.7	11.5			19.6			26.4	0.7		34.8	
LOS	A	B			B			C	A		C	
Approach Delay (s/veh)		11.0			19.6			23.2			34.8	
Approach LOS		B			B			C			C	
90th %ile Green (s)	13.9	47.9		30.0	30.0		34.4	34.4	34.4	34.4	34.4	
90th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
70th %ile Green (s)	10.9	44.9		30.0	30.0		27.2	27.2	27.2	27.2	27.2	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
50th %ile Green (s)	9.3	43.3		30.0	30.0		22.9	22.9	22.9	22.9	22.9	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	8.0	42.0		30.0	30.0		19.1	19.1	19.1	19.1	19.1	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	6.6	40.6		30.0	30.0		15.0	15.0	15.0	15.0	15.0	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Min	Min	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 79.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 20.8	Intersection LOS: C
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 94.3	
70th %ile Actuated Cycle: 84.1	
50th %ile Actuated Cycle: 78.2	
30th %ile Actuated Cycle: 73.1	
10th %ile Actuated Cycle: 67.6	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	256	43	8	326	71	65	67	19	95	55	165
Future Volume (veh/h)	130	256	43	8	326	71	65	67	19	95	55	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1856	1737	1900	1796	1796	1737	1841	1707	1767	1811	1796
Adj Flow Rate, veh/h	140	275	46	9	351	76	70	72	20	102	59	177
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	3	11	0	7	7	11	4	13	9	6	7
Cap, veh/h	494	774	129	56	1045	220	245	230	483	172	108	242
Arrive On Green	0.08	0.50	0.50	0.38	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1725	1549	259	21	2717	573	527	688	1446	336	325	726
Grp Volume(v), veh/h	140	0	321	233	0	203	142	0	20	338	0	0
Grp Sat Flow(s),veh/h/ln	1725	0	1808	1780	0	1530	1215	0	1446	1386	0	0
Q Serve(g_s), s	3.5	0.0	8.4	0.0	0.0	7.3	0.0	0.0	0.7	11.1	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	8.4	7.1	0.0	7.3	6.4	0.0	0.7	17.5	0.0	0.0
Prop In Lane	1.00		0.14	0.04		0.37	0.49		1.00	0.30		0.52
Lane Grp Cap(c), veh/h	494	0	903	733	0	589	475	0	483	523	0	0
V/C Ratio(X)	0.28	0.00	0.36	0.32	0.00	0.35	0.30	0.00	0.04	0.65	0.00	0.00
Avail Cap(c_a), veh/h	1026	0	1159	1180	0	981	475	0	483	977	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	11.9	17.0	0.0	17.0	19.1	0.0	17.5	23.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.2	0.0	0.3	0.3	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.3	1.4	0.0	1.2	1.1	0.0	0.1	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.2	0.0	12.1	17.2	0.0	17.4	19.5	0.0	17.6	24.7	0.0	0.0
LnGrp LOS	B		B	B		B	B		B	C		
Approach Vol, veh/h		461			436			162			338	
Approach Delay, s/veh		12.1			17.3			19.2			24.7	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.9	37.0		32.0		45.9		32.0
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	5.5	9.3		8.4		10.4		19.5
Green Ext Time (p_c), s	0.7	8.8		1.2		6.4		6.5

Intersection Summary	
HCM 7th Control Delay, s/veh	17.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	29	37	0	11	41	239	47	14	194	39
Future Volume (vph)	22	0	29	37	0	11	41	239	47	14	194	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.923			0.969			0.981			0.979	
Flt Protected		0.979			0.963			0.994			0.997	
Satd. Flow (prot)	0	1736	0	0	1758	0	0	1854	0	0	1789	0
Flt Permitted		0.979			0.963			0.994			0.997	
Satd. Flow (perm)	0	1736	0	0	1758	0	0	1854	0	0	1789	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		80.4			166.0			122.6			188.9	
Travel Time (s)		5.8			12.0			8.8			13.6	
Confl. Peds. (#/hr)			1				1					1
Peak Hour Factor	0.91	0.92	0.91	0.92	0.92	0.92	0.91	0.91	0.92	0.92	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	1%	2%	2%	6%	0%
Adj. Flow (vph)	24	0	32	40	0	12	45	263	51	15	213	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	52	0	0	359	0	0	271	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 40.8%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	0	29	37	0	11	41	239	47	14	194	39
Future Vol, veh/h	22	0	29	37	0	11	41	239	47	14	194	39
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	92	91	92	92	92	91	91	92	92	91	91
Heavy Vehicles, %	0	2	0	2	2	2	0	1	2	2	6	0
Mvmt Flow	24	0	32	40	0	12	45	263	51	15	213	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	619	670	237	623	666	288	257	0	0	314	0	0
Stage 1	266	266	-	378	378	-	-	-	-	-	-	-
Stage 2	353	404	-	245	287	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	404	378	807	399	380	751	1319	-	-	1247	-	-
Stage 1	744	689	-	643	615	-	-	-	-	-	-	-
Stage 2	668	599	-	759	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	375	357	806	361	359	751	1318	-	-	1247	-	-
Mov Cap-2 Maneuver	375	357	-	361	359	-	-	-	-	-	-	-
Stage 1	732	678	-	617	589	-	-	-	-	-	-	-
Stage 2	630	574	-	718	664	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.45	15.06	0.98	0.44
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	219	-	-	539	410	98	-	-
HCM Lane V/C Ratio	0.034	-	-	0.104	0.127	0.012	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	12.5	15.1	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	5	319	13	2	259
Future Volume (vph)	8	5	319	13	2	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.952		0.995			
Flt Protected	0.969					
Satd. Flow (prot)	1772	0	1893	0	0	1813
Flt Permitted	0.969					
Satd. Flow (perm)	1772	0	1893	0	0	1813
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	1%	0%	0%	6%
Adj. Flow (vph)	9	5	343	14	2	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	357	0	0	280
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 27.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	5	319	13	2	259
Future Vol, veh/h	8	5	319	13	2	259
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	6
Mvmt Flow	9	5	343	14	2	278

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	635	350	0	0	357	0
Stage 1	350	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	446	698	-	-	1213	-
Stage 1	718	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	444	698	-	-	1213	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.17	0	0.06
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	516	14	-
HCM Lane V/C Ratio	-	-	0.027	0.002	-
HCM Ctrl Dly (s/v)	-	-	12.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	13	82	22	8	4	67	293	28	2	224	44
Future Volume (vph)	36	13	82	22	8	4	67	293	28	2	224	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.915			0.983			0.990			0.978	
Flt Protected		0.987			0.969			0.991				
Satd. Flow (prot)	0	1721	0	0	1773	0	0	1871	0	0	1776	0
Flt Permitted		0.987			0.969			0.991				
Satd. Flow (perm)	0	1721	0	0	1773	0	0	1871	0	0	1776	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	6		1	1		6	6					6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	8%	0%	5%	0%	0%	0%	1%	0%	0%	7%	0%
Adj. Flow (vph)	41	15	94	25	9	5	77	337	32	2	257	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	150	0	0	39	0	0	446	0	0	310	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	13	82	22	8	4	67	293	28	2	224	44
Future Vol, veh/h	36	13	82	22	8	4	67	293	28	2	224	44
Conflicting Peds, #/hr	6	0	1	1	0	6	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	8	0	5	0	0	0	1	0	0	7	0
Mvmt Flow	41	15	94	25	9	5	77	337	32	2	257	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	795	816	290	777	826	359	314	0	0	369	0	0
Stage 1	293	293	-	507	507	-	-	-	-	-	-	-
Stage 2	501	523	-	271	319	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.58	6.2	7.15	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.58	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.072	3.3	3.545	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	308	305	754	310	310	690	1258	-	-	1201	-	-
Stage 1	719	659	-	543	543	-	-	-	-	-	-	-
Stage 2	556	521	-	729	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	270	279	749	237	283	686	1251	-	-	1201	-	-
Mov Cap-2 Maneuver	270	279	-	237	283	-	-	-	-	-	-	-
Stage 1	713	654	-	500	500	-	-	-	-	-	-	-
Stage 2	497	480	-	620	652	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.87	20.72	1.39	0.06
HCM LOS	C	C		

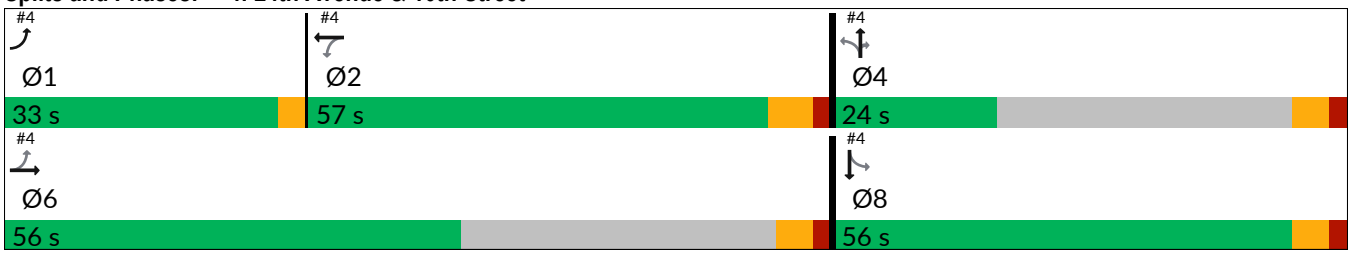
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	305	-	-	453	268	13	-	-
HCM Lane V/C Ratio	0.062	-	-	0.333	0.146	0.002	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	16.9	20.7	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	446	111	30	411	125	92	92	39	170	114	130
Future Volume (vph)	166	446	111	30	411	125	92	92	39	170	114	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00						1.00	
Frt		0.970			0.967				0.850		0.958	
Flt Protected	0.950				0.997			0.976			0.980	
Satd. Flow (prot)	1825	1829	0	0	3480	0	0	1847	1585	0	1748	0
Flt Permitted	0.287				0.876			0.656			0.765	
Satd. Flow (perm)	550	1829	0	0	3057	0	0	1242	1585	0	1364	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			27				52		17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2		3	3		2	1					1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	1%	2%	3%	2%	6%	2%
Adj. Flow (vph)	173	465	116	31	428	130	96	96	41	177	119	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	581	0	0	589	0	0	192	41	0	431	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	49.3	46.3			30.7			46.9	46.9		46.9	
Actuated g/C Ratio	0.47	0.44			0.29			0.45	0.45		0.45	
v/c Ratio	0.43	0.72			0.65			0.35	0.06		0.70	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	20.5	29.8			35.7			21.7	3.8		30.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	20.5	29.8			35.7			21.7	3.8		30.1	
LOS	C	C			D			C	A		C	
Approach Delay (s/veh)		27.7			35.7			18.6			30.1	
Approach LOS		C			D			B			C	
90th %ile Green (s)	15.1	52.0		32.9	32.9		50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Gap	Hold		Gap	Gap		Hold	Hold	Hold	Max	Max	
70th %ile Green (s)	13.0	47.0		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Max	Max	
50th %ile Green (s)	11.6	45.6		30.0	30.0		49.2	49.2	49.2	49.2	49.2	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
30th %ile Green (s)	10.3	44.3		30.0	30.0		44.7	44.7	44.7	44.7	44.7	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	
10th %ile Green (s)	8.5	42.5		30.0	30.0		40.6	40.6	40.6	40.6	40.6	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Gap	Gap	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 105.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 29.5	Intersection LOS: C
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	
90th %ile Actuated Cycle: 114	
70th %ile Actuated Cycle: 109	
50th %ile Actuated Cycle: 106.8	
30th %ile Actuated Cycle: 101	
10th %ile Actuated Cycle: 95.1	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	446	111	30	411	125	92	92	39	170	114	130
Future Volume (veh/h)	166	446	111	30	411	125	92	92	39	170	114	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1885	1885	1870	1856	1870	1811	1870
Adj Flow Rate, veh/h	173	465	116	31	428	130	96	96	41	177	119	135
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	0	0	1	1	1	2	3	2	6	2
Cap, veh/h	380	626	156	69	746	229	293	276	677	246	157	160
Arrive On Green	0.09	0.43	0.43	0.31	0.31	0.31	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1810	1444	360	89	2387	734	550	641	1571	449	365	372
Grp Volume(v), veh/h	173	0	581	309	0	280	192	0	41	431	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1804	1631	0	1579	1191	0	1571	1186	0	0
Q Serve(g_s), s	5.9	0.0	25.8	1.7	0.0	14.2	0.0	0.0	1.5	23.8	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	25.8	15.9	0.0	14.2	9.9	0.0	1.5	33.7	0.0	0.0
Prop In Lane	1.00		0.20	0.10		0.47	0.50		1.00	0.41		0.31
Lane Grp Cap(c), veh/h	380	0	782	551	0	494	569	0	677	564	0	0
V/C Ratio(X)	0.46	0.00	0.74	0.56	0.00	0.57	0.34	0.00	0.06	0.76	0.00	0.00
Avail Cap(c_a), veh/h	783	0	940	900	0	823	569	0	677	693	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.4	0.0	22.7	27.3	0.0	27.6	18.0	0.0	16.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	2.6	0.9	0.0	1.0	0.3	0.0	0.0	4.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	7.9	5.4	0.0	5.0	1.9	0.0	0.4	8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.2	0.0	25.3	28.2	0.0	28.6	18.4	0.0	16.0	31.8	0.0	0.0
LnGrp LOS	C		C	C		C	B		B	C		
Approach Vol, veh/h		754			589			233			431	
Approach Delay, s/veh		24.1			28.4			18.0			31.8	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.6	37.0		47.4		48.6		47.4
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	7.9	17.9		11.9		27.8		35.7
Green Ext Time (p_c), s	0.9	11.5		1.3		10.1		5.6

Intersection Summary	
HCM 7th Control Delay, s/veh	26.3
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	34	38	0	11	37	215	39	11	202	15
Future Volume (vph)	15	0	34	38	0	11	37	215	39	11	202	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.907			0.969			0.982			0.991	
Flt Protected		0.985			0.963			0.994			0.998	
Satd. Flow (prot)	0	1716	0	0	1758	0	0	1870	0	0	1898	0
Flt Permitted		0.985			0.963			0.994			0.998	
Satd. Flow (perm)	0	1716	0	0	1758	0	0	1870	0	0	1898	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		80.4			160.9			122.6			188.9	
Travel Time (s)		5.8			11.6			8.8			13.6	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	16	0	36	41	0	12	39	229	42	12	215	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	53	0	0	310	0	0	243	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 40.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	34	38	0	11	37	215	39	11	202	15
Future Vol, veh/h	15	0	34	38	0	11	37	215	39	11	202	15
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	92	94	92	92	92	94	94	92	92	94	94
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	16	0	36	41	0	12	39	229	42	12	215	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	557	600	226	567	586	250	234	0	0	271	0	0
Stage 1	250	250	-	329	329	-	-	-	-	-	-	-
Stage 2	307	350	-	239	258	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	444	415	819	434	422	789	1345	-	-	1292	-	-
Stage 1	759	700	-	684	647	-	-	-	-	-	-	-
Stage 2	707	633	-	765	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	416	395	816	396	402	789	1342	-	-	1292	-	-
Mov Cap-2 Maneuver	416	395	-	396	402	-	-	-	-	-	-	-
Stage 1	749	691	-	661	624	-	-	-	-	-	-	-
Stage 2	672	611	-	723	685	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.22	14.17	0.98	0.38
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	221	-	-	631	446	87	-	-
HCM Lane V/C Ratio	0.029	-	-	0.083	0.119	0.009	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	11.2	14.2	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	9	285	15	6	268
Future Volume (vph)	12	9	285	15	6	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941		0.993			
Flt Protected	0.973					0.999
Satd. Flow (prot)	1759	0	1908	0	0	1919
Flt Permitted	0.973					0.999
Satd. Flow (perm)	1759	0	1908	0	0	1919
Link Speed (k/h)	50		50			50
Link Distance (m)	141.5		294.4			122.6
Travel Time (s)	10.2		21.2			8.8
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	13	10	303	16	6	285
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	319	0	0	291
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	9	285	15	6	268
Future Vol, veh/h	12	9	285	15	6	268
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	10	303	16	6	285

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	611	311	0	0	319	0
Stage 1	311	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	460	734	-	-	1252	-
Stage 1	747	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	457	734	-	-	1252	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.89	0	0.17
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	545	39	-
HCM Lane V/C Ratio	-	-	0.041	0.005	-
HCM Ctrl Dly (s/v)	-	-	11.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	15	68	29	23	7	55	258	32	2	236	26
Future Volume (vph)	36	15	68	29	23	7	55	258	32	2	236	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.923			0.983			0.988			0.987	
Flt Protected		0.985			0.976			0.992				
Satd. Flow (prot)	0	1747	0	0	1843	0	0	1871	0	0	1879	0
Flt Permitted		0.985			0.976			0.992				
Satd. Flow (perm)	0	1747	0	0	1843	0	0	1871	0	0	1879	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.9			155.8			494.6			294.4	
Travel Time (s)		10.0			11.2			35.6			21.2	
Confl. Peds. (#/hr)	3					3	5					5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	1%	0%
Adj. Flow (vph)	39	16	73	31	25	8	59	277	34	2	254	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	64	0	0	370	0	0	284	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 50.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	15	68	29	23	7	55	258	32	2	236	26
Future Vol, veh/h	36	15	68	29	23	7	55	258	32	2	236	26
Conflicting Peds, #/hr	3	0	0	0	0	3	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	4	0	0	0	1	0
Mvmt Flow	39	16	73	31	25	8	59	277	34	2	254	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	688	707	273	679	704	298	287	0	0	312	0	0
Stage 1	277	277	-	413	413	-	-	-	-	-	-	-
Stage 2	411	430	-	266	291	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.236	-	-	2.2	-	-
Pot Cap-1 Maneuver	363	362	771	368	364	747	1264	-	-	1260	-	-
Stage 1	734	685	-	620	597	-	-	-	-	-	-	-
Stage 2	622	587	-	744	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	313	339	767	299	341	745	1258	-	-	1260	-	-
Mov Cap-2 Maneuver	313	339	-	299	341	-	-	-	-	-	-	-
Stage 1	729	680	-	585	563	-	-	-	-	-	-	-
Stage 2	553	553	-	655	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	15.2	18.02	1.28	0.06
HCM LOS	C	C		

