Transportation Impact Assessment – Step 4: Analysis

120 Lusk Street

Prepared for NESCA Holdings Corp.
by Arcadis IBI Group
October 14, 2025

TIA Plan Reports - Certification

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

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

By submitting the attached TIA report (and any associate documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below:

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;

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

3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

4. I am either a licensed[1] or registered[1] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning □.

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

Dated at Ottawa this 14th day of October, 2025.
(City)

Name: Ben Pascolo-Neveu, P.Eng.

Professional Title: Project Engineer

Ben Pascolo-Neveu

Signature of Individual certifier that she/he meets the above four criteria

Office Contact Information (Please Print)
Address: 500-333 Preston Street
City / Postal Code: K1S 5N4
Telephone / Extension: 613-225-1311 ext. 64074
E-Mail Address: ben.pascoloneveu@arcadis.com

Stamp

Document Control Page

CLIENT:	NESCA Holdings Corp.
PROJECT NAME:	120 Lusk Street
REPORT TITLE:	Transportation Impact Assessment
IBI REFERENCE:	143412
VERSION:	1.0 DRAFT Submission
DIGITAL MASTER:	143412 120 Lusk Street - Internal Documents\6.0_Technical\6.23_Traffic\03_Reports\TTR_120_lusk_st_TIA_MASTER_2023-05-23.docx
ORIGINATOR:	Ben Pascolo-Neveu
REVIEWER:	Ben Pascolo-Neveu
AUTHORIZATION:	David Hook
CIRCULATION LIST:	Josiane Gervais - City of Ottawa Transportation Project Manager
HISTORY:	1.0 – TIA Steps 1,2 & 3 Submitted for City Review – June 16, 2023 2.0 – TIA Step 4 Submitted for City Review – February 13, 2025 3.0 – TIA Step 4 Reissued for City Review – October 14, 2025

Table of Contents

Table of Contents

Table of Contents

Table of Contents

List of Tables

List of Figures

Table of Contents

List of Exhibits

List of Appendices

Executive Summary

Arcadis was retained by NESCA Holdings Corp. to undertake a Transportation Impact Assessment (TIA) in support of a Site Plan Control application for a proposed medical facility, daycare, pharmacy and restaurant to be located at 120 Lusk Street, Ottawa. The subject development consists of an approximate 0.6-hectare, greenfield parcel included in the overall 4401 Fallowfield Road Plan of Subdivision which is gradually being transformed into a business park. The site is generally bound by O'Keefe Court to the north, Lusk Street to the south and undeveloped lands to the east and west.

The proposed development at 120 Lusk Street is expected to generate up to 117 and 133 two-way vehicular trips during the weekday morning and afternoon peak hours, respectively. The mode share targets were developed based on the South Nepean Traffic Assessment Zone (TAZ) and proportionally adjusted, in accordance with the Conditions of Approval for 4401 Fallowfield Road, to yield an 85% auto/15% non-auto mode share split.

Fallowfield & O'Keefe/Cobble Hill is presently operating as a two-way stop-controlled intersection. The results of the capacity analysis conducted for this study indicate that, by 2027, traffic signals will be operationally required and warranted under background traffic conditions. With traffic signals in place, the intersection would be expected to operate at LOS 'D' beyond the 2032 study horizon year. If traffic signals are not implemented by the study horizon year, delays of at least 5 minutes are expected at the Fallowfield & O'Keefe intersection with or without the inclusion of site-generated traffic. As site-generated traffic will not contribute significantly to any potential traffic operational issues at this intersection, it is recommended that the City continue monitoring this location on an annual basis to determine the appropriate timing for the introduction of traffic signals.

The results of the analysis indicate that the intersections of O'Keefe Court & Lusk Street and Fallowfield Road & Forager Street are expected to operate within acceptable standards (LOS 'D' or better) during the weekday morning and afternoon peak hours. Both are T-intersections that are configured with stop control on the minor road and are not expected to require additional auxiliary lanes or modifications within the timeframe of this study.