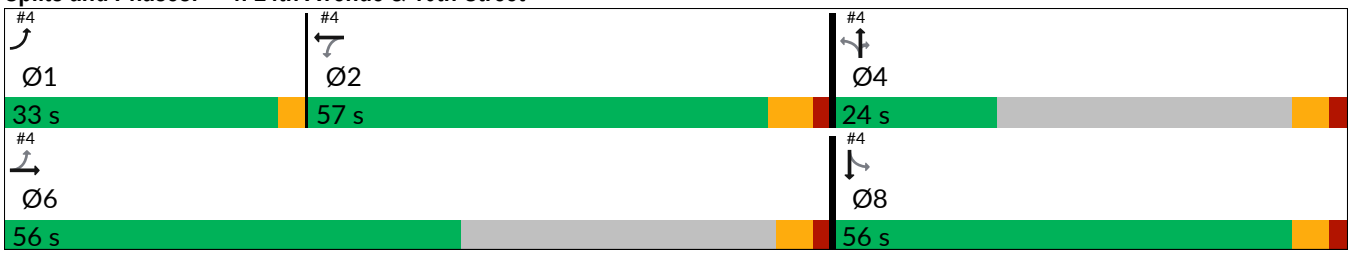
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	480	340	13	-	-
HCM Lane V/C Ratio	0.047	-	-	0.267	0.187	0.002	-	-
HCM Ctrl Dly (s/v)	8	0	-	15.2	18	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.7	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	416	98	24	409	129	80	92	35	186	102	158
Future Volume (vph)	185	416	98	24	409	129	80	92	35	186	102	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		30.0	0.0		0.0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (m)	2.5		2.5	2.5		2.5	2.5		30.0	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00						1.00	
Frt		0.971			0.966				0.850		0.952	
Flt Protected	0.950				0.998			0.977			0.980	
Satd. Flow (prot)	1825	1865	0	0	3513	0	0	1877	1633	0	1777	0
Flt Permitted	0.274				0.909			0.672			0.773	
Satd. Flow (perm)	525	1865	0	0	3200	0	0	1291	1633	0	1402	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			29				52		21	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		274.0			160.3			183.8			494.6	
Travel Time (s)		19.7			11.5			13.2			35.6	
Confl. Peds. (#/hr)	2					2	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Adj. Flow (vph)	195	438	103	25	431	136	84	97	37	196	107	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	541	0	0	592	0	0	181	37	0	469	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		30.0	30.0		10.0	10.0	10.0	15.0	15.0	
Minimum Split (s)	8.0	24.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	33.0	56.0		57.0	57.0		24.0	24.0	24.0	56.0	56.0	
Total Split (%)	22.6%	38.4%		39.0%	39.0%		16.4%	16.4%	16.4%	38.4%	38.4%	
Maximum Green (s)	30.0	50.0		50.0	50.0		18.0	18.0	18.0	50.0	50.0	
Yellow Time (s)	3.0	4.0		5.0	5.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)	3.0	6.0			7.0			6.0	6.0		6.0	
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	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	
Walk Time (s)		7.0		15.0	15.0		13.0	13.0	13.0	7.0	7.0	
Flash Don't Walk (s)		8.0		5.0	5.0		5.0	5.0	5.0	8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	50.0	47.0			30.5			50.1	50.1		50.1	
Actuated g/C Ratio	0.46	0.43			0.28			0.46	0.46		0.46	
v/c Ratio	0.50	0.67			0.65			0.31	0.05		0.72	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)	22.5	28.7			36.9			21.1	3.2		30.8	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	22.5	28.7			36.9			21.1	3.2		30.8	
LOS	C	C			D			C	A		C	
Approach Delay (s/veh)		27.1			36.9			18.0			30.8	
Approach LOS		C			D			B			C	
90th %ile Green (s)	16.3	52.6		32.3	32.3		50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Gap	Hold		Gap	Gap		Hold	Hold	Hold	Max	Max	
70th %ile Green (s)	14.0	48.0		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
70th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Max	Max	
50th %ile Green (s)	12.5	46.5		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
50th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Max	Max	
30th %ile Green (s)	11.1	45.1		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
30th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Max	Max	
10th %ile Green (s)	9.1	43.1		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
10th %ile Term Code	Gap	Hold		Min	Min		Hold	Hold	Hold	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 146	
Actuated Cycle Length: 109.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 29.9	Intersection LOS: C
Intersection Capacity Utilization 100.7%	ICU Level of Service G
Analysis Period (min) 15	
90th %ile Actuated Cycle: 114.6	
70th %ile Actuated Cycle: 110	
50th %ile Actuated Cycle: 108.5	
30th %ile Actuated Cycle: 107.1	
10th %ile Actuated Cycle: 105.1	

Splits and Phases: 4: 24th Avenue & 10th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	416	98	24	409	129	80	92	35	186	102	158
Future Volume (veh/h)	185	416	98	24	409	129	80	92	35	186	102	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1885	1885	1900
Adj Flow Rate, veh/h	195	438	103	25	431	136	84	97	37	196	107	166
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	1	1	0
Cap, veh/h	387	644	151	63	770	237	285	312	700	268	137	194
Arrive On Green	0.10	0.43	0.43	0.30	0.30	0.30	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1810	1487	350	77	2539	780	532	716	1608	497	314	444
Grp Volume(v), veh/h	195	0	541	316	0	276	181	0	37	469	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1836	1811	0	1586	1248	0	1608	1255	0	0
Q Serve(g_s), s	6.9	0.0	23.4	0.5	0.0	14.5	0.0	0.0	1.3	26.9	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	23.4	13.8	0.0	14.5	8.6	0.0	1.3	35.5	0.0	0.0
Prop In Lane	1.00		0.19	0.08		0.49	0.46		1.00	0.42		0.35
Lane Grp Cap(c), veh/h	387	0	795	588	0	481	597	0	700	598	0	0
V/C Ratio(X)	0.50	0.00	0.68	0.54	0.00	0.57	0.30	0.00	0.05	0.78	0.00	0.00
Avail Cap(c_a), veh/h	756	0	928	940	0	802	597	0	700	702	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	22.5	28.8	0.0	29.1	17.9	0.0	16.1	28.4	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.6	0.8	0.0	1.1	0.3	0.0	0.0	5.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.0	7.5	6.0	0.0	5.4	1.8	0.0	0.3	9.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.3	0.0	24.2	29.5	0.0	30.2	18.2	0.0	16.2	33.4	0.0	0.0
LnGrp LOS	C		C	C		C	B		B	C		
Approach Vol, veh/h		736			592			218			469	
Approach Delay, s/veh		23.4			29.8			17.8			33.4	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.8	37.0		49.1		49.8		49.1
Change Period (Y+Rc), s	3.0	7.0		6.0		* 7		6.0
Max Green Setting (Gmax), s	30.0	50.0		18.0		* 50		50.0
Max Q Clear Time (g_c+I1), s	8.9	16.5		10.6		25.4		37.5
Green Ext Time (p_c), s	1.0	11.7		1.4		9.8		5.6

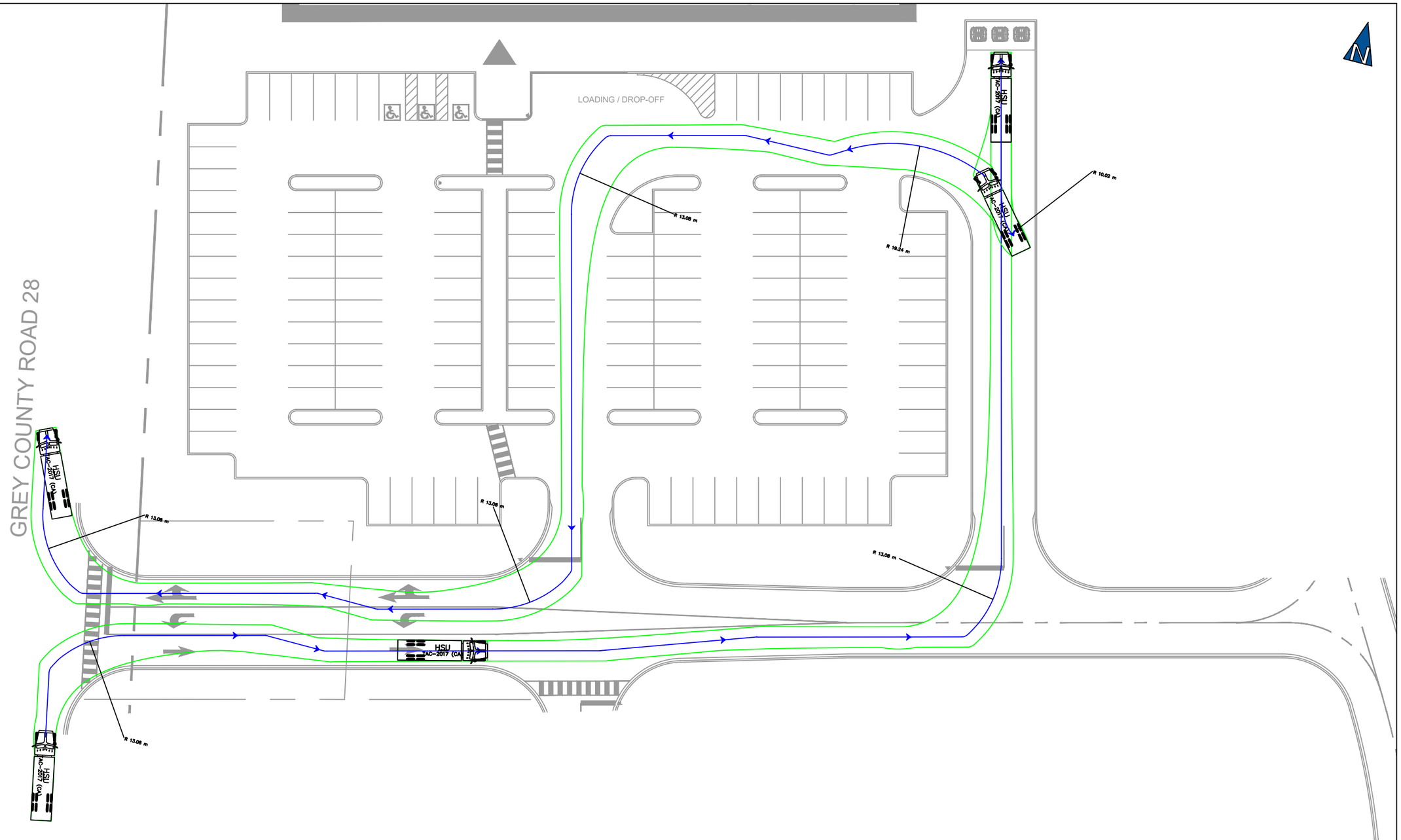
Intersection Summary	
HCM 7th Control Delay, s/veh	27.0
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

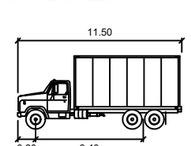
Appendix G

AutoTURN Drawings



NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



HSU

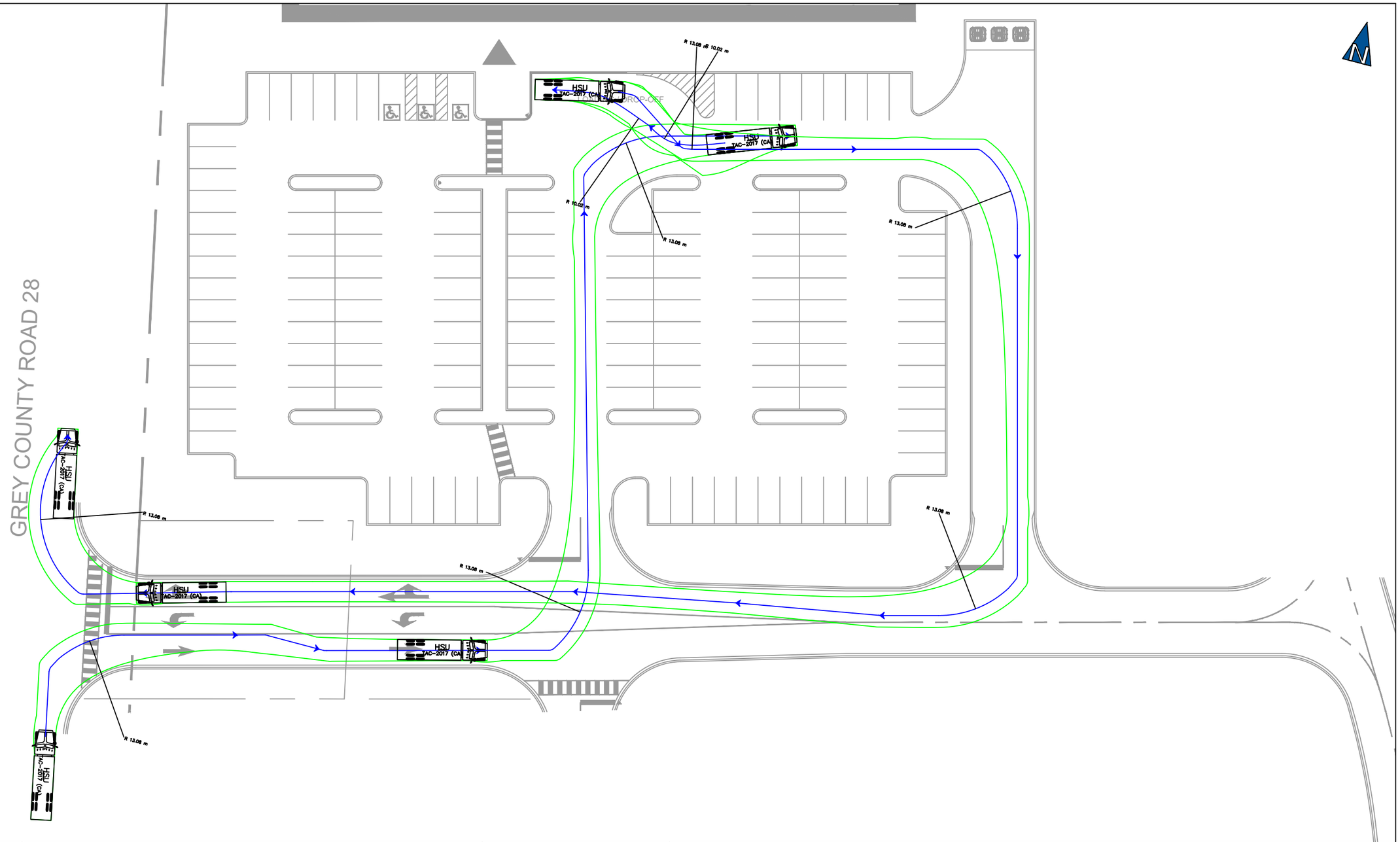
	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

AUTOTURN ASSESSMENT
741 24th AVENUE
TOWN OF HANOVER

paradigm TRANSPORTATION SOLUTIONS LIMITED

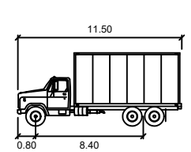
PROJECT NO.: 260123	DATE: JUN 2026	SCALE: 1:500	DRAWING NO.:
DESIGN: DC	DRAWN: DC	CHECK: PN	01

THIS DRAWING HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.



NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

AUTOTURN ASSESSMENT
741 24th AVENUE
TOWN OF HANOVER

paradigm TRANSPORTATION SOLUTIONS LIMITED

PROJECT NO.: 260123	DATE: JUN 2026	SCALE: 1:500	DRAWING NO.:
DESIGN: DC	DRAWN: DC	CHECK: PN	02

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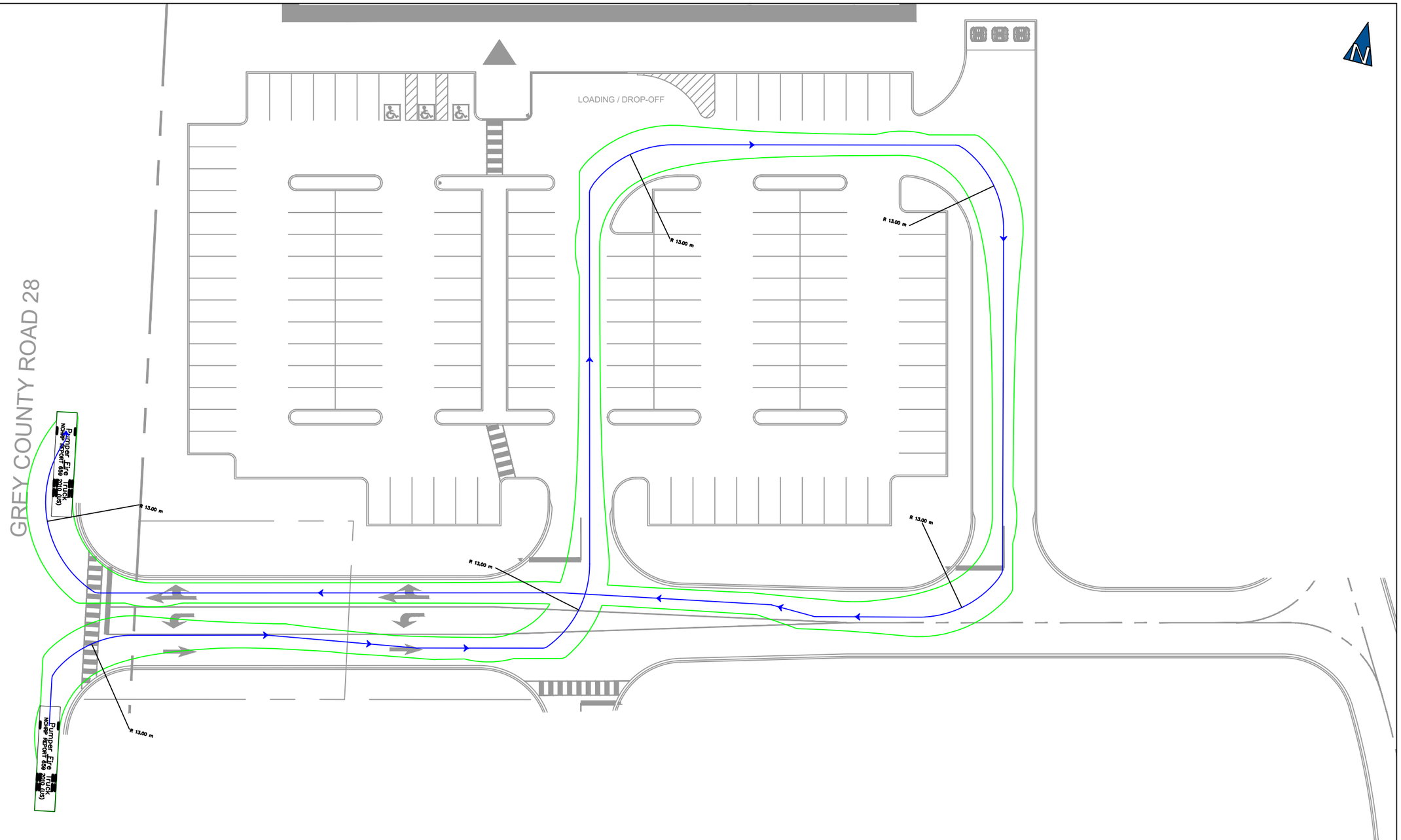
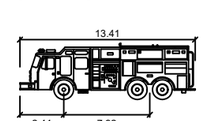


NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



Pumper Fire Truck

	meters
Width	: 2.59
Track	: 2.59
Lock to Lock Time	: 6.0
Steering Angle	: 37.8

AUTOTURN ASSESSMENT
741 24th AVENUE
TOWN OF HANOVER

paradigm TRANSPORTATION SOLUTIONS LIMITED

PROJECT NO.: 260123	DATE: JUN 2026	SCALE: 1:500	DRAWING NO.:
DESIGN: DC	DRAWN: DC	CHECK: PN	03

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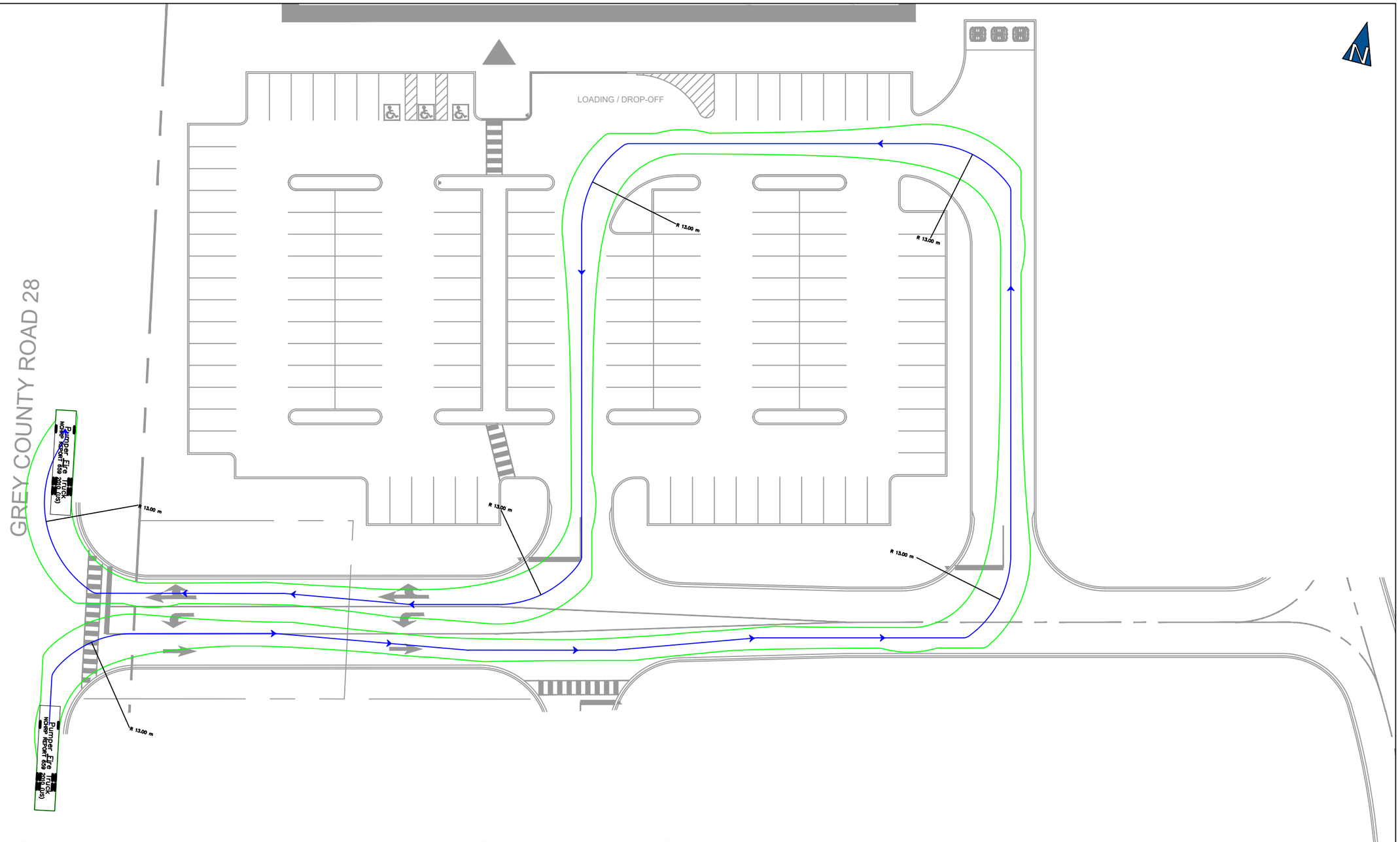
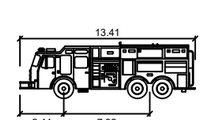


THIS DRAWING HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



Pumper Fire Truck

	meters
Width	: 2.59
Track	: 2.59
Lock to Lock Time	: 6.0
Steering Angle	: 37.8

AUTOTURN ASSESSMENT
741 24th AVENUE
TOWN OF HANOVER

paradigm TRANSPORTATION SOLUTIONS LIMITED

PROJECT NO.: 260123	DATE: JUN 2026	SCALE: 1:500	DRAWING NO.:
DESIGN: DC	DRAWN: DC	CHECK: PN	04

TOWN OF HANOVER

Municipal Development and Engineering Guidelines

Version 1

Hanover
Ontario, Canada

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SECTION 1 | INTRODUCTION

The purpose of this manual is to provide guidance to Developers, Consultants and the general public through the Town of Hanover's development approval process.

The design information contained in this manual is intended to provide direction beyond legislative and standard design practices for use in the Town of Hanover (the Town). There will be site specific situations where the design will depart from these practices as it is not possible nor is it the intention of the Town to anticipate every situation.

The appropriate Town Department Head (hereon is referred to as the Director) must approve technological or economical changes that improve or maintain the quality of the design.

These standards are to be read in conjunction with Ontario Provincial Standards (OPS) and Drawings (O.P.S.D.), Grey County standards/manuals and any other applicable regulations. However, in the case of a discrepancy the Town Standards shall prevail. The Town of Hanover maintains its right to accept or refuse any design submissions and requires an acceptable design for any given circumstance.

The design of all Town services is to be based upon the specifications and standards in effect at the time of design. All drawings are to be accepted by the Town before they are used for the construction of services; however, such approval in no way relieves the Developer's consulting engineer from providing an adequate and safe design.

The Town reserves the right to require a review and request possible revisions of previously accepted drawings if five years or more have passed between approval and construction. It is understood that these standards may be referred to as a schedule in a subdivision agreement and that the current revision of the standards are then considered part of the agreement.

These engineering standards form the basis of road reconstruction for Town driven projects.

1.1 DEFINITIONS

In this specification the following definitions shall apply:

"AODA" shall mean Accessibility for Ontarians with Disabilities Act.
"AFC" shall mean Accepted for Construction.
"AWWA" shall mean the American Water Works Association.
"CHBDC" shall mean the Canadian Highway Bridge Design Code.

“CLI-ECA” shall mean Consolidated Linear Infrastructure Environmental Compliance Approval
“Engineer" shall mean professional engineers licensed to practice in Ontario and shall be responsible for the preparation of drawings and specifications to the satisfaction of the Town.
"Contractor(s)" shall mean the firm of Contractors, the company or individual acting as the Contractor and having entered into a contract with the Developer/Owner to install the services.
"Developer(s)/Owner(s)" shall mean the person(s) causing the Works to be undertaken.
"DFO" shall mean the Department of Fisheries and Oceans, Canada.
“SVCA” shall mean the Saugeen Valley Conservation Authority.
“Landscape Architect” shall mean a professional landscape architect who is a full member of the Ontario Association of Landscape Architects with a Seal and Certificate and shall be responsible for the preparation of drawings and specifications to the satisfaction of the Town.
“Major Pumping Station” shall mean a water pumping station greater than 30 L/s and a sanitary pumping station greater than 15 L/s.
"MNRF" shall mean the Ontario Ministry of Natural Resources and Forestry.
"MECP" shall mean the Ontario Ministry of the Environment, Conservation and Parks.
"MTO" shall mean the Ontario Ministry of Transportation.
“NEC” shall mean the Niagara Escarpment Commission.
"NVCA" shall mean the Nottawasaga Valley Conservation Authority.
“OBC” shall mean the Ontario Building Code.
"OPSD" shall mean the Ontario Provincial Standard Drawings.
"OPSS" shall mean the Ontario Provincial Standard Specifications.
“TAC” shall mean the Transportation Association of Canada.
“Town” shall mean The Corporation of The Town of Hanover
"Town Representative" shall mean any person assigned to a project by the Town to carry out work on their behalf.

1.2 PURPOSE

This document is to provide the reader with a description of the process undertaken to get Town approval for Site Plan and Subdivision Developments. Draft Plan and other Planning applications that are processed by the Grey County (County) are described herein. The intention of this document is that these steps, if followed will lead to a quick and simple approval that enables construction.

Applicable Law

Development applications are reviewed and processed in accordance with relevant legislation and regulations, including but are not limited to:

- Municipal Act

- Planning Act
- Building Code Act
- Environmental Protection Act
- Safe Drinking Water Act
- Ontario Water Resources Act
- Conservation Authorities Act
- Accessibility for Ontarians with Disabilities Act
- Aggregate Resources Act
- Town of Hanover By-laws
- Grey County By-laws
- Town of Hanover Official Plan
- Town of Hanover Comprehensive Zoning Bylaw

Applicants must ensure compliance with these pieces of legislation and their enacting regulations as part of the development approval process.

Pre-consultation

Prospective applicants are encouraged to contact Hanover Development Department staff to schedule a preliminary discussion with the Town. This discussion helps clarify key requirements and expectations early in the process. Depending on the scale and complexity of the proposal, a pre-consultation meeting with relevant staff and agencies may be scheduled before submitting a formal application.

Town staff and/or the Planner will coordinate this meeting, and applicants are encouraged to bring their consultants (e.g., planners, engineers) if needed. Pre-consultation helps identify key planning considerations and any required technical studies—such as traffic, noise, or servicing assessments (e.g., hydrogeology/nitrate studies).

Applicants should submit preliminary materials to the Town at least one week before the pre-consultation meeting to allow for staff review and preliminary comments. Helpful materials include:

- Concept plans
- A detailed description of the proposed development
- Specific technical or procedural questions related to the proposal

Depending on the project's complexity, the Town may require its engineer or other consultants to attend, at the applicant’s expense.

Key Discussion Points

At the pre-consultation meeting, the following topics will typically be reviewed:

- Official Plan & Zoning By-law Compliance – If amendments or relief from policies are required, additional applications may be necessary.
- Application Requirements – This includes fees, supporting documents (e.g., contour plan, servicing plans, stormwater management, etc..) and any required agreements.
- Timelines & Scheduling – Key milestones, including next steps for the Developer and their team as well as for staff will be outlined.

Application Processing & Public Review

Once an application is submitted with all required materials, it will be reviewed by Town staff, and where applicable, relevant agencies (Saugeen Valley Conservation Authority, County staff, etc.) If applicable, technical studies may be subject to peer review at the applicant's cost.

Once the submission is deemed complete, a Public Meeting will be scheduled, and notice of the Public Meeting will be circulated to the applicable agencies, municipal departments, community organizations, and neighbouring property owners in accordance with the *Planning Act R.S.O. 1990, c. P.13.* The circulation provides an opportunity to review the application, provide comments, and identify any issues or concerns to be considered as part of the planning review process.

Staff will work with the applicant to review and, where appropriate, address any concerns or recommendations received through the circulation process. A comprehensive staff report—including draft plan conditions based on agency and public input will be prepared by staff and presented to Town of Hanover Council for review and for recommendation. The Town recommendation will then be passed on to the County for their review and final decision.

Final Approval & Development Agreements

Following draft plan approval, several conditions must be met before final approval can be granted. For subdivisions, site plans, and condominiums, applicants may be required to enter into a development agreement with the Town.

This agreement addresses infrastructure requirements, such as road construction, servicing, and will require the submission of engineered drawings that meet Town standards.

Plans of Subdivision require Subdivision Agreements as well as Development Agreements. Development Agreements are released; Subdivision Agreements are registered on title for perpetuity.

For further details or to begin the development application process, please contact the Hanover Development Department staff to schedule an initial consultation with the Town.

1.3 PLANNING APPLICATION PROCESS

1.30 Planning Application Process

1.30.1 Draft Plan Approval Application

Pre-consultation shall include discussion with:

- Required Town staff,
- County Planning staff,
- Saugeen Valley Conservation Authority (SVCA) if applicable,

1.30.2 Site Plan Application

Pre-consultation for Site Plan Approval includes discussions with:

- Town staff, as identified by Hanover Development staff,
- If needed County staff, and
- SVCA staff, if the property is within a regulated area

1.30.3 Subdivision Agreement/Pre-servicing Agreement/Site Plan Agreement

If a significant amount of time has passed since the original Draft Plan Approval, or if a new phase of the development requires special consideration, the Town may request an additional pre- consultation meeting before plans and reports are submitted.

Developers may also request this meeting at their discretion.

Re-consultation meetings typically include discussions with:

- County Planning staff,
- Town/County Public Works and Development staff, and
- SVCA staff, if applicable.

1.30.4 Draft Plan of Subdivision/Condominium Approval

A Draft Plan of Subdivision is generally required for developments that:

- Create five (5) or more lots.
- Establish new Town roads with lots.

The County is the approval authority for Draft Plans of Subdivision. The Town provides input on Town matters such as servicing, infrastructure and parkland dedication.

Throughout the process, the Hanover Development Department generally serves as the primary point of contact for developers.

1.30.5 Application Fees

Fees for planning applications are established in the Town's Fees and Charges By-law. Staff will calculate the required fees and communicate the amount to the applicant. All fees must be paid before the application review process begins.

For a detailed fee schedule and payment instructions, visit the link:

https://www.hanover.ca/building-planning/planning-development

1.4 ENGINEERING PROCESS

Following acceptance and approval of the draft plan, the developer shall proceed to the engineering phase of the development process which will include a number of submissions including preliminary and follow-up submissions as required. Prior to the commencement of the Engineering Design, the Developer's Engineer shall obtain copies of the Town's Development and Servicing Guidelines to familiarize themselves with the requirements of the development design in the Town.

The initial submission of engineering drawings shall be delivered to the Town and should include copies of the preliminary drawings and servicing (functional design) report(s).

The initial submission of engineering drawings shall also contain a declaration from the Developer's Engineer showing that they have been retained to design and supervise the construction of the development according to the terms of the Development Agreement. The purpose of the initial submission is to review the general design concept prior to the Developer proceeding to detailed engineering.

In some cases, this information may have been provided in conjunction with the Draft Plan process. The preliminary drawing and report should consider items such as existing conditions, road alignments, cross section details, parkland dedication, watermains, trunk storm and sanitary sewers, storm water management and drainage, lot grading, etc. This document becomes particularly important when servicing is to be phased in conjunction with the development plan.

When a development is being phased the servicing report is to include details of how the phasing will occur and how infrastructure may be impacted by such phasing.

A Functional Servicing Report (FSR) must be submitted to the Town for review and acceptance. This report must be presented in a clear, comprehensive, and professional manner. The Developer shall retain a qualified professional engineer to prepare the FSR, which shall, at a minimum, address the proposed and current servicing of the development, with regard to water supply and distribution, sanitary sewage collection, storm drainage and stormwater management (SWM), and roads, including a review of the existing infrastructure to confirm whether they are sufficiently sized to accommodate the proposed development. Reference to the Ministry of the Environment, Conservation and Parks' (MECP) Design guidelines

and the Ontario Building Code (OBC).

It shall include the provision of utilities such as telecommunications, natural gas, and hydro distribution, etc. This report shall identify any improvements to existing infrastructure which may be required to service the proposed development.

The report shall include calculations for water demand, fire flow (per Fire Underwriters Survey (FUS) method) and sewage generation rates, along with the sizing of watermains, sewers, SWM facilities, pumping / booster stations, forcemains, etc., as applicable.

A calculation shall be provided that equates the water demand in the distribution system will be designed in accordance with MOECP guidelines which state the system should be designed to satisfy the greater of the following demands:

- Maximum day demand plus fire flow; or,
- Peak hour demand

In addition, to the above noted report, the Developer may be required to submit:

- Hydrogeological, hydrology;
- Traffic;
- Acoustical;
- Geotechnical;
- Archaeological;
- Phase 1 – Environmental Site Assessment;
- Tree Inventory and Preservation Plan; and
- Environmental, biological or other studies.

Appropriate engineering or other consultants shall be retained to complete these reports as part of the applications and submissions required. The Developer's Planner and/or Engineer shall consider future adjacent land uses, and all design and layout of services shall incorporate considerations with respect to future servicing, grading and drainage issues on the adjacent lands. Upon completion of designs and submissions, sufficient copies of preliminary design briefs, agency approval submissions and all final drawings and reports shall be submitted for review by the Town and their Engineer.

In the event that the proposed development requires a new water treatment and/or wastewater treatment system(s) to proceed, the Developer and the Developer's Engineer shall start early discussions with the Town and the Town's Engineer, before the preliminary drawings and servicing (functional design) reports are submitted to determine design criteria and requirements.

Submissions are to be made until the Engineering Drawings, design and reports, are acceptable to the Town

Additional details related to drawing requirements and approvals are provided in later sections of this document.

1.5 DEVELOPMENT APPROVALS

Depending on the nature and location of the development proposal within the Town, the Developer may be required to obtain additional approvals from a number of agencies including, but not limited to the following:

- The Town of Hanover;
- The Ministry of the Environment, Conservation and Parks (MECP);
- The Ministry of Natural Resources and Forestry (MNRF);
- Fisheries and Oceans Canada (DFO);
- Grey County;
- Grey Bruce Public Health; and
- Saugeen Valley Conservation Authority (SVCA).

It is the responsibility of the Developer to provide the Town with written documentation detailing its application to the various authorities and copies of approval documents from these regulatory agencies.

1.6 AGREEMENTS

As noted above, the Developer shall be required to enter into a Subdivision or Development Agreement with the Town. A standard form of that agreement is available from the Town for a Developer's review. Certain fees, deposits, and charges will apply and are outlined within that document.

Example agreements can be found on Hanover's website - Planning and Development:

https://www.hanover.ca/building-planning/planning-development

Information regarding the preparation of the Development Agreement is provided in Section 2.10 of this document.

1.7 DEVELOPER'S ENGINEER

The Developer shall employ Engineers registered with Professional Engineers' Ontario (PEO) to design all of the services, prepare plans and specifications, and provide construction review and inspection of all works.

The services shall include the following:

- Preparation of functional reports as may be required through the draft plan approval process.
- Preparation of designs.
- Preparation of drawings for approval purposes and construction.
- Preparation of necessary contracts and specification documents.
- Preparation of necessary approval documents in conjunction with the regulatory agencies.
- Provision of contract administration, and full-time construction review of all Town facilities.
- Maintenance of records of construction and upon completion, the provision of As-Recorded/As-built drawings in suitable digital format to the Town.
- Provision of certification to the Town the works have been constructed in general conformance with the approved plans and specifications.
- To act as a representative of the Developer in all matters pertaining to the construction.
- To provide coordination of the scheduling to comply with timing provisions for inspections and testing of the works.
- To provide certification of the installation of services was in conformance to said plans and specifications, such certification should be in a form acceptable to the Town's solicitor and the Town's Engineer.

The Developer's Engineer shall provide evidence of professional liability insurance from their insurer in the amount of not less than five million dollars per occurrence prior to the review of any reports or briefs by the Town. Insurance requirements shall be as detailed in the Town's Standard Development Agreement.

1.8 UTILITIES

The Developer shall coordinate the design and installation of all utilities including electrical, telecommunications (telephone, internet, TV) and gas. These utilities shall be installed within the road allowance in accordance with the typical cross section attached as Appendix "A" and "B" to this document.

The Developer shall provide documentation to the Town that they have contacted all telecommunications providers and advised them they will have access to servicing in the Development.

The Developer will be asked at times in the development process to provide

confirmation from the utility companies that the appropriate arrangements have been made for installation and upon completion of said installation of the utilities, provide to the Town a notice of completion by said companies.

1.9 DESIGN STANDARDS

The standards that follow should be adhered to wherever possible. It is acknowledged that on occasion unique and special circumstances occur and minor deviations may be required from the standard. These deviations shall only be made through consultation with Development and Public Works.

Further, the Town reserves the right to require compliance to a higher standard on occasions where warranted (dependent upon the specific details of any development). Further, the Town may require higher standards in areas of higher density developments, arterial or collector roads, or heavy industrial traffic.

These guidelines should be read in conjunction with the standard engineering practice as established by the MECP and Ministry of Transportation (MTO)together with regulations, the current drinking water license, current municipal sewage collection Environmental Compliance Approvals (ECA) current municipal stormwater management system ECA, design manuals and guidelines of the Municipal Engineers' Association.

Unless superseded by the Town's Development and Servicing Guidelines specific standard drawings and specifications from the Ontario Provincial Standards Specifications and Ontario Provincial Standard Drawings shall be used as reference for individual details (OPSS, OPSD).

1.10 BARRIER FREE REQUIREMENTS

All design projects throughout the Town must adhere to the requirements of the Accessibility for Ontarians with Disabilities Act (AODA) and shall incorporate ways to remove barriers for the public.

On Town reconstruction projects where the requirements of AODA are not practical or financially feasible, exceptions may be accepted, upon review by the Town, providing there is sufficient justification that the existing conditions prohibit proper application of AODA standards.

1.11 CAPITAL PROJECTS

The Town may appoint a qualified consulting engineer registered with the PEO, to design, supervise, and certify the construction and installation of the Capital Works, including but not limited to external works to subdivisions, road construction, intersection improvements, and Town underground infrastructure.

Where external works are required related to a Development, depending on the

scope and magnitude of the works, the Town may choose to manage the design, tendering, and inspection of works on the public right-of-way (ROW), at the Developer's cost. If the Town chooses not to manage the works themselves, the Developer shall appoint a competent, qualified, professional engineer, acceptable to the Town, to design, administer, and provide full-time inspection for the external works

SECTION 2 | SUBMISSION OF PLANS, REPORTS, AND STUDIES

2.1 SUBMISSION PROCEDURE

All submissions for approval shall be forwarded to the attention of the Development and Infrastructure Department for the Town in sufficient quantities as may be required for distribution. Town staff will distribute said plans to public works, building, Town's Engineer, fire department, etc.

Drawing submissions shall include but not be limited to:

- Plan and profile.
- General Servicing Plan.
- Typical cross section(s).
- Typical lot grading sections.
- Lot grading drawings.
- Typical swale details.
- Geotechnical report information.
- Specific structure and erosion protection and control details.
- Details with respect to stormwater management and associated facilities.
- Any other special facility required for the type of development proposed.
- Details of all installations not covered and noted by standard OPSD drawings.
- Such other environmental reports as may have been prepared as part of the application process.

2.2 PLANS AND DRAWING REQUIREMENTS

Drawings must be prepared in digital format, which is compatible with the current version of AutoCAD, for all new development within the Town. The digital files and drawings, including those digital plans showing details of special structures, details, etc., shall be prepared by the Developer's Engineer and provided to the Town as a permanent record prior to the Final Acceptance of services required to be provided by the Developer.

All digital files are to be geographically referenced in a format suitable for insertion into a geographic information system.

The following standards shall be adhered to in preparation of these drawings:

- Existing services shall be shown as dotted or dashed lines while proposed services shall be shown as solid lines.
- All elevations shown on the drawings are to be of geodetic origin.
- Drawings shall be of a consistent size – A2 (594 mm x 841 mm).
- Scales shall be as follows for drawings:
    - General Servicing Plan, Scale Ratio – 1:500
    - Plan-Profile Drawings, Horizontal – 1:250
    - Plan-Profile Drawings, Vertical – 1:50

Ratios shall be shown on all drawings.

- A standard title block placed in the lower right corner of all drawings shall be used in which revisions are clearly dated and displayed, and in which the Town is named. A title sheet containing a drawing index shall be provided for each drawing set. A key plan at a suitable scale shall be displayed on all plan and profile drawings as well as the General Servicing Plan. The area covered by each specific drawing shall be identified in the key plan.
- All engineering drawings shall be stamped and dated by the Developer's Engineer prior to issuance for tender.
- Upon completion of the works, As-Recorded drawings, as outlined elsewhere in these specifications, shall be submitted prior to acceptance of the services. These drawings shall be comprised of the original drawings that were issued for construction, amended to incorporate any changes implemented during construction.

2.3 PLANS-PROFILE DRAWINGS

Plan-Profile drawings are required for all roads, blocks and easements where services are proposed, for all outfalls, and for all boundary roadways abutting the development. The following standards shall be adhered to in the preparation of Plan-Profile drawings:

- All profiles must be drawn with reference to the geodetic datum (NAD83) noted on each drawing. All drawings must contain a complete legend.

-
- Drawings are to be prepared so that each street can be filed separately. The street numbers/names must be identified on the plan portion of the drawings.
- In general, east-west streets shall have zero chainage at their westerly limits and north- south streets shall have zero chainage at their southerly limits. Chainages shall increase from left to right. On the plan portion of each drawing the centerline of construction shall be noted with chainage in 20 metre increments. Chainage for the centerline of construction as well as the chainages for vertical curves (i.e. beginning, end, and apex points) shall be noted on the profile portion of each drawing.
- When the plan must be broken because of curvature, etc., the profile shall be broken as well, so that, insofar as possible, chainage points in plan and profile will coincide vertically. When a street must be displayed on more than one drawing due to its length, match lines shall be used with no overlapping of information.
- The beginnings and ends of curves must be shown on the plan and profile with the radius of curvature shown on the plan. Chainages of points of curvature shall be calculated.
- The chainage and names of intersecting streets shall be shown in plan and profile, and the reference drawing numbers for these streets and for any match lines shall be shown on all applicable drawings.
- The drawings shall show clearly the proposed profiles, road widths and cross-sections, ditches, ditch gradients, curb gradients if different from the proposed services, north arrow and limits of the proposed work. The plan shall show any required off-street drainage, and separate profiles shall be prepared for drainage easements. All details for intersecting streets including grades must be shown for a distance of 50 metres from the intersection of the intersecting street. All street lines, for drainage or services, shall be shown and all easements.
- Plan-Profile drawings shall identify road allowances, lot and block frontages, easements, and reserves. The curb, gutter, and sidewalk are to be shown and dimensioned on the plan portion of the drawings.
- Storm and sanitary sewer shall be drawn in both plan and profile. In profile, the diameter of the sewer shall be drawn to scale. On the plan portion, sewers shall be described by size, type, and direction of flow. On the profile portion, the length, grade, pipe material and class, usage (storm or sanitary) and bedding type shall be identified.

- Structures associated with sewers (i.e. maintenance holes, catch basins) shall be numbered and drawn on both the plan and profile portions. On the profile portion, the number, offset, size, invert elevations, and applicable OPSD shall be identified for each structure. Safety platforms or drop connections shall be noted on the profile portion where applicable. Top of grate elevations shall be specified for rear lot catch basins.
- Ditch profiles and grades shall be shown.
- Watermains, hydrants, and valves shall be drawn on the plan portion of the drawing. On the profile portion, the diameter of the watermain shall be drawn to scale.
- Water and sanitary service connections shall be shown in the plan portion of each drawing.
- The original and proposed ground profiles shall be plotted. Proposed vertical curves shall be defined by all relevant data (K value, grade, etc.). Proposed roadway profiles shall be displayed sufficiently beyond the limits of construction to confirm the feasibility of future extensions.
- Details of gutter grades for cul-de-sacs and crescents shall be provided on the plan portion as a separate detail at a scale of 1:100.
- Existing utilities and services shall be shown in plan.
- The following additional information shall be shown in plan:
    - Curb radii at all intersections;
    - Location of luminaire poles and transformers;
    - Location and type for all street name and traffic control signs
    - Any special notes related to construction procedures or requirements.

2.4 GENERAL SERVICING PLAN

A copy of the General Servicing Plan shall be submitted to the Town identifying the proposed locations of telecommunications, electrical servicing, and gas mains, as well as watermains, storm sewers and sanitary sewers. All locations must be established and resolved by the Developer's Engineer in conjunction with the utility companies and following the locations shown on the Town's Typical Cross Section. The drawing should also display lot and street boundaries and dimensions in accordance with the Registered Plan for the area. Geodetic (with reference to the NAD83 vertical datum) and site benchmarks should also be identified. If applicable, flood lines specified by Saugeen Valley Conservation Authority (or SVCA) should be displayed.

2.5 APPROVALS

Ministry of Environment, Conservation and Parks (MECP) and Conservation Authority Approvals

The Consulting Engineer shall obtain a Certificate of Approval from the Ministry of the Environment (MOEP) and if applicable, approval from the Saugeen Valley Conservation Authority prior to commencing construction.

Other Acceptances

The Developer's Engineer is required to make all submissions and representations necessary to obtain acceptances from all other authorities affected (Ministry of Natural Resources and Forestry, Ministry of Transportation, Conservation Authorities, Source Water Protection Authority, Canada Post Corporation, Fire Marshall, Medical Officer of Health, etc.).

The Town shall be kept informed of the progress of these submissions by way of copies of all correspondence.

Final Approval of Submission

After the Town is satisfied that they have completed their review of the submission drawings and have documentation from the Developer or their Engineer that all other regulatory agencies have been satisfied with their approval submissions, the Developer shall submit to the Town final copies of drawings and specifications in quantities the Town may determine sufficient, which shall include all details required by the Town and the approval agencies.

Any changes after this submission which may be proposed by the Developer or their engineer must be resubmitted to the Town for review and for their approval prior to such changes being made in the installation of services. If one year has passed since the date of the acceptance of the drawings by the Town and the Developer has not yet entered into Development Agreement with the Town, the Town reserves the right to revoke any or all acceptances related to the engineering drawings.

2.6 SERVICES FOR INDIVIDUAL RESIDENTIAL LOTS

Services for individual residential lots or units shall generally be as follows:

- Telecommunications (Telephone, cable TV and internet) and electrical services shall be installed in a common trench.
- Driveways shall be located on the opposite side of the lot from pad mount transformers, streetlights, or perpendicular intersecting roads.
- Enbridge/Union Gas.

2.7 EASEMENTS

Where buried services, utilities, channels, overland flow routes, etc., are placed outside the road allowance, permanent easements will be required.

The widths of the easements shall be determined through consultation with the Town. In general, the buried infrastructure shall be placed in the centre of the easement.

2.8 DEVELOPMENT AGREEMENT

The draft of the Development Agreement will be prepared by the Town. The Developer's Engineer shall prepare a servicing cost estimate for review and inclusion in the agreement related to securities. The Town must be in a position to clear all conditions of the Draft Plan Acceptance prior to the preparation of the draft Development Agreement Schedules. The following information must be provided by the Developer's Engineer to the Town prior to the preparation of the draft Development Agreement Schedules:

- MECP certificates of acceptance for all the services to be constructed if available.
- The name of the person and/or company with whom the Development Agreement will be executed.
- The name, address and telephone number of the developer's lawyer.
- **One hard copy** and an electronic copy of the Reference Plan
- **One hard copy** of any easements, road widening plan(s)
- **One hard copy** and an electronic copy of the Legal Description based on the Reference Plan, including but not limited to, easements, reserves and daylighting.
- **One hard copy** and an electronic copy of the proposed final plan for future registration complete with all the pertinent information as required by the registry office. The plan shall show all required lots, blocks, and easements.
- **One hard copy** and an electronic copy of the accepted engineering drawings.
- A detailed cost estimate of all services to be constructed. This estimate will form the basis for calculation of security to be posted for this development. It shall include:
    - Detailed cost of services;
    - Cost of underground electrical distribution and street lighting (where not part of a separate agreement with the utility);

    - All miscellaneous expenditures;
    - Allowances for contingencies, engineering, and HST.
- Proposed timetable for construction of services reflecting phasing.
- Proposed landscaping plans where necessary or required.

2.9 REQUIREMENTS PRIOR TO COMMENCEMENT OF CONSTRUCTION

Following signing of the agreement, receipt of the insurance certificate, receipt of security deposit (i.e., Letter of Credit), and at least two weeks prior to the commencement of construction, the Developer's Engineer shall submit the following information to the Town for acceptance:

- One set of construction specifications;
- A list containing the Contractor, subcontractors and the Contractor's material suppliers;
- A copy of the signed contract tender complete with prices;
- Proposed disposal sites;
- Insurance documents;
- Project schedules;
- Spills Action plan;
- Any other information as required by the Town staff or as specified in the Development Agreement.

In addition to the above items, the Developer's Engineer must provide confirmation that all recommendations of the Erosion Control plan are implemented. The Developer's Engineer must schedule a pre-construction meeting and provide sufficient notice of this meeting to the Town.

2.10 AS-RECORDED (AS-BUILT) DRAWINGS AND RECORD FIELD SURVEY

The Developer's Engineer shall retain a record of all revisions to the design that were implemented during construction. These "record revisions" shall be based on a final survey of the development. The final survey shall include a check of the following items:

- Location and invert elevations of all sewer maintenance holes.
- Distances between all sewer maintenance holes.
- Location of all roadway catch basins.
- Location, rim and invert elevations for all year yard and lot catch basins.

- Road centreline elevations.
- Site benchmarks.

The original drawings shall be revised to incorporate all changes and variances found during the final survey and to provide ties and additional information to readily locate all underground services.

These new amended drawings shall constitute the As-Recorded drawing set.

The As-Recorded drawings shall display all sewer and road grades recalculated to two decimal places. All street names, lot numbering and block identification shall be checked against the Registered Plan and corrected if necessary. An As-Recorded revision note shall be placed on all drawings in the revision block.

At any time up to two years after Final Acceptance of the development, the Town may return the As-Recorded drawings to the Developer's Engineer for rechecking and further revision if discrepancies are found. The Developer's Engineer shall be required to explain in writing any major difference between the design and the As-Recorded data to provide verification that the alteration does not adversely affect the function of the development services.

A paper and electronic copy of the As-Recorded drawings must be submitted to the Town for review before "Final Acceptance" of the development will be given.

The Development Agreement shall be referred to for the definition of "Final Acceptance".

SECTION 3 | ROADS

3.1 ROADS GENERAL

All local roadways for residential development shall be designed and constructed to the urban standard and the typical cross section shown in Appendix “A” to this document.

All roadway design shall meet the minimum requirements of all applicable current industry standards and specifications set out by the Transportation Association of Canada (TAC), OPS, Ontario Traffic Manual (OTM), CSA, and the ESA regulations and shall apply together with the following Town Standards.

Road allowances shall be a minimum of 20 metres wide. The edge of the roadway paved surface shall have a minimum radius of 9 metres at intersections. Access roads not owned by the Town, leading to the area of the development, shall be constructed and maintained to a standard equal to the standards for roadways within the development. On all streets, horizontal and vertical sight distances and vertical curves shall meet MTO Geometric Design Standard and engineering shall conform to 50km/hour allowed speed limits within the settlement area. Any deviation from this speed will be requested from the Town.

Road allowances on cul-de-sacs are to have a minimum radius of 20 metres. Edge of pavement radius on cul-de-sacs are to be a minimum of 15 metres.

For urban cross sections, the minimum road asphalt width shall be 8.5 metres. The finished roadways shall have a crossfall of 2% from the centerline to each curb line.

Should the development require the construction of arterial or collector roads, the Town will establish design widths for that section of road if required.

All roadways for new industrial development shall be designed and constructed to the urban standard as shown in Appendix “A” to this document. Road allowances for industrial development shall be a minimum of 26 metres wide.

A qualified geotechnical firm shall be engaged by the Developer’s Engineer to confirm the suitability of the minimum pavement designs contained in these standard for use in the Development, or to recommend a higher standard if required. The same geotechnical firm shall be retained by the Developer’s Engineer to carry out field testing during construction to verify the design.

Copies of all test results and proposed road designs shall be submitted with the engineering drawings. Testing and acceptance of all granular materials at the designated pits prior to placement and subsequent in-situ verification tests shall also be performed by the Developer’s geotechnical firm.

Prior to the placement of asphalt pavement, the Developer’s Engineer must submit to the Town for acceptance, the asphalt pavement mix designs.

3.2 CLEARING AND GRUBBING

Trees shall be removed so that the specifications for sight distances, grading, ditching, etc., may be met. All stumps, logs, brush, boulders, debris, etc. shall be removed from the street allowance. Unless noted otherwise, all healthy trees not obstructing visibility or installation of services shall be preserved. The Town may give permission to leave trees on the street allowance (boulevard).

3.3 GRADING

A 1.5-metre boulevard area behind the curbs and/or sidewalk (as applicable) shall be graded at a minimum of 2% and maximum of 5% towards the curbs. Where the proposed road extends through areas of cut and fill, the area from the edge of the road boulevard to the street line shall be graded with a side slope not exceeding a slope of 3 metres horizontal to 1 metre vertical to meet the original ground. All side sloped ditches and boulevards to the street line shall be protected with nursery sod over a minimum depth of 150 mm of topsoil.

In all cases, topsoil shall be stripped for the complete width of the road allowance and stockpiled at locations accepted by the Town. Rough grading shall be done to bring the travelled portion of the road to the necessary grade and in conformity with the cross-section shown on the drawings. All subgrade material shall be compacted to 95 percent Standard Proctor Density prior to any application of granular base course materials.

Rough grading of all lots and easements must be properly shaped to ensure suitable drainage.

3.4 ROAD CONSTRUCTION

All road construction shall conform to applicable standards of the Ontario Provincial Standard Specifications (OPSS) and the Ontario Provincial Standard Drawings (OPSD). The granular road base shall consist of a bottom course of 450 mm minimum depth consolidated Granular “B” full width across the roadway and a top course of 150 mm of Granular “A” full width between concrete curbs. The granular materials shall be spread in layers of 150 mm maximum compacted depths, and each layer shall be thoroughly compacted. During and between construction seasons, the granular base shall be maintained suitable for vehicle and pedestrian traffic, including dust control by calcium chloride and renewed if required to the satisfaction of the Town.

Road subdrains shall be provided as required in accordance with OPSS 405.05 and amended to accept only polyethylene Big “O” Boss 2000 or equivalent. The subdrain shall include filter wrap (non-woven type) in accordance with OPSS 1860. The Town reserves the right to require video inspection of subdrains prior to acceptance.

3.5 ROADWAY SURFACE ASPHALT

As soon as the granular base has been completed, it shall be thoroughly compacted and shaped, and the base course of asphalt. The base course shall consist of 50 mm minimum thickness of HL-4 Base Course Asphalt.

Following at least one year from the date of placement of the base asphalt, the Developer shall arrange an inspection with the Town to discuss any remedial work that may be required prior to placing the surface coat of asphalt. Not sooner than one year following the completion of any remedial works and as dictated by the Development Agreement shall the surface coat of asphalt be placed consisting of 40 mm minimum thickness of HL-3 Surface Course Asphalt.

Asphalt work shall conform in all respects to OPSS 310.

3.6 CURBS

Concrete curb and gutter, of cross-section approved by the Town, shall be provided along all edges of paved roadway surface. Terminations at the limits of the subdivision shall be either joined to existing concrete curbs or rounded to reduce hazard to traffic.

Construction shall conform to OPSS 353.

If a driveway location cannot be determined at the time of pouring, a full section of curb and gutter shall be poured continuously. When the driveway location is determined, a driveway depression can be cut with a curb cutting machine providing the section to be cut, is free from cracks and other defects. The Town reserves the right to request semi-mountable curb and gutter where they deem appropriate. All curbs and gutter are to be protected from damage by heavy equipment and vehicles.

Two stage curb is not permitted.

3.7 SIDEWALKS

A 1.5 metre sidewalk shall be constructed on one side (minimum) of each street within the development. Links where possible shall be provided to access neighbourhood parks or schools via walkways. Sidewalks shall have a minimum depth of 125 mm and shall be bedded in granular material in accordance with the current OPS standard details.

Sidewalks shall be increased in thickness from 125mm to 150mm at all driveway locations, and 200mm for commercial or industrial driveways. Granular depth shall be 150mm minimum or increased to the same depth as the sidewalk or driveway installed thicker.

Sidewalks shall be placed prior to construction of asphalt, concrete or brick driveways.

Sidewalk locations and installation will depend on the type of roadway and allowable infrastructure within the right-of-way. Refer to typical cross-sections in the appendix and below are the types of roads that are within municipal boundaries:

1.0 Arterial Roads

Arterial roads shall be provided with sidewalks adjacent to residential areas with direct access to schools, hospitals and retail outlets. Main through fares to be provided with sidewalks on both sides of the roadway if possible.

2.0 Collector Roads

Collector roads shall be provided with sidewalks on both sides if room is available where only one side gets the sidewalk it will be on the side of the adjacent side to residential areas with direct access to schools, hospitals, and retail outlets

3.0 Local Roads

Local roads that provide connectivity and access to schools, hospitals and retail outlets or access between neighbourhood communities shall be provided with sidewalks on one side of the roadway.

Cul-de-Sacs and Crescents

Cul-de-Sacs and Crescents within a neighbourhood community will receive a sidewalk depending on compatibility and infrastructure required.

3.8 ACCESSIBILITY

As part of construction of any concrete curb and gutter, sidewalks or other surface structures, the Developer will be responsible for construction of all Works in accordance with the Town's and the Province of Ontario's current accessibility standards and regulations to provide full access where possible, to all individuals in the community.

3.9 TURNING CIRCLES OR HAMMERHEADS

Where construction is phased, the Town may require the installation of temporary turning circles. These turning circles will be constructed in accordance with the requirements for cul-de- sacs in Section 3.1 of this Schedule. Temporary cul-de-sacs shall be paved, and curb and gutter shall be provided when needed to contain surface water and direct it to the storm sewers.

3.10 ADJACENT ROADS

Whenever a development abuts adjacent roads, improvements to those roads and the installation of all municipal services shall extend to the limit of the property owned by the Developer.

3.11 DAYLIGHTING REQUIREMENTS AT INTERSECTIONS

Where deemed necessary by the Town, daylighting at intersection quadrants shall be included in the road allowances to provide for uniform boulevard widths. When required, daylighting details (location, and size) shall be included on the proposed plan for Registration and on all engineering drawings.

3.12 LOCATION OF UTILITIES

The location of utilities within the road allowance shall be as detailed in the Town's standard drawings. Utility drawings shall be submitted to the Town for acceptance of the proposed utility locations. All utility wiring is to be housed underground or directly buried.

Hydro transformers are to be housed in suitable enclosures and mounted on transformer pads installed at the final elevation of the adjacent ground. The location of transformer pads shall be as detailed on the Town's standard drawing and are typically to be in the opposite boulevard of the sidewalk. Telecommunications and cable T.V. junction boxes may be mounted at the surface in accepted standard enclosures.

3.13 COMMUNITY MAILBOX REQUIREMENTS

Community mail centres and/or site individual super mailboxes shall be placed in locations accepted by the Town. Community mail centres shall be constructed centrally and suitably located in consultation with the Canada Post Corporation. The design of the community mail centre must incorporate such criteria as pedestrian safety, traffic flow and aesthetics.

The Town may require the developer to furnish the following amenities within the community mail centre:

- Park benches
- Fencing
- Litter containers
- Landscaping
- Pedestrian lighting
- Concrete pad or interlocking stone surface
- Architectural controlled kiosks
- Adjacent car bays parallel to the travelled portion of the roadway.

All details associated with the community mail centres or super mailboxes shall be identified in the Engineering Drawings and will be subject to review by the Town. The Developer shall be responsible for constructing community mailboxes within residential developments, prior to the issuance of the first building permit.

The acceptance of Canada Post Corporation with respect to location of community mail centres and/or site individual super mailboxes will be required prior to the acceptance of the Engineering Drawings by the Town.

3.14 SNOW CLEARING

Snow clearing operations prior to “Final Acceptance” may be carried out by the Town if so, requested in writing by the Developer; the associated costs will be charged back to the Developer.

3.15 DRIVEWAY ENTRANCES

The standards for driveways and entrances shall be reviewed in conjunction with the Town’s Zoning By-law. Driveway entrances shall be constructed to the property or to the edge of sidewalk. Entrances shall have a consolidated base constructed of 300 mm minimum depth of Granular “B” and 150 mm minimum depth of Granular “A”.

All entrances shall be hard surface (asphalt, concrete, or similar material). Exception for hard surface will only be given in a rural residential setting.

All entrances shall be completed in accordance with the current OPS standard details.

Allowable Town Entrance widths and curb depressions shall be formed in the curb according to OPSD 351.010.

The maximum width for driveway depressions shall be:

Table 1: Permitted Drive Width

Type of Driveway	Total Width (m)
Urban Residential	6.0 meters
Rural Residential	8.0 meters with 9.0 meter Culvert
Commercial / Industrial	9.0 meters

Additional driveway width may be permitted with permission from CBO.

Any entrances required off a County of Grey highway will be applied for and approved by the Grey County Transportation Department.

3.16 OTHER REQUIREMENTS

Whenever it is necessary to cut through an existing municipal road, the Contractor will be responsible for obtaining a Road Occupancy permit from the Town. The placement and compaction of the backfill material and the restoration of the surface pavement shall be done in accordance with the standard and specifications in effect at that time.

Before making detours, permission is required from the Towns public works department. Where the road is not part of the municipal road system, acceptance

from the appropriate road authority will also be necessary.

In all cases, the fire, police departments, school bus companies and ambulance service must be notified by the Developer or their Contractor.

All work will be done in accordance with the ordinances and by-laws.

Road Occupancy Permit

A Road Occupancy Permit is required from the Town whenever it is necessary to perform excavations or any construction works on an existing Town ROW, unless the work is covered under a Subdivision or Site Plan Agreement. All Work shall be done in accordance with the instruction and direction provided in the Road Occupancy Approval from the Town.

Inspection and Testing

Full-time inspection is required while the construction of roads is occurring. Materials testing reports and other reports as applicable shall be provided to the Town to ensure compliance with the recommendations of the geotechnical report. The following minimum testing shall be completed for new roads:

- Air test.
- Slump test.
- Concrete Cylinders.
- Compaction test.
- Material samples.
- Proof roll of subgrade (under supervision of the geotechnical engineer, with Town staff in attendance, if requested).
- Geotechnical engineer is to submit a final report including all test results and sign off that the subgrade meets requirements.

SECTION 4 | SANITARY SEWERS

4.1 APPROVAL OF PLANS

The Town is now a municipal partner in the MECP CLI-ECA Program. Projects falling within the scope of the CLI shall be submitted to the Town for approval. Projects that do not fall under the scope of the CLI shall be submitted to the MECP for approval. Projects submitted under the CLI program must be designed, constructed, and tested per the most current version of the Town Engineering Standards.

The CLI-ECA covers several works that are of a non-complex or less environmentally sensitive in nature. These projects must also fulfill the requirements of the Ministry's Design Criteria Manual. In general, the CLI-ECA includes the following types of Works:

- Sanitary sewers.
- Sewage pumping stations.
- Forcemains.

Or the most up-to-date version of the above, or any new documents issued by these agencies.

A CLI-ECA does not apply to the following types of works:

Town Sewage Treatment Plants.

Privately Owned Industrial and Commercial Sewage Collection Systems.

Approval for the above will require direct submission to the Ministry. As part of the second engineering submission, the Developer is to submit a digital copy of the completed Application for ECA and all required documents to the Town for review.

If the Town has comments related to the approval process, they will be sent to the Developer's engineer, as the Town will not recommend approval until all comments are addressed.

4.2 CONFIRMATION OF CAPACITY

Prior to commencement of any design for sanitary sewage works within the Town, the Developer shall contact the Town to ensure that adequate external trunk sewer and treatment plant capacity is available for the proposed development. If the Town does not have a confirmed capacity within the downstream system, the Developer's engineer shall undertake an assessment of the nearest downstream trunk sewer, or a different location at the discretion of the Town.

In the event that the Town does not have sufficient system records or an understanding of the available reserve capacity, then the Town and the Developer will agree to a scope of work for determining available capacity.

The costs associated with undertaking a comprehensive reserve study will be determined through the pre-consultation process, prior to commencing any design work.

The system shall be designed to service all areas within the subdivision to their maximum future development potential and must take into consideration external flows within the drainage area, in accordance with the Town's Official Plan. Allowance shall be made for inflows from the appropriate adjacent subdivisions or areas and shall meet with the approval of the Town's Public Works department. Discharges of the system are to be connected into appropriate sewers and are to be approved by the Town's Public Works Department. The exact location for connecting sewers in adjacent subdivisions or areas shall be approved by the Town's Public Works Department.

In accordance with MECP guidelines and Town policy, all urban developments are to be serviced by municipal wastewater systems. Individual septic systems are NOT permitted in new developments.

4.3 DESIGN STANDARDS

Sanitary service shall be designed in accordance with current MECP design guidelines. The minimum size for main sewers shall be 200 mm diameter. House connections shall be a minimum of 100 mm in diameter. For multiple dwelling, industrial or commercial buildings, the service connections shall be sized to accommodate the flow. Unless otherwise specified, the average daily per capita flow for sanitary sewer design shall be 450 L/cap/day.

4.4 LOCATION

The main sewers shall be located along the centre of the street allowance. House connections shall terminate at the property line for each lot.

4.5 MATERIAL

Main sewers shall be P.V.C. (SDR35) or approved alternate. House connections shall be P.V.C. (SDR28) or approved alternate. All joints shall be of the rubber gasket type as approved by the Town. Approved caps shall be provided for service lateral terminations.

4.6 SANITARY SEWER CONSTRUCTION

Sewer construction and pipe bedding shall conform to the requirements of OPSS 410 for sewer construction. A minimum 2.5-metre depth of cover shall be provided over all sanitary sewers and service laterals.

4.7 HOUSE CONNECTIONS

Plan locations and invert elevations, for all house connections at the street line, shall be shown on the drawings. Minimum fall on house connections shall be 2% and maximum 8%. Where the depth of sewer is excessive, a riser may be used over the main sewers.

Shop manufactured “Tee” connections shall be used for house connections to the main sewer. Each service lateral shall be complete with a manufactured “Wye” connection and 100 mm diameter cleanout that shall extend to the ground surface level.

The top of the cleanout shall be installed flush with the ground surface 100mm PVC SDR28 with cleanouts at property line to include a sanitary tee-wye to inspect service from cleanout Cleanouts to include cast iron cover DF44 cast iron cleanout cover clearly marked “Sewer”. Flexible couplings should not be used to connect the bolted cap to the cleanout. A cast iron cap shall be installed on each service lateral termination at the street line and made watertight.

During the development stage, the ends of all services shall be marked by a 50 mm x 100 mm wood post extending from the service to 300 mm above the surface of the ground and the top section painted fluorescent green. Connections to maintenance holes shall enter the structure no higher than 0.5 m above the lowest invert, except as otherwise approved by the Town.

All sanitary service pipe material shall be coloured green to avoid cross connection. This includes pipe colour, wrapping, demarcation tape or stenciling.

4.8 GRINDER PUMPS

Should the development require the use of Grinder Pumps, they shall be E-One sewer systems curb stop c/w integral stainless steel check valve equivalent. Service box to have stainless steel stem. Isolation valves to be located at the property line of each service. Valve box covers to be stamped “SEWER”.

Service pipe to be 32 mm (minimum), Polyethylene (PE) DR-11 tubing, compression joint connections for PE service pipe requires a stainless-steel tube liner with a fluted end as supplied by the corporation stop manufacturer. Should grinder pumps be required, more detailed design, material and installation specifications will be provided by the Town.

Grinder pumps shall remain in the ownership of the private property owner. The property owner shall be responsible for all operating, maintenance, repair and replacement costs.

4.9 MAINTENANCE HOLES

Concrete maintenance holes shall be provided at all changes in direction of the sewer and at all street intersections, but no further apart than note:

Table 2: Sanitary Sewer Spacing

Sewer Diameter (mm)	Maximum Spacing (m)
Up to 400	120
450 to 750	150

Maintenance holes shall be 1200 mm dia. conforming to OPSD 701.010 or as required for larger trunk sewer sizes. Benching shall be provided in all structures. Joints shall be watertight.

4.10 TESTING AND FLUSHING OF SEWERS

The complete sewer system, including house connections, shall be tested: infiltration, exfiltration, deflection and flushed in accordance with OPSS 410, including video inspection.

The Developer or consulting engineer shall arrange the tests for sections of sewer between maintenance holes and shall provide all information and video to the Town of Hanover. Sewers shall be video inspected at least twice by the developer, once immediately prior to base asphalt and once immediately prior to surface asphalt placement. Any sections of sewer which fail to meet the requirements of this section shall be repaired and retested until results are satisfactory to the Town. All repairs and retests will be at the Developer's expense.

Testing and flushing also applied to the storm sewer pipe installed as part of the development. A sanitary sewer, storm sewer and forcemain commissioning plan will be submitted to the Town for review and comment, at least 2 weeks in advance of the proposed start date of the flushing and testing. Notice of test start date shall be received at least 5 days prior to the start day. Upon completion of the sanitary and storm construction, a commissioning report from the Developer's Engineer will be submitted to the Town.

4.11 COMPLETION AND ACCEPTANCE

The complete sewage collection system installation must be approved by the Town prior to the issuance of building permits for the subdivision.

SECTION 5 | WATERMAINS

5.1 APPROVAL OF PLANS

Plans for the entire system shall be submitted to the Town for approval and prepared in accordance with the Ministry of Environment, Conservation and Parks (or MECP) Guidelines and the Municipal Drinking Water Licensing Program (as applicable). The developer shall provide a complete MECP Form 1 – Record of Watermains (and any supporting information) for any addition to, or alteration of Hanover owned water distribution systems.

The submission shall consist of an overall plan, a plan and profile of each watermain drawn to the same scale as the roads, together with typical details of house service connections, pipe bedding and other appurtenances. Approval for construction will not be given until all the requirements of the MECP and the Municipal Drinking Water Licensing Program are fulfilled and the necessary approvals received.

Or the most up-to-date version of the above, or any new documents issued by these agencies.

5.2 CONFIRMATION OF AVAILABLE CAPACITY

As part of the pre-consultation process and prior to the commencement of any design, the Developer and / or designer must contact the Town and confirm that there is adequate capacity in the system, as well as the water treatment facility, to accommodate the proposed project.

5.3 WATERMAIN DESIGN

5.3.1 Location in ROW

Watermains shall be located as shown on the Towns standard roadway cross-sections. This location shall normally be on the north and west sides of the street. The watermain shall not be located on the same side as the sidewalk, except where there are sidewalks on both sides of the street.

Placement of valves in the wheel track of a travel lane shall be avoided, whenever possible.

At intersections, the preference is to have valves located in the boulevards and out of the asphalt.

5.3.2 Location Outside the ROW

Any watermains which are situated outside of the ROW shall be contained within a

block. Where watermains are located in blocks, the block width shall be 3.0 m for watermain at a depth less than 2.0 m and 6.0 m for watermains greater than 2.0 m depth, unless depth or size of watermain dictates a larger width necessary for maintenance.

Watermain to be centered within block.

Additional depth of footings for houses adjacent to the watermain block shall be considered in the design.

5.3.3 Material Specifications

Watermain pipe shall be C900 Class 235 rated PVC pipe with rubber gasket joint fittings. Push-on PVC rubber gasket joint fittings are not to be used on any hydrant lead, elbow, or tee. All materials that come into contact with potable water shall conform to NSF 61 and the latest American Water Works Association (AWWA) Standards. All fittings are to be ductile iron AWWA C110. The type and material classification of all watermains and bedding types shall be clearly identified on all profile drawings. PVC is acceptable for use in all development projects (residential and IC&I).

5.3.4 Bedding

Watermain bedding shall be constructed with bedding as per OPSD 802.010 Granular “A” embedment material) or high-performance bedding for flexible pipes and OPSD 802.030 or 02.031 Class “B” (Granular “A” bedding material, Granular “A” or select native cover material) for rigid pipe unless otherwise approved by the Town.

Alternative embedment material shall be sand meeting gradation requirements of OPSS 004.05.05 compacted to 98% Standard Proctor Density. Geotechnical certification of alternative material must be provided every 150 m and approved by Town prior to installation. The compaction testing must include the entire envelope (haunches, bedding, and top of pipe).

5.3.5 Depth of Cover

- Curb and Gutter Roads – 1.80 m minimum cover.
- Open Ditch Roads – 2.2 m minimum cover.
- Unbuilt future Roads – 1.80 m minimum cover measured from ultimate design grade.
- Road crossings – 2.2 m minimum cover.
- Watercourse, Creeks – 2.0 m minimum cover.

In areas where the Town allows a watermain to be installed with less than a minimum cover, the contractor is to supply and install insulation as directed by the Town to protect watermains, hydrant leads, and appurtenances.

5.3.6 Material and Size

All materials for watermains, valves, valve boxes, etc. supplied for the development shall comply with the latest edition of the applicable AWWA standard. Oils and lubricants used in assembly shall be 'Food Grade' and shall comply with the latest edition of NSF/ANSI Standard 61.

No substitutions shall be considered without the Town's approval.

Watermain: Watermain material shall be Polyvinyl Chloride PVC DR18 – AWWA C900 Pipe joints shall be bell and spigot with rubber gaskets. Minimum watermain size shall be 150 mm. Minimum watermain depth of cover shall be 1.8 meters.

Fittings: All fittings shall be ductile iron cement mortar lined mechanical joint (MJ) type with adaptors to suit other materials, where necessary. All fittings shall be in accordance with AWWA C110 and the rubber-gasket joints for ductile iron fittings shall be in accordance with AWWA C111.

All fittings including hydrants must be suitably restrained with approved mechanical restraints and have a minimum pressure rating of 250 psi (1724 Kpa). Grip-ring joint restraint required on all mechanical joints. Pipe to pipe connections 6.0 meters or less from any valve, tee, elbow, cap, reducer or hydrant shall be restrained.

Gate Valves: Mueller mainline valves and in mechanical joint with standard operating nut, hydrant valves to MJ to MJ gate valves with standard operating nut.

All valves to be supplied with "O" ring packing for water use and open counterclockwise.

Tapping valves and sleeves must be approved by the Town.

Fire Hydrants – Installation: Hydrants shall be installed in accordance with OPSD 1105.010, as amended and shall generally be located as follows:

- Residential areas – Along the projection of lot lines.
- Industrial areas – Centrally along lot frontages.
- Maximum spacing for all areas is 150 m.
- Hydrants shall be mounted with break-away flange at a maximum height of 100 mm above finished grade.
- At the end of dead-end mains, either temporary or permanent.
- At high points along the watermain system, as an alternative to air release valves.
- All joints shall be mechanically restrained and braced with concrete thrust blocks.
- 100 mm Storz pumper port facing the street. Side ports to be 65 mm.
- Hydrant leads are to be 150 mm diameter and have shut-off valves placed 900 mm from the hydrant.

The spacing and location of hydrants on private property is governed by the OBC.

Markers: Hydrant markers shall be yellow, 1.2 m high, FH-800 Series Canadian, and connected to the side port(s).

Painting: Hydrants shall be painted with rust proof paint prior to final acceptance in accordance with National Fire Protection Association (NFPA) 291 as follows:

- All hydrant bodies or “barrels” are to be chrome **RED**.
- Side ports and top / bonnet to be painted to indicate capacity:
  - Light Blue for Class AA (= to or > than 5,680 L/min or 1,500 GPM). b) Green for Class A (3,785 to 5,675 L/min or 1,000 to 1,499 GPM).
  - Orange for Class B (1,900 to 3,789 L/min or 500 to 999 GPM).
  - Red for Class C (<1,900 L/min or 500 GPM)\
  - Private hydrant barrels to be painted **YELLOW**.

Dry barrel hydrants shall be in accordance with AWWA C502. All hydrant leads shall be 150mm diameter and shall be supplied from the watermain of not less than 150mm diameter.

Services: Residential services shall be 19mm, higher-density will be 50 mm Type “K” copper tubing (ASTM B88) or Municipex Cross-linked polyethylene (PEX) series 160 conforming to AWWA C904. If PEX tubing is used, installation of tracer wire as well stainless-steel inserts for all fittings.

Backflow Prevention:

Larger service diameters (50 mm or higher) shall install backflow preventers, these will be certified each year and submitted to the Development Department to show conformity. The Towns’ Chief Building Official will have the ability to request a backflow preventer of any size if there is risk to the water system.

Private connections to the water system including IC&I and agricultural properties, and condominium developments shall have a backflow device installed prior to any upstream connections, such as tees. Backflow preventer shall be selected, installed and tested in conformance with CSA B64.10 “Selection and installation of backflow prevention”. The type of backflow valve shall be determined based on the hazard level of the Site, as dictated by OBC and Town Staff.

The backflow device shall be in a heated mechanical room of a building. Backflow devices shall be as per CSA and OBC Standards. Backflow devices shall be installed downstream of the water meter. There shall be no connection to the watermain prior to the backflow valve. Reduced pressure backflow preventors must be certified annually by a qualified person, and a copy of the certification provided to the town.

Removal of backflow preventors without the Town’s written permission is prohibited.

Corporation stops: Ball style 19mm and 50mm Mueller B25008 or Cambridge Brass 301-A3H3

Curb stops shall be Ball style 19mm and 50mm Ball style Mueller B25209 or Cambridge Brass 202-H3H3. With 36” stainless steel rod Mueller 801 or Star D-1-8 50mm Mueller 802.

Service saddles: Model No. 2616 by Robar Industries Inc., stainless steel, double bolted, wide band. The service tubing shall be installed to a minimum depth of cover to the watermain. Underground service line valves shall be in accordance with AWWA C800.

Cathodic Protection: In accordance with OPSD 1109.011. For any installation of water pipe systems, an investigation of the soils conditions shall be undertaken to determine the corrodibility of the native soils and to provide recommendations with regard to corrosion protection. Sacrificial caps are to be provided on every bolt of all mechanical joints and restrainers. The bolt lengths shall be sufficient to accommodate the caps. Zinc anodes or other corrosion protection measures may also be required as directed by the Town. Cathodic protection shall be provided for all tracer wires on PVC watermains. As a minimum, 175 gram zinc caps or approved equivalent shall be installed on each bolt of any mechanical connection.

Additionally, a 5.4 kg (2 lb.) packaged zinc anode shall be installed on each hydrant and all valves.

Anode Installation: For all mechanical joint fittings and couplings used with either ductile iron or PVC pipe, a sacrificial zinc nut shall be installed on each bolt. For buried anodes, connect anode copper lead wire to pipe, valve, fitting, hydrant, etc., with “double nut” type connection. Connect to main stops or curb stops with the electrical ground connections supplied. Place anode in trench a minimum of 500 mm from pipe, valve, fitting, etc. Complete installation shall conform to anode manufacturer’s recommendations.

Tracer Wire: All PVC watermain to be provided with a No. 12/7 strand copper cable having TWH insulation rated for underground use and strapped to the top of the pipe every 5.0 metres with a brass or galvanized clamp.

Thrust Restraints: OPSS 441.07.23 is amended as follows: All thrust restraint shall be designed to adequately provide the minimum amount of pipe/joint restraint required by mechanical joint restraint device alone. Concrete thrust blocks are not an accepted method of thrust restraint in the Town of Hanover except for connections to an existing main as directed by the Town or their designate.

Design of the pipe joint restraining systems shall consider the pressures that the system will be subjected to as well as any expansion and contraction due to temperature changes during and following construction of the various pipe materials selected. Restrain lengths for watermain 100 mm to 300 mm shall be in accordance with the requirements outlined below. Restrained length calculations for watermains 400 mm and greater shall be supplied by the pipe manufacturer using the design criteria set out below.

Thrust restraint shall be provided at all fittings, bends, tees, valves, hydrants, crosses, reducers, and plugged or capped dead ends. For Ductile Iron pipe refer to AWWA C600 – Section 3.8. For PVC pipes refer to UNI-BELL and AWWA M-23.

Hydrants shall be restrained with mechanical thrust restraints.

5.4 Watermain Construction

All watermain and appurtenances are to be installed, bedded and backfilled in accordance with current Ontario Provincial Standard Specifications, Safe Drinking Water Act, Drinking Water Works Permit, The Municipal Drinking Water License, and the most current recent version of ANSI/AWWA C651, the MECP "Watermain Disinfection Procedure", and to the satisfaction of the Town.

Minimum 1.8 metre depth of cover over all mains and services. Main valves and hydrant sets shall, generally, be located at a maximum spacing of 200 metres and 120 metres, respectively. Hydrant spacing for commercial areas may require reduced spacing. At main intersections, a main valve shall be provided at each direction from the intersection.

5.5 Flushing, Testing and Disinfection

All watermain shall be tested, flushed, swabbed and disinfected. Such procedures shall be in accordance with OPSS 441 for pressure testing and the most recent version of AWWA C651 and the MECP "Watermain Disinfection Procedure" for disinfection and connection to the waterworks system. The Developer or their consulting engineer shall inform the Town when the watermain is to be tested and disinfected.

The pressure testing shall be in accordance with OPSS 441.07.24 Hydrostatic Testing and under the supervision of the municipal Town. All hydrant leads, services, stubs, blow-offs etc. shall be subject to the hydrostatic pressure testing. Hydrant valves shall be in the open position to subject the hydrant to the test as well.

Bacteriological testing will be completed by Town waterworks employees.

The Developer will be billed for any testing or retesting required. Any failure of the testing and disinfecting shall require the Developer to re-flush, retest and/or re-disinfect the watermain until the watermain has met the requirements of the Ontario Provincial Standard Specifications and the MECP, to the satisfaction of the Town. Minimum requirements for bacteriological testing are:

- Escherichia coli – not detectable
- Total coliforms – not detectable

All chemicals and materials used in the disinfection of the drinking water system shall conform to the following standards:

- AWWA B300 for Hypochlorites
- AWWA B301 for Liquid Chlorine
- NSF/ANSI 60, Drinking Water Treatment Chemicals – Health Effects
- NSF/ANSI 61, Drinking Water System Components – Health Effects.

A watermain commissioning plan(s) will be submitted to the Town for review and

comment, 2 weeks in advance of the proposed start date of the flushing, testing and disinfection. Upon completion of the watermain construction, a watermain commissioning report from the Developer's Engineer will be submitted to the Town.

5.6 Completion and Acceptance

The complete water distribution system will be installed and must be approved by the Town prior to the issuance of building permits for the subdivision.

SECTION 6 | STORM MAINS AND STORMWATER MANAGEMENT

6.1 APPROVAL OF DESIGN AND PLANS

The Town operates under a Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) for the approval of qualifying Storm Water Management (SWM) projects and is therefore the approval authority. For all projects that do not fall under the CLI-ECA, the Ministry of the Environment, Conservation and Parks (MECP) continues to be the approval authority. The Developer shall design stormwater infrastructure in accordance with the most current version of the Town's CLI-ECA and associated design requirements.

If the design does not fulfill these requirements, application to the MECP for a Schedule 'C' amendment to the CLI-ECA will be required. The Developer is responsible for obtaining and reviewing the CLI-ECA documents and design requirements from the Town to ensure adherence.

The most current version of the following MECP, Saugeen Valley Conservation Authority (SVCA) guidelines, policies, and standards apply to the design of storm drainage facilities in the Town.

Reference material can be found withing the MECP (i.e., Stormwater Management Planning and Design Manual, March 2003). In addition, Design Criteria for Sanitary Sewers, Storm Sewer, and Forcemains for Alterations Authorized under Environmental Compliance Approval.

Or the most up-to-date version of the above, or any new documents issued by these agencies.

Development proponents are also required to confirm design criteria and obtain approvals from any other relevant ministries or agencies (i.e., MTO, MNRF, DFO, etc.). The most current version of OPSD shall also apply to design and construction of storm drainage facilities as determined by the Town.

The consulting engineer responsible for the design of Storm Water Management Facilities (SWMF) shall consult with the Town and the SVCA early in the process to confirm / clarify issues, policies and design requirements, and shall focus on minimizing the number of pond facilities.

Water quality and quantity control in new development areas are to be provided in Town-owned Town blocks. Low Impact Development (LID) techniques in lieu of and / or in combination with end-of-pipe designs where feasible will be considered by the Town in consultation with the SVCA on a case-by-case basis.

Redundancy to protect for blockage or plugging of LIDs and sequential runoff events is to be provided.

The design of each SWMF shall also focus on opportunities to integrate the SWMF

with the surrounding topography and land uses.

SWMFs are to be created as public amenity features and are to be, when possible, visible to the general public. Opportunities for linkages through the use of trails to larger open space, parkland areas, or other SWMFs are to be maximized.

The design of SWM works is to have full regard for riparian rights of both upstream and downstream landowners. Any change in flow rates, or water levels, that would occur as a result of the development, SWM drainage areas, and / or in-stream works to neighboring private properties must be adequately addressed. Written permission from affected landowners must be sought prior to final design submissions, in cases where acknowledged impacts are proposed, and any governing legislation, in this regard, must be adhered to.

In the case of infilling proposals, on-site SWM concepts may be considered by the Town in conjunction with any potential off-site storm drainage improvements.

Drawings shall consist of an overall plan, a plan and profile of each storm sewer, drawn to the same scale as the roads, pipe bedding, maintenance holes, and other appurtenances. Design (including all drawings and calculations) of the proposed works must be submitted to the Town and applicable government agencies for approval.

6.2 STORMWATER MANAGEMENT REPORT

A Stormwater Management Report (SWM Report) setting out the existing and proposed drainage pattern shall be submitted to and approved by the Town, the Saugeen Valley Conservation Authority and the Ministry of the Environment, Conservation and Parks (if required). Should the development be of a size or location that the Conservation Authority has no requirement to regulate the stormwater management criteria, or in the event that specific design details are not provided by the Conservation Authority, the standard in Appendix “C” shall apply.

The stormwater management requirements within the Town shall be those of SVCA or as listed below in the general requirements:

Table 3: Levels of Service for Major and Minor Systems

Item	**Level of Service**	**Comments**
Storm Sewers	1:5 Year Storm	Use CB inlet controls (as required), to meet hydraulic grade line (HGL) elevation criteria. Storm sewers shall be required in all new developments.
Hydraulic Grade Line (HGL)	1:100 Year Storm	Subject to pre-design confirmation with Town staff, HGL analysis is

		required (for both 5-year and 100-year storms). Confirm there is no surcharging under the 5-year storm event.
Major System	1:100 Year Storm	Overland flow cannot exceed width or flow capacity of ROW or 0.3 m depth.
Major System	Regional Storm Level of Control	Safe conveyance of the Regional Storm through to the SWMF, or a positive outlet via overland flow routes including drainage blocks and / or municipal ROWs, unless otherwise directed by the SVCA or Towns Public Works department.
Culverts	Per Highway Drainage Design Standards (March, 2024)	Refer to current MTO standards.
Bridges	Per Highway Drainage Design Standards (March, 2024)	Refer to current MTO standards.

6.3 CONNECTION TO MUNICIPAL SYSTEM

The storm sewers shall be connected to the municipal storm sewer system (where feasible) or discharged to a natural watercourse as approved by the Town, SVCA and the Ministry of the Environment, Conservation and Parks (or MECP).

6.4 DESIGN CRITERIA

The stormwater management system shall be designed by using MIDUSS (acronym long form?) (current version) or an alternate approved hydrologic model. The Developer's Engineer shall consult SVCA as to the appropriate storm distribution and duration to be used. The Developer's Engineer shall advise the Town in writing as to the Authority's requirements. The Developer shall ensure that the Town is aware of any requirements that SVCA may have so that they can be

reviewed, discussed, and revised should the Town deem it necessary. The design of the stormwater management system shall be in accordance with the following:

- Appendix Stormwater Management Standard for Site Plans or Small Developments.
- Latest version of the "Stormwater Management Practices, Planning and Design Manual" and "Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alternations Authorized under Environmental Compliance Approval", as prepared by MECP.

6.5 LOCATION

The storm sewer shall be located under the gutter line, with lateral connections to catch basins located within the curbing.

Development in the Town may provide for a storm sewer service. Where a storm sewer service is proposed, the service connection will be done in accordance with Municipal Standards. All other sump pump discharges shall be located on dwellings to ensure discharge is not directed to adjacent property. Grading and splash pads shall be used to direct sump pump discharge to the front or rear yard via swales. Sump pump discharge pipe locations shall be noted on the residential lot grading and drainage plan.

The Consulting Engineer shall confirm the availability and location of an appropriate outlet with the Town and shall complete the final design and obtain a Certificate of Approval from the MECP prior to construction. Work on private property shall conform to the Ontario Building Code (OBC).

All pipes shall be laid and maintained in straight alignment and grade. At no point shall the pipe deviate by more than 0.05% horizontally or vertically from the straight alignment. All structures are to be placed within 75mm horizontally of the design location. Should it deviate by more than these amounts it shall be removed and reinstalled.

Blind connections are not preferred.

Adjustment and final setting of catch basin frames shall be completed by pouring concrete, or using concrete riser units, immediately prior to the placement of the top lift of asphalt. Riser units shall be parged on the outside of the catch basins only. Catch basins shall be initially set to base asphalt elevation. Temporary asphalt curb shall be placed at catch basins between the preliminary acceptance and final acceptance stages of the development.

6.6 SEWER PIPE MATERIAL

Sewer pipe material shall be:

Concrete Sewer Pipe (Rigid)

- 300 mm non-reinforced Class 3 – CSA certified to A257.1
- 300 mm or greater reinforced as specified in the tender form – CSA certified to A257.2
- Polyvinyl Chloride (PVC) Pipe (Flexible)
- Class SDR 35 or Class V (320 kPa)
- Annular ribbed profile for ripped pipe
- Polyethylene Sewer Pipe (Flexible) – CSA certified Sewer Class to B 182.6
- 300 mm to 750 mm smooth inner wall, annular corrugated profile (320 kPa)
- 15 PSI bell and spigot joints shall have elastomeric gaskets (CSA certified to B 182.6)

The minimum size, including catch basin leads, shall be 300 mm. The Town may require a larger storm sewer size on parts of the subdivision than required for the subdivision alone.

6.7 STORM SEWER CONSTRUCTION

Storm sewer construction and pipe bedding shall conform to the requirements of the Ontario Provincial Standard Specifications for sewer construction. Pipes shall be bedded in approved granular materials.

Catch basin leads shall be connected to the main sewer with a maintenance hole except where the main sewer size exceeds 450 mm diameter, in which case the lead can be connected directly to the main sewer using a factory manufactured "Tee".

6.8 MAINTENANCE HOLES AND CATCH BASINS

Concrete maintenance holes shall be provided at all changes in direction of the sewer and at all street intersections, with maximum spacing on straight runs as noted:

Table 4: MH Storm Sewer Spacing

Sewer Diameter (mm)	Maximum Spacing (m)
300 to 975	110
1050 to 1350	130
1500 to 1650	160
1800 and above	305

Maintenance holes shall be 1200 mm diameter or larger, conforming to OPSD Series 700. Benching shall be provided in all maintenance holes. Catch basin maintenance holes shall contain a sump or minimum depth of 300 mm below lowest

invert on sewers up to and including 600 mm diameter.

Frames and covers shall be OPSD 401.01 Type A, or approved equal, set on not less than three

(3) layers nor more than six (6) layers moduloc pre-cast units, which shall be parged on the outside face. Adjustment units shall conform to OPSD 701.010.

Catch basins shall be provided on both sides of the street at all low areas with the maximum spacing as noted.

Table 5: CB Storm Spacing

Road Gradient (%)	Maximum Spacing (m)
0 to 3	110
3.1 to 4.5	90
Over 4.5	75

Catch basins for depth up to 2 m from ground level to invert shall be 600 mm square concrete conforming to OPSD 705.01. For greater depths, catch basins-maintenance holes shall be used conforming to OPSD 701.03.

Frame and grates shall be OPSD 400.110.

6.9 OPERATIONS AND MAINTENANCE MANUAL (O&M)

A Storm Water Management Facility (SWMF) O&M Manual is to be prepared for the Town by proponents of new SWMFs. O&M activities to be in accordance with the Town's CLI-ECA.

The manual is to describe how each facility operates, and the short-term and long-term inspection and maintenance requirements of the facilities. Any collection system SWM components, such as OGS (Oil Grit Separator), infiltration galleries, or infiltration trenches, etc. are to be included in the manual.

The manual is to focus on the expected frequency and method of maintenance that will be required in the following specific areas:

- Facility inspection / monitoring program (outline seasonal and annual tasks based on Master / Functional Studies or Draft Plan Approval Conditions).
- Grass cutting.
- Weed control.
- Plantings.
- Trash removal.
- Sediment testing, removal, and disposal.

The SWMF O&M Manual is also to include cost estimates (including labour, equipment, and materials) for the operations and activities described above.

6.10 REPORT FORMAT

Once the reports have been reviewed and accepted by the Town, separate digital and hard copies of the report shall be provided. The SWM Design Report and the O&M Manual shall be separate documents, bound with front / back covers, the Development / Subdivision name shall be included on the front covers.

ARCH D size drawings included within the reports shall be folded and included in the back of the report in appropriate sleeves.

6.11 OPERATIONS AND MAINTENANCE FEATURES

O&M of SWM ponds is to be in accordance with the Town's most current CLI-ECA requirements. The SWM pond designs are to incorporate features that allow the Town to operate and maintain the facility. It is strongly recommended that the design engineer arrange a pre-consultation meeting with the Town once a preliminary pond design has been prepared in order to discuss maintenance operations and features, specifically clean-out procedures, and sediment management and removal.

These features include:

a) Provide a primary maintenance access to the facility (minimum 4 m in width of access road, and an additional minimum 3.0 m buffer where adjacent to residential properties) suitable for municipal equipment. Maintenance access to be asphalt with a composition of 50 mm HL4, 150 mm Granular A, and 250 mm Granular B.

b) Maintenance vehicle access roads and turn-around areas at sediment forebays, outlet pools, and control structures having a maximum gradient of 10%, minimum width of 4 m, a minimum inside turning radius of 14 m, and including a 10 m long loading platform at the forebay and outlet pool locations. Maintenance roads may be required to other locations within the pond block as determined by the Town. Maintenance roads should have maximum crossfall of 2%. Provide a minimum of 3 m offset of clear space between the maintenance road and any property lines.

c) All maintenance vehicle access roads construction shall be structurally designed to support municipal equipment.

d) Provision of a drain down pipe leading from the permanent pool to an MH with dewatering sump, if a gravity outlet is not available.

e) In order to facilitate sediment removal operations, either of the following may be proposed, and are subject to review and approval of the overall approach to sediment management and removal:

A sediment drying space, suitable to contain the volume of sediment and water remaining (after completing pond drain down procedures) shall be provided. Calculations to be provided with assumptions for the volume of

sediment removal and area calculations for appropriate drying area sizing.

OR

Provision of a pond by-pass sewer (sized based on the minor system design criteria) between the inlet and the outlet in order to divert incoming flows around the pond for the duration of clean-out operations (allows for sediment drying in situ).

The sediment drying area should be sized to provide sufficient storage space for

the volume of sediment accumulated over a 10-year period. This can be calculated using the MOE Stormwater Management Planning and Design Manual – Table 6.3. The sediment drying area is to be provided above the extended detention level in the facility. Drainage from the sediment drying area should return to the pond. Area to be sloped towards the pond at 2% to 5% grade. The drying space is to be designed based on a maximum sediment depth of 0.5m.

- A minimum 3 m wide platform at a maximum cross slope of 4% is to be provided around the property boundary of the stormwater block for the purposes of grass cutting.
- Use of a reverse sloped control pipe, which reduces thermal impacts (wet pond application).
- Provision of flow control devices in maintenance hole structures located in a berm for easy access, maintenance, and cleaning as opposed to a vertical pipe structure located in the pond.
- Minimum orifice size of 75 mm diameter. Orifice plates to be stainless steel. Use of a screened orifice plate or weir plate fixed to a permanent structure to achieve extended detention.
- A gate valve and valve box to enable the normal pond outlet to be closed in case of chemical spills where applicable.
- Provide the following table in the SWM Report, as required in the CLI-ECA

Table 6: Sample Table for SWM Report

Location	**Latitude and Longitude or Physical Address (UTM Coordinates can be Provided in Addition)**
Watershed / Subwatershed	E.g., Mad River
Receiver of Discharge	E.g., Surface discharge to “Mad River”
Outlet Location	E.g., Latitude and longitude (UTM coordinates can be provided in addition)
Catchment Area	E.g., 10 ha
Level of Treatment for Suspended Solids	E.g., Level 1 or 2 (80 or 70%) Long-term suspended solids removal or specify if other treatment level
Treatment for Other Contaminants, As Required	E.g. Phosphorus, water temperature

Level of Volume Control	E.g., Local 90th percentile rainfall event or local water balance (X mm)
Design Storm	E.g., Quantity: X-year storm; Quality: X-year storm
Brief Description	Include model number if equipment is used (E.g., OGS/filters)
Receive Emergency Sanitary Overflows	Y/N; briefly describe
Notes / Additional Information	Provide any additional information relevant to this facility not captured above

SECTION 7 | UTILITIES AND STREET LIGHTING

7.1 TELECOMMUNICATIONS

Telecommunication services, which include telephone, internet, and television, shall be provided and installed in a corridor at the location provided in the typical cross section. The Developer must bear the cost of any surcharges for underground installation made by the provider(s) and must grant them any easements for their services. Where requested by the Town, spare conduit(s) for future services will be provided as part of the telecommunication installation.

Telecommunication Companies

There are several telecommunication companies that may have interest in providing installations. The developer shall ensure that all can be installed and shall provide service. The developer shall provide to the Town documentation, satisfactory to the Town that all such companies have been contacted and offered the opportunity for installation.

7.2 ELECTRICAL

Underground electrical installation shall be completed to the satisfaction of the local power supplier based on their most current specification.

7.3 GAS SERVICING

Developers shall ensure that a corridor is provided for the future installation of gas distribution mains and services throughout the subdivision. Should, within the time that the development is being serviced, gas supply is available, then the developer shall arrange for its installation.

7.4 STREETLIGHTING

All developments shall be provided with adequate street lighting in accordance with current utility or Town standards. The materials and suppliers will be reviewed with the Town prior to design, approval of materials, installation, and where appropriate, shall be sourced from suppliers for which the Town currently has luminaires in service.

For decorative lights and poles, an arrangement shall be made with the Town to provide for stocking of spare poles, lights and accessories to the satisfaction of the Town for the initial operation and repair of the street lighting system.

The minimum street lighting requirements are as follows:

- Fixtures will be LED. All fixtures shall have individual photocell

control, and photocells shall have proven 25-year life expectancy and a warranty satisfactory to the Town (20 year unless agreed to otherwise).

- Poles shall be one piece concrete or aluminum. Concrete poles shall be direct burial. Aluminum poles shall be installed on an adjustable frangible base. Poles shall be of sufficient height to ensure a minimum vertical separation from the road surface to the luminaire, of 6 metres.
- The tenon size on pole and fixture must match. Power feed shall be completely underground. The lights shall generally be placed to the outside of curved roads.
- The maximum allowable spacing along the street, between the lights, shall be 35 metres. Increased pole spacing may be considered if photometric modelling is performed and the RP-8 standards are achieved. In all cases, the lighting design shall meet IESNA RP-8 standards for Type III distribution. The poles must be installed at the location as shown on the Town's Typical Cross-Section. Particular care shall be taken to adequately illuminate the intersections and cul-de-sacs. Preference to have poles located along lot lines if possible.

Amendments to this standard are at the Town's discretion/direction and the developer and their engineer are to review the materials specifications with the Town in advance of proceeding to the design stage for the lighting.

Street lighting requirements for collector and arterial roads shall be reviewed with the Town prior to design.

SECTION 8 | LOT GRADING AND DRAINAGE

8.1 GENERAL

The lot grading of all lots and blocks in new subdivisions must be carefully monitored by the Consulting Engineer in order to provide sites that are suitable for the erection of buildings and to provide satisfactory drainage from all lands within the development.

8.2 LOT GRADING PLANS

All Lot Grading Plans for new development in the Town shall be prepared in accordance with the criteria contained in this section and shall contain the following information and detail:

- Scale 1:250 (unless otherwise approved).
- All existing and proposed lot numbers and blocks.
- All proposed rear lot catch basins, leads, top elevations and inverts.
- Location of service connections.
- Existing contours at maximum 0.5 m intervals.
- Existing and proposed elevations at lot corners.
- Specified house grades.
- Proposed road grades, length and elevations on all streets.
- Proposed elevations along the boundary of all blocks abutting single family and semi- detached lots in the subdivision.
- Direction of the surface run-off by means of arrows.
- All proposed easements required for registration.

8.3 LOT GRADING DESIGN

Lot Grading Design for new development in the Town shall be prepared in accordance with the criteria contained in this section and shall contain the following information and detail:

- Generally, the front yards of all lots shall be graded to drain towards the street.

- All boulevards are to be graded with a constant slope from the curb to the street limit. (Minimum slope to be 2.0 percent and the maximum slope to be 8.0 percent).
- All rear yard drainage is to be directed away from the houses in defined swales which outlet at the curb or a catch basin.
- All lot surfaces shall be constructed to a minimum grade of 2.0 percent and a maximum grade of 12.0 percent.
- The maximum slope on all embankments and terraces shall be 3:1 (4:1 preferred).
- The maximum flow allowable to any side yard swale shall be that from two lots plus that from two adjacent lots.
- The maximum number of rear lots contributing to a rear yard swale shall be that of four rear yards.
- The maximum length of a rear yard swale between outlets shall be 90 metres. Where rear yard swales provide drainage for more than one lot, the swale must be located within a 4.0 metre drainage easement over the total length. Rear yard swales shall have a minimum slope of 1.5 percent.
- Swales providing internal drainage from each lot shall have a minimum slope of 2.0 percent.
- Minimum depth of any swale to be 150 mm.
- Maximum depth of rear yard swales to be 500 mm.
- Maximum depth of side yard swales to be 300 mm.
- Maximum side slopes on any swale to be 3:1.
- All drainage swales shall be located on the common lot line between adjacent lots.
- Rear yard catch basins and outlet pipes are to be located entirely on the same lot and shall be located 1.0 metres from the lot line.
- The minimum driveway grade shall be 1.0 percent and the maximum grade permissible shall be 8.0 percent.

8.4 INDIVIDUAL LOT GRADING PLAN

Prior to application for a building permit, individual lot grading plans for each lot (inclusive of infill lots) shall be prepared and shall be submitted to the Town's Building Department for approval. These lot grading plans shall include the following:

- Lot description including Registered Plan Number.

- Dimensioned property limits and house location.
- House type; normal, side split, back split, etc.
- Finished floor elevation.
- Finished garage floor elevation.
- Finished and original grades over septic tile beds.
- Finished basement floor elevation.
- Top of foundation wall elevations (all locations).
- Existing and proposed lot elevations.
- Existing trees to be maintained.
- Driveway location, width and proposed grades.
- All sidewalk locations, width and proposed grades.
- Arrows indicating the direction of all surface drainage and swales.
- Location and elevation of swales.
- Location of decks, porches and patios.
- Location of terraces and retaining walls.
- Location and type of any private sewage disposal systems, reserve areas and private wells.
- Location of engineered fill (where required).
- Lot grading certificate by Developer's Engineer in accordance with the subdivision agreement requirements.
- In the case where the lot falls within SVCA's regulatory limit, the SVCA shall be consulted regarding any additional information provided on the plan.

8.5 CERTIFICATION

Prior to the release of any lot from the subdivision agreement, the Developer's Engineer shall provide certification to the Town of Hanover that the grading and drainage of the lot is in accordance with the approved lot grading and drainage plans.

SECTION 9 | PARKLAND AND LANDSCAPING

9.1 PARKLAND

Parks are an essential component of the urban area. They provide opportunities for both residents and visitors to explore other aspects of daily life and to have social, educational, and recreational experiences in a designated outdoor setting. Parkland that provides maximum benefit to the public, integrates existing natural features (such as streams and creeks) and cultural heritage resources (such as woodlots and hedge rows) in a functional manner and are a vital component of a well-planned community. The ideal park will have a wide range of features and facilities from open meadow to shady groves of trees and will accommodate use by residents with a variety of interests and capabilities.

Prior to the initiation of any design work, the Town requires pre-consultation with the Developer and their agents to address the design features for park and open space facilities.

Where park areas are dedicated to the Town as part of the development, the Developer shall grade and hydroseed the parklands so that they are suitable for recreational use. Hydroseeding will be guaranteed for two (2) growing seasons. Grading shall be to a minimum slope of 2% and appropriate drainage swales and outlets shall be provided for the municipal storm system or too an appropriate outlet. The Town may also ask for a water and sanitary service to be installed for future park amenities.

The requirement for fencing, parking or further landscaping of a park area will be reviewed with the Developer at the time of Draft Plan submission along with the location and geometry of a proposed park.

Stormwater management facilities and environmentally sensitive areas are not to be considered appropriate for parkland dedication.

All trees that die or fail to grow (as per the discretion of the Town) prior to “Final Acceptance” shall be replaced by the Developer.

Developments will incorporate the Town’s Parks, Recreations and Culture Master Plan.

https://www.hanover.ca/our-community/strategic-plans-initiatives/parks-recreation-culture-master-plan

9.2 LANDSCAPING

Boulevards shall be finished with a minimum of 150 mm of topsoil and shall be sodded or seeded.

At least one tree shall be planted in the boulevard in front of each lot (single family

or semi- detached) generally within one year of the completion of the curb and gutter and paving in that section of subdivision. On corner lots, a second tree will be required on the flankage. Trees are to be planted so as not to interfere with other street functions or services when the tree matures. Trees shall be planted in the boulevard, generally opposite the driveway on any lot and not interfering with municipal services.

Trees shall at a minimum be 60-70 mm dia. measured 300 mm above the ground and shall be No. 1 nursery stock. The Town maintains a list of current species of trees acceptable for use in new development and the Town shall be consulted to designate species at the time of planting.

Tree planting and care procedure is recommended to follow the “Ontario Landscape Tree Planting Guide” from the Landscape Ontario Horticultural Trades Association.

All trees that die or fail to grow (as per the discretion of the Town) prior to “Final Acceptance” shall be replaced by the Developer.

9.3 WALKWAYS

Walkways shown on the Plan of Subdivision shall be constructed between parkland and adjacent streets or from street to street. They shall consist of a concrete sidewalk of minimum width of 1.8 m.

The walkway boulevard shall be landscaped, topsoiled and hydroseeded. A standard 1.5 m high chain link may be required and shall be placed along both sides of the walkway “right-of-way” with bollards placed at each end of prevent vehicular traffic from using the walkway.

9.4 TRAILS/PATHWAYS

Walking Trails or Pathways are a mechanism to provide conductivity within newly created subdivisions and existing sections of the urban settlement or existing parks and trails. The Developer will look as to how to bring accessible pedestrian connectivity to the neighborhood.

The developer may be asked to install benches, bicycle racks, signage and other park features and furniture as discussed with the Town.

SECTION 10 | TRAFFIC AND STREET SIGNS

The Developer shall be responsible for erecting all traffic and street name/number signs within the development. These signs may be provided by the Town at the Developer's expense. The Developer shall further be responsible for providing lot identification signs on each lot outlining the appropriate municipal address (911 address) for said lot.

Proposed street names shall be subject to the approval of the Town. Street name signs shall be double-sided and shall be installed at every intersection.

Temporary road name signs and posts, approved by the Town, or permanent signs mounted on temporary posts, must be erected at intersections upon completion of the base course asphalt and prior to the first occupancy.

These signs must be maintained in good condition by the Developer. Permanent signs and posts must be maintained in good condition prior to the start of the maintenance period and until assumption by the Town.

Unassumed Subdivision Signage

Unassumed road signs shall be installed at all entrances to new subdivisions, in a location satisfactory to the Town, and as per the Standard Details. This signage shall be maintained in good condition by the Developer, until assumption of the subdivision, or specific phase of the subdivision by the Town.

SECTION 11| ASSET MANAGEMENT

Prior to Final Acceptance of the services as defined in the Subdivision or Development agreement, the developer shall engage their Engineer to provide the Town with a detailed list of the cost of all of the assets for the purpose of the Town's asset management system.

This list will be split into the required asset categories as directed by the Town of Hanover.

SECTION 12| PAYMENT TO DEVELOPERS

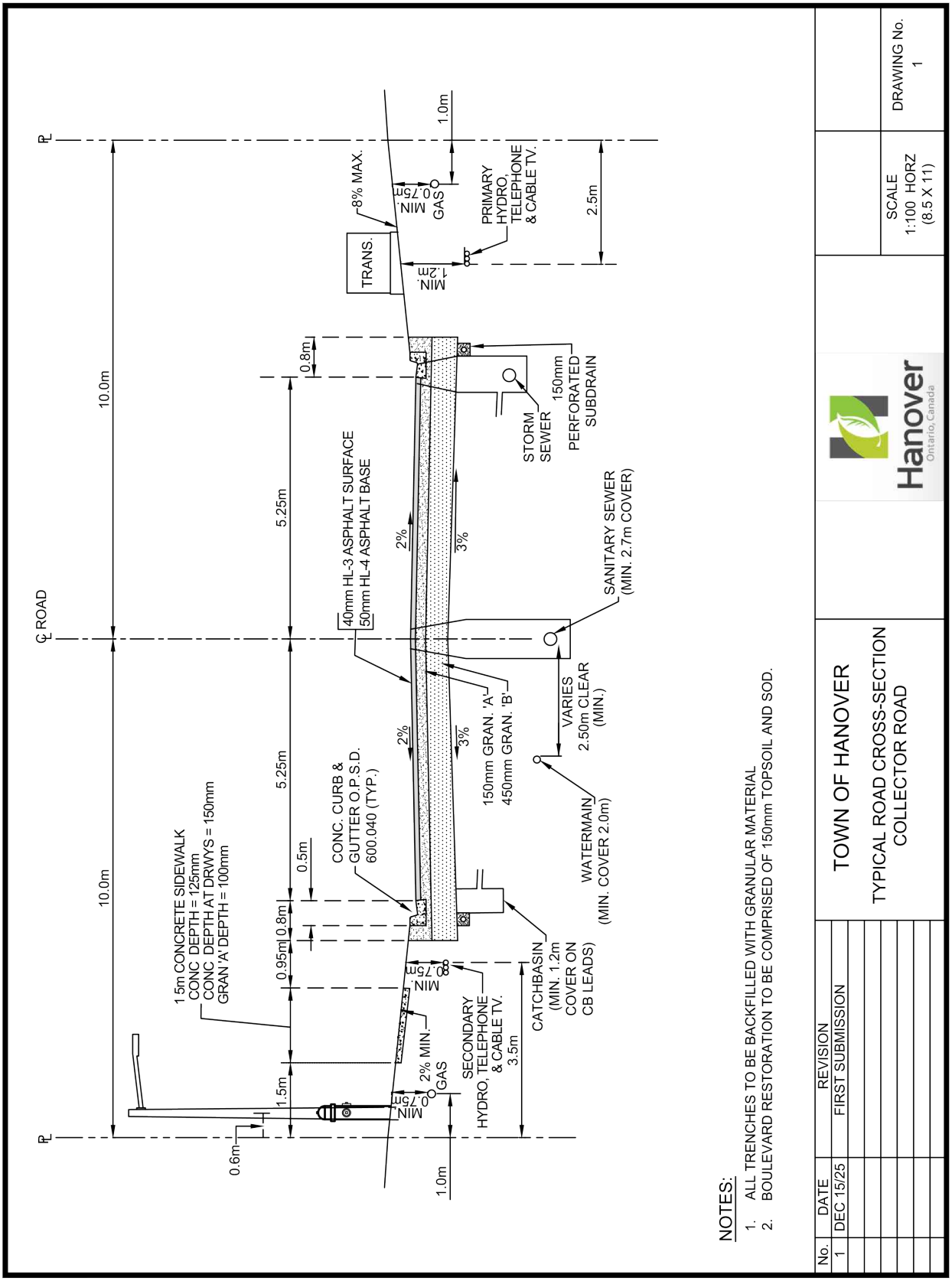
The Town shall not be liable for any costs arising out of the construction of services except potentially the oversizing of the works are required for future development. The Town may pay the marginal cost of any requested oversizing of stormwater collection works and appurtenances beyond an increase in one nominal pipe size above that which might be needed for the development.

For example, where a sanitary sewer (or a watermain) designed solely for the development might require the developer to install a 250 mm dia. pipe, a request for oversizing beyond one pipe size or 300 mm could result in the Town paying the marginal cost.

Where a storm sewer is requested that is larger than that required for the development and any offsite flows (based on their current developed state), the Town may pay the difference in cost for supplying the larger size pipe and appurtenances beyond one incremental pipe size of that needed.

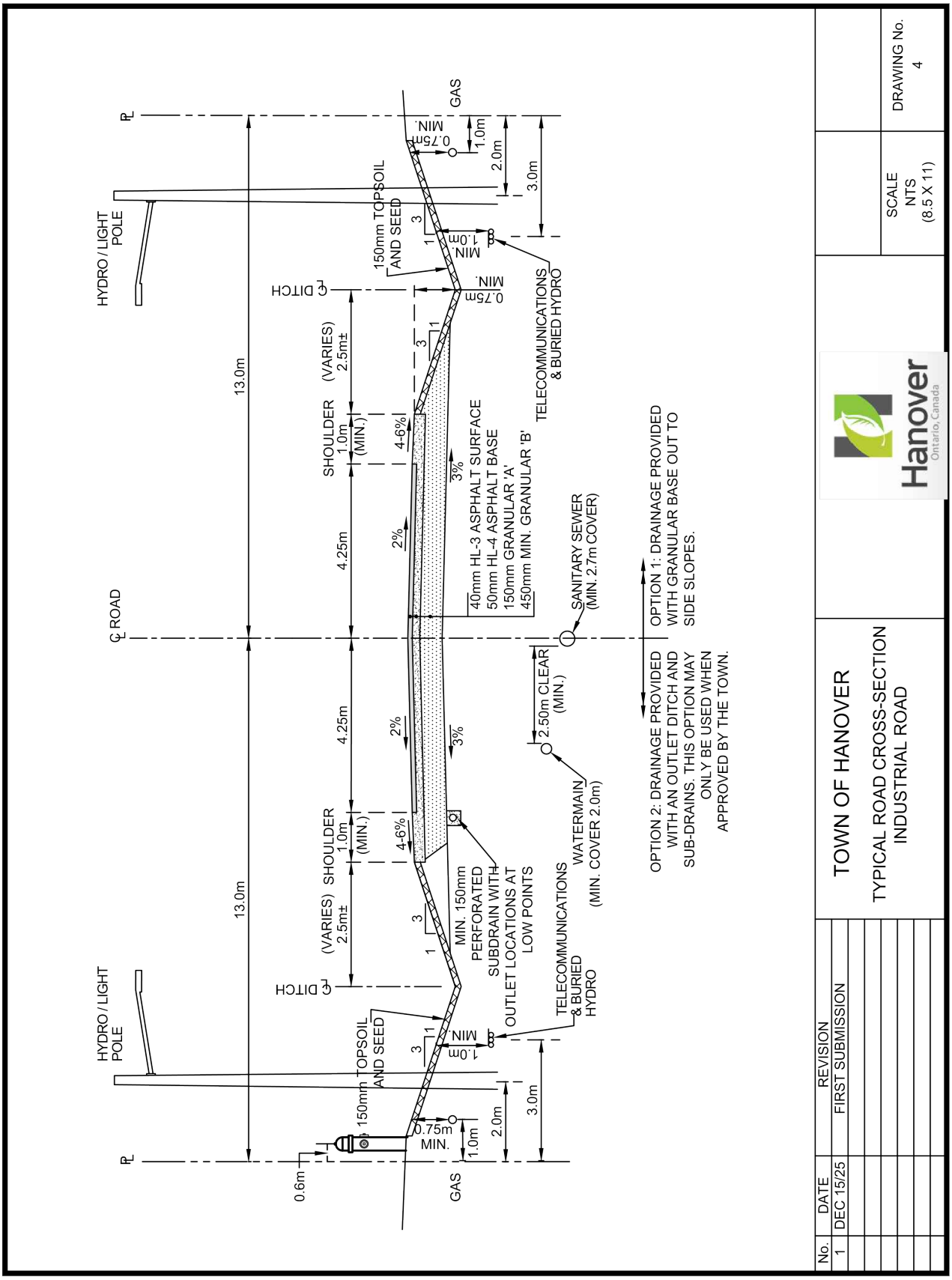
APPENDIX “A”

Typical Urban Cross Section


℄ ROAD
10.0m
10.0m
5.25m
5.25m
0.8m
0.5m
0.8m
0.95m
1.5m
0.6m
1.0m
1.0m
2.5m
1.2m MIN.
TRANS.
8% MAX.
0.75m MIN.
GAS
PRIMARY HYDRO, TELEPHONE & CABLE TV.
150mm PERFORATED SUBDRAIN
STORM SEWER
40mm HL-3 ASPHALT SURFACE
50mm HL-4 ASPHALT BASE
2%
3%
SANITARY SEWER (MIN. 2.7m COVER)
VARIES 2.50m CLEAR (MIN.)
150mm GRAN. 'A'
450mm GRAN. 'B'
WATERMAIN (MIN. COVER 2.0m)
CONC. CURB & GUTTER O.P.S.D. 600.040 (TYP.)
1.5m CONCRETE SIDEWALK
CONC DEPTH = 125mm
CONC DEPTH AT DRWYS = 150mm
GRAN 'A' DEPTH = 100mm
CATCHBASIN (MIN. 1.2m COVER ON CB LEADS)
SECONDARY HYDRO, TELEPHONE & CABLE TV.
3.5m
2% MIN.
NOTES:
1. ALL TRENCHES TO BE BACKFILLED WITH GRANULAR MATERIAL
2. BOULEVARD RESTORATION TO BE COMPRISED OF 150mm TOPSOIL AND SOD.
Hanover
Ontario, Canada
TOWN OF HANOVER
TYPICAL ROAD CROSS-SECTION
COLLECTOR ROAD
SCALE
1:100 HORZ
(8.5 X 11)
DRAWING No.
1
No. DATE REVISION
1 DEC 15/25 FIRST SUBMISSION

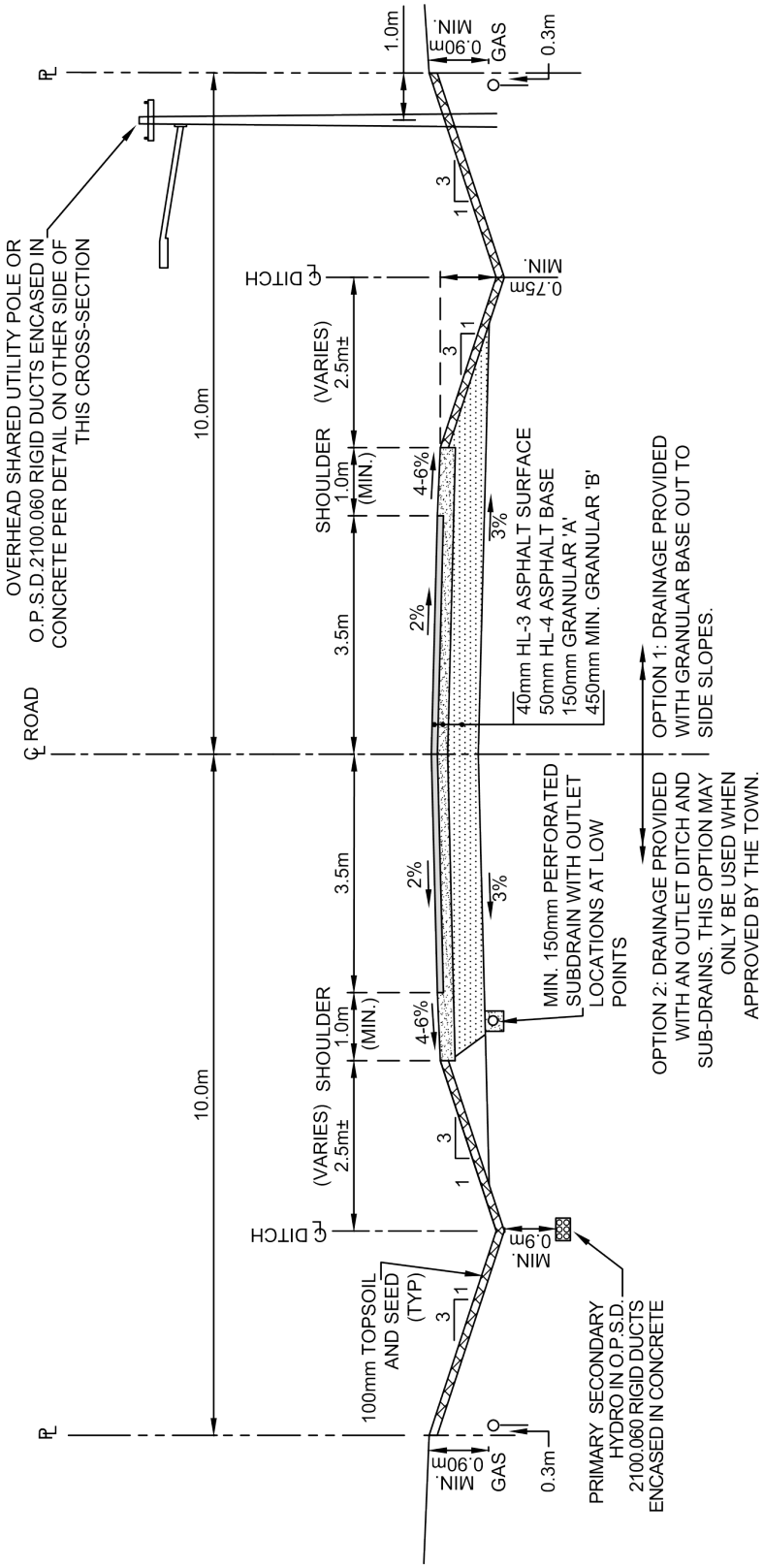
APPENDIX “B”

Typical Collector Cross Section


HYDRO / LIGHT POLE
℄ ROAD
℄ DITCH
13.0m
(VARIES) 2.5m±
SHOULDER 1.0m (MIN.)
4.25m
4-6%
2%
3%
40mm HL-3 ASPHALT SURFACE
50mm HL-4 ASPHALT BASE
150mm GRANULAR 'A'
450mm MIN. GRANULAR 'B'
150mm TOPSOIL AND SEED
0.75m MIN.
1.0m MIN.
TELECOMMUNICATIONS & BURIED HYDRO
SANITARY SEWER (MIN. 2.7m COVER)
2.50m CLEAR (MIN.)
WATERMAIN (MIN. COVER 2.0m)
MIN. 150mm PERFORATED SUBDRAIN WITH OUTLET LOCATIONS AT LOW POINTS
OPTION 1: DRAINAGE PROVIDED WITH GRANULAR BASE OUT TO SIDE SLOPES.
OPTION 2: DRAINAGE PROVIDED WITH AN OUTLET DITCH AND SUB-DRAINS. THIS OPTION MAY ONLY BE USED WHEN APPROVED BY THE TOWN.
GAS
0.6m
0.75m MIN.
1.0m
2.0m
3.0m
Hanover
Ontario, Canada
TOWN OF HANOVER
TYPICAL ROAD CROSS-SECTION
INDUSTRIAL ROAD
SCALE NTS (8.5 X 11)
DRAWING No. 4
No. DATE REVISION
1 DEC 15/25 FIRST SUBMISSION

APPENDIX “C”

Typical Industrial Cross Section



Hanover
Ontario, Canada

TOWN OF HANOVER

TYPICAL ROAD CROSS-SECTION
RURAL ROAD

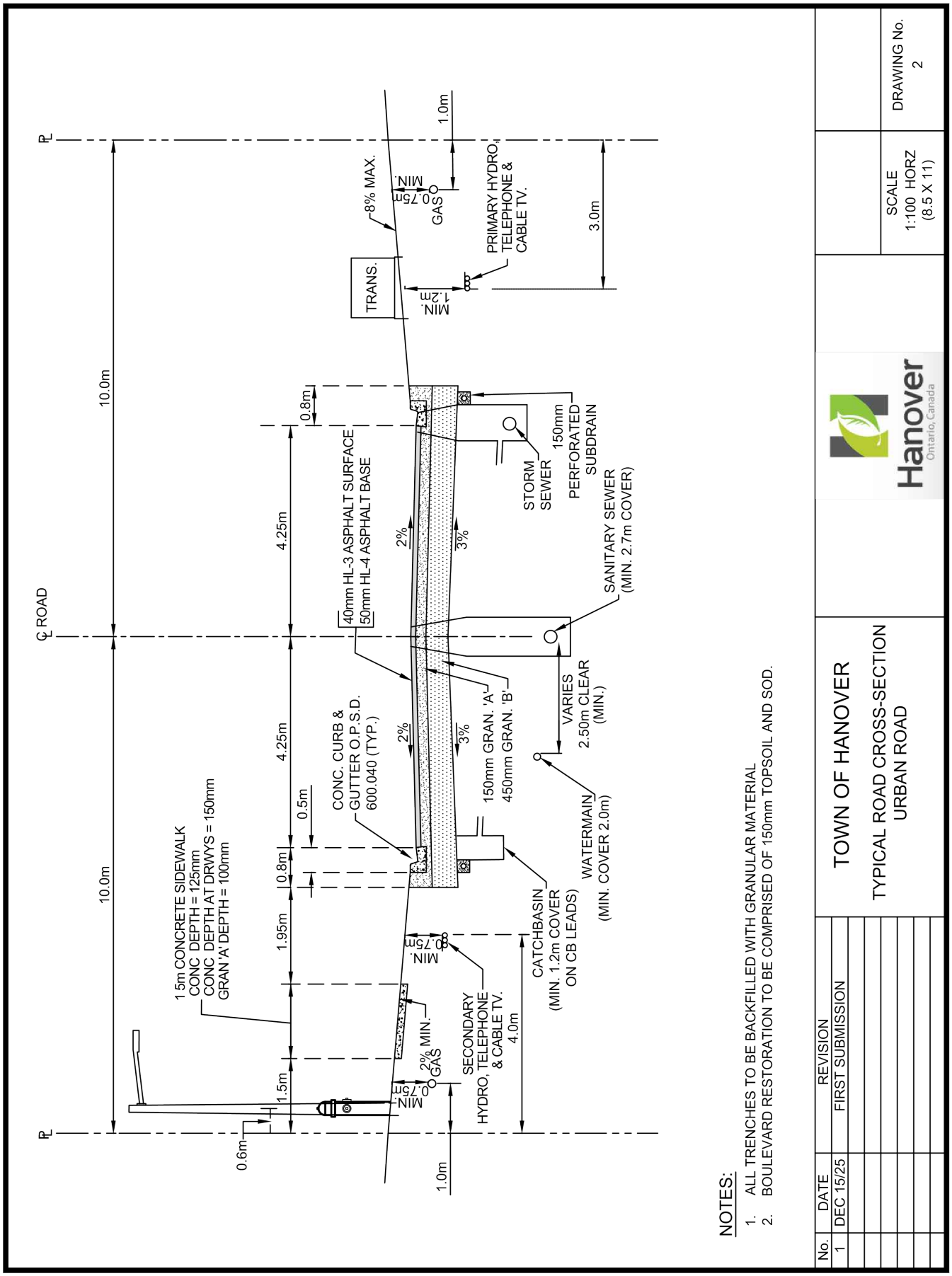
SCALE
1:100 HORZ
(8.5 X 11)

DRAWING No.
3

No.	DATE	REVISION
1	DEC 15/25	FIRST SUBMISSION

APPENDIX “D”

Typical Rural Road Cross Section



NOTES:

1. ALL TRENCHES TO BE BACKFILLED WITH GRANULAR MATERIAL
2. BOULEVARD RESTORATION TO BE COMPRISED OF 150mm TOPSOIL AND SOD.

No.	DATE	REVISION
1	DEC 15/25	FIRST SUBMISSION

TOWN OF HANOVER

TYPICAL ROAD CROSS-SECTION
URBAN ROAD

Hanover
Ontario, Canada

SCALE
1:100 HORZ
(8.5 X 11)

DRAWING No.
2

APPENDIX “E”

STORMWATER MANAGEMENT STANDARD FOR SITE PLANS OR SMALL DEVELOPMENTS

SECTION E1 | DRAINAGE POLICIES

1. APPLICATIONS

These drainage policies will apply to all development or redevelopment requiring site plans or other planning approvals. Where the local Conservation Authority determines the development is in their regulated area or they have an interest in the development, their standard and policies shall apply.

2. DRAINAGE OBJECTIVES

The Town of Hanover has set the following objectives for the management of storm drainage within its boundaries:

- Reduce to acceptable levels, the potential risk of health hazards, loss of life and property damage from flooding.
- Reduce to acceptable levels, the incidence of inconvenience caused by surface ponding and flooding.
- Ensure that any development or redevelopment minimizes
- the impact of change to the groundwater regime; increased pollution; increased erosion or increased sediment transport, especially during construction; and impact to surrounding lands and areas of existing development.
- Maintain, where applicable, any natural stream channel geometry insofar as it is feasible while achieving the above objectives.

3. ATTAINMENT OF DRAINAGE OBJECTIVES

3.1 Major and Minor Systems

In general, the Town of Hanover supports the concept of drainage having two separate and distinct components – the minor drainage system and the major drainage system. The minor system comprises swales, street gutters, ditches, catch basins and storm sewers. The major system comprises the natural streams and valleys and man- made channels, roads, or other overland conveyance systems.

3.2 Run-off Quality Control

The Town requires developers, contractors and builders to plan and execute their operations so as to minimize sediment and debris pickup and transport to water bodies. The degree of control and methods used must meet the regulations and standard of the MECP, MNRF, MTO, and local conservation authorities.

The Town will expect all erosion control works to be properly maintained throughout the duration of the project.

3.3 Conservation Authority Criteria

In the design of new drainage systems within areas regulated by the local Conservation Authority, the Developer's Engineer will be required to follow the most recent edition of the Authority's Stormwater Management Policies and Technical Standard.

MAJOR SYSTEM

a) Hazard Lands and Flood lines

The Town of Hanover requires that Hazard Lands be clearly defined on all watersheds and that no development other than necessary access or services be located herein. The Town also requires that the floodplains that would result from the 1:100 and Regional storms be defined for predevelopment and post development conditions.

Consultation with the local Conservation Authority will be necessary when dealing with Hazard Lands.

b) Detention Ponds

Detention Ponds shall be design so as to minimize any adverse effects to the environment as well as ensuring the safety of local residents. Unless noted otherwise, detention ponds are to be designed in accordance with the Ministry of the Environment, Conservation and Parks Stormwater Management Planning and Design Manual (March 2003), or the latest edition.

MINOR SYSTEM

a) Watershed Area

The watershed area shall be determined from the contour plans and shall include all areas that naturally drain into the system. Fringe areas not accommodated in adjacent drainage systems, and any areas which may become tributary by reason of re-grading.

b) Storm Drainage Plans

<u>External Areas</u>

A plan shall be prepared to a scale dependent on the size of the watershed area, to show the nature of the drainage of the lands surrounding the development site. The area to be developed and all existing contours used to justify the design shall be clearly shown. This plan shall be prepared and submitted to the Town's Engineer at the functional report stage.

Internal Drainage Plan

All internal drainage plans shall be prepared and shall include all streets, blocks, lots and easements. The proposed storm sewer system shall be shown on this plan with all maintenance holes and the area contributing to each structure shall be clearly outlined on the plan. The area in hectares and the run-off coefficient shall be shown within the contributing area.

In determining the contributing area to each storm sewer structure, the proposed lot grading must be considered to maintain consistency in the design.

The length, size, and grade of each section of the minor system shall also be shown on the storm drainage plan. Arrows should depict the overland flow route and the extent of flooding from the major storm.

Rain water leaders shall not be connected directly to the storm sewer system. Leaders on all single family and semi-detached residential units shall be constructed in a manner so as to not interfere with adjacent properties. Sump pump discharge should discharge to the side yard swale.

4. HYDRAULIC DESIGN

4.1 Design Levels

The system of street gutters, catch basins, storm sewers or open ditches, where permitted, shall be designed for the 1:5 year storm. Culverts or sewers crossing major County roads or Provincial highways shall be designed and approved in accordance with the requirements of the County of Grey Highways Department or the Ministry of Transportation, respectively.

4.2 Rational Method

In general, the Rational Method shall be used for the sizing of the minor sewer system at the final design stage. Calculations based on a hydrologic simulation model are required for systems serving large areas or involving treatment and/or storage systems.

4.3 Stormwater Management Report

Hydrologic studies should describe the model parameters and criteria for their selection as well as input and output data. The Consulting Engineer has the responsibility for the computations, and the Town's Engineer shall check the main assumptions and the input data.

All information required for this verification shall be submitted with the hydrologic computations. Copies of the report, where required, shall be provided to the local Conservation Authority and the MECP for approval purposes.

Each report shall include a section outlining the following:

- Run-off Quantity Control
  - Address the impact of the minor and major storm as required in these standard for both predevelopment and post development regimes.
- Run-off Quality Control
  - Address best management practices proposed to achieve desired treatment.
  - Refer to MECP Stormwater Management Planning and Design manual and Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains.
- Erosion and Sediment Control Plan
  - Provide comments and detail on a Site Plan or a separate plan as part of the submission.
- Major System/Overland Flow Routes
  - Provide extent of flood for the Major Storm or Site Plan
  - Show major storm route
  - Comment on a right to access of major storm routes based on land ownership on adjacent lands
- Maintenance Considerations
  - Address ownership and obligation for maintenance
  - A maintenance manual outlining maintenance tasks and frequency of maintenance activities shall be provided as part of the Stormwater Management Report process.
- Facility Access
  - Access to all areas of any proposed facility needs to be detailed and commented on in the report.

5. STORM SEWER DESIGN

The requirements for storm sewer design shall be in accordance with the latest edition of the Ministry of the Environment, Conservation and Parks Design Standard.

5.1 Location

Any storm sewers within road allowances shall be located as shown on the standard Town of Hanover, road cross section drawings (Appendix ‘A’).

5.2 Limits

All sewers shall be terminated at the development limits when external drainage areas are considered in the design. Suitable provision shall be provided to allow for the future extension of the sewer (i.e., maintenance hole knock-outs, sewer stubs, etc.).

5.3 Sewer Alignment

All storm sewers shall be laid in a straight line between maintenance holes.

5.4 Pipe Crossings

A minimum clearance of 0.20 metres shall be provided between the outside of all pipe barrels at all points of crossing. In the event of watermain crossing, Ministry of the Environment, Conservation and Parks separation distances shall apply.

In cases where the storm sewer crosses a recent utility trench at an elevation higher than the elevation of the utility, a support system shall be designed to prevent settlements of the storm sewer, or alternatively the utility trench is to be excavated and backfilled with compacted crushed stone or concrete to adequately support the storm sewer. When the storm sewer passes under an existing utility, adequate support shall construction to prevent damage to that utility. In either case, the support system shall meet the minimum requirements provided by the utility company.

5.5 Changes in Pipe Size

No decrease of pipe size from a larger upstream pipe to a smaller downstream size will be allowed regardless of the increase in grade.

5.6 Sewer Pipe Materials

- Concrete Sewer Pipe (Rigid)
  - 150 mm to 375 mm Class 3
  - 375 mm or greater as specified in the tender form
- Polyvinyl Chloride (PVC) Pipe (Flexible)
  - Class SDR35 or Class V (320 kPa)
  - Annular ribbed profile for ribbed pipe
- Polyethylene Sewer Pipe (Flexible) – CSA certified Sewer Class to B 182.6
  - 150 mm to 600 mm
  - Smooth inner wall, annular corrugated profile (320 kPa), 15 PSI bell and spigot joints shall have elastomeric gaskets (CSA certified to B 182.6)

The Town shall be consulted for the material of any storm sewer > 900 mm or deeper than 5 metres

5.7 Pipe Bedding

The class of pipe and the type of bedding shall be selected to suit loading and proposed construction conditions. Details and types of bedding are illustrated in OPS Drawing 802.03.

5.8 Backfill for Sewers

Backfill for sewers shall be in accordance with OPSD 803.04.

6. MAINTENANCE HOLES

6.1 Location

Maintenance holes shall be located at each change in alignment, grade or pipe material, at all pipe junctions and at intervals along the pipe to permit entry for maintenance to the sewer.

6.2 Maximum Spacing of Maintenance Holes

Maintenance hole spacing shall be as per MECP Design Guidelines as follows:

Sewer Diameter (mm)	Maximum Spacing (m)
300 to 975	110
1050 to 1350	130
1500 to 1650	160
1800 and above	305

6.3 Maintenance Hole Types

Maintenance holes may be constructed of precast or poured concrete. The standard maintenance hole details as shown on the OPS Drawings shall be used for maintenance holes. In cases where the standard drawings are not applicable, the maintenance holes shall be individually designed and detailed.

Precast maintenance holes shall conform to ASTM specifications C-478 M latest revision.

A reference shall be made on all profile drawings to the type and size of all storm maintenance holes.

6.4 Maintenance Hole Design

- Safety gratings shall be provided in all maintenance holes when the depth of the structure exceeds 5.0 m.

- When the difference in elevation between the obvert of the inlet and outlet pipes exceeds 0.9 m, a drop structure shall be placed on the inlet pipe.
- All storm sewer maintenance holes shall be benched in accordance with the OPS Drawings.

6.5 Grades for Maintenance Hole Frames and Covers

All maintenance holes located within the traveled portion of a roadway shall have the rim elevation set flush to the base course of asphalt.

Prior to the placement of the surface course asphalt the maintenance hole frame shall be adjusted to the finished grade of asphalt. Steel adjusting rings will not be permitted. The parging and setting of the frame and cover shall be in accordance with the details on the OPS Drawings. A maximum of 300 mm of modular rings shall be permitted on maintenance hole in new subdivisions.

6.6 Head Losses Through Maintenance Holes

Suitable drops shall be provided across all maintenance holes to compensate for the loss of energy due to the change in flow velocity and for the difference in the depth of flow in the sewers.

The minimum drops across maintenance holes shall be as follows:

Change of Direction	Minimum Drop (mm)
1 to 45 degrees	30 mm
46 to 90 degrees	60 mm

7. CATCH BASINS

7.1 Location and Spacing

Catch basins shall be generally located upstream of sidewalk crossings at intersections.

Catch basins spacing will vary with street width, grade and cross fall, the location shall be provided on both sides of the street at all low areas with the maximum spacing as noted:

Road Gradient (%)	Maximum Spacing (m)
0 to 3	110
3.1 to 4.5	90
Over 4.5	75

Double catch basins shall normally be required when the catch basin intercepts flow from more than one direction. Single catch basins may be used in the case where the total length of drainage to the catch basin is subject to the analysis of the major – minor system.

Rear lot catch basins and connections shall be located as outlined in the lot grading criteria and in all cases shall discharge/connect to a structure.

7.2 Catch Basin Types

Catch basins must be precast with full depth sumps, as shown on the OPS Drawing 705.010.

Special catch basins and inlet structures shall be fully designed and detailed by the Consulting Engineer.

7.3 Catch Basin Connections

Type	Minimum Size of Connection	Minimum Grade of Connection
Single and Double Catch Basins	300 mm	1.0%
Rear Lot Catch Basin	250 mm	1.0%

7.4 Catch **Basins** Frame and Covers

The frame and cover for catch basins shall be as detailed in the OPS Drawing 400.110.

8. INLETS, OUTFALLS AND SPECIAL STRUCTURES

8.1 Inlets

Inlet structures must be fully designed and detailed on the Engineering Drawings. Gabions, rip rap or concrete shall be provided at all inlets to protect against erosion and to channelize flow to the inlet structure.

8.2 Outlets

The OPSD 804.030 standard headwall shall be used for all storm sewers up to 900 mm in diameter. For sewers over 900 mm in diameter, the OPSD 804.040 headwall shall be used. All headwalls shall be equipped with a grating over the outlet as per OPSD 804.050.

Suitable erosion protection, which may include gabions, rip rap, concrete or other erosion protection shall be provided to the satisfaction

of the regulatory agencies at all outlets to prevent erosion of the watercourse and the area adjacent to the headwall.

8.3 Open Channels

The proposed criteria for an open channel shall be submitted to the Town for their approval. The Consulting Engineer shall be responsible for obtaining approval from the MNRF, MECP, and the local Conservation Authority, if the open channel concept is favourably considered.

The Conservation Authority shall be consulted during initial project planning in regard to any potential watercourse alterations associated with the development proposal.

Watercourse alterations are subject to permitting requirements under the Authority's

- Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Ontario Regulation 147/06).

Planned watercourse alterations may, in addition, be subject to other Agency requirements:

- DFO;
- MNRF;
- Navigable Waters (Transport Canada); and
- Drainage Act.