A multi-modal analysis identified deficiencies in the existing road network and potential remediation measures have been suggested which the City could consider to achieve these prescribed targets. It should be noted that, although these measures would provide improvements for a range of transportation modes, they are not required to safely accommodate the transportation demands of the proposed development.

Roadway modifications (RMA-2019-TPD-041B) were implemented in late 2021 to satisfy a conditional requirement for the Subdivision, including a right-in/right-out intersection at Fallowfield & Forager and a multi-use path along the west side of Fallowfield Road between O'Keefe Court to just south of Forager Street. It is understood that the southbound bus stop originally proposed as part of this RMA has been deferred until traffic signals are implemented at the Fallowfield & O'Keefe/Cobble Hill intersection.

All study area intersections were shown to operate well within the capacity constraints of the adjacent transportation network, with the appropriate modifications in place (i.e. signalization of Fallowfield & O'Keefe/Cobble Hill by 2027). Further, the proposed development will contribute a nominal increase in traffic on the adjacent road network. A Post-Development Monitoring Plan is, therefore, not a requirement of this study.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network with the recommended actions and modifications in place.

1 Introduction

Arcadis was retained by NESCA Holdings Corp. to undertake a Transportation Impact Assessment (TIA) in support of a Site Plan Control application for a proposed medical facility, daycare, pharmacy and restaurant to be located at 120 Lusk Street, Ottawa. The development represents a parcel of land in the original 4401 Fallowfield Road Plan of Subdivision.

In accordance with the City of Ottawa's Transportation Impact Assessment Guidelines, published in June 2017, the following report is divided into four major components:

- **Screening** – Prior to the commencement of a TIA, an initial assessment of the proposed development is undertaken to establish the need for a comprehensive review of the site based on three triggers: Trip Generation, Location and Safety.
- **Scoping** – This component of the TIA report describes both the existing and planned conditions in the vicinity of the development and defines study parameters such as the study area, analysis periods and analysis years of the development. It also provides an opportunity to identify any scope exemptions that would eliminate elements of scope described in the TIA Guidelines but not relevant to the development proposal, based on consultation with City staff.
- **Forecasting** – The Forecasting component of the TIA is intended to review both the development-generated travel demand and the background network travel demand. It also provides an opportunity to rationalize this demand to ensure projections are within the capacity constraints of the transportation network.
- **Analysis** – This component documents the results of any analyses undertaken to ensure that the transportation related features of the proposed development are in conformance with prescribed technical standards and that its impacts on the transportation network are both sustainable and effectively managed. It also identifies a development strategy to ensure that what is being proposed is aligned with the City of Ottawa's policies and city-building objectives.

Throughout the development of a TIA report, each of the four study components above are typically submitted in draft form to the City of Ottawa and undergo a review by a designated Transportation Project Manager (TPM). Any comments received are addressed to the satisfaction of the City's Transportation Project Manager before proceeding with subsequent components of the study. Based on email correspondence with the City TPM, dated May 25th, 2023, it was confirmed that a joint Screening, Scoping and Forecasting report would suffice for this study as a result of similarities between the subject site and the neighbouring properties at 135 and 140 Lusk Street, for which TIAs were conducted.

Roadway modifications proposed as part of RMA-2019-TPD-041B were implemented in late 2021 to satisfy a conditional requirement for the Subdivision. This RMA included a right-in/right-out intersection at Fallowfield Road & Forager Street and a multi-use pathway along the west side of Fallowfield Road. It is understood that the southbound bus stop originally proposed as part of this RMA has been deferred until traffic signals are implemented at the Fallowfield & O'Keefe/Cobble Hill intersection. The need for additional off-site road modifications or a Post-Development Monitoring Plan to track performance of the planned TIA Strategy will be confirmed through the analysis undertaken in this study.

2 TIA Screening

An initial screening was completed to confirm the need for a Transportation Impact Assessment (TIA) by reviewing the following three triggers:

- **Trip Generation**: The proposed development exceeds the 60-person trip threshold for each weekday peak hour, therefore the Trip Generation trigger is satisfied.
- **Location**: The proposed development will not be accessed from a boundary street that is designated as part of the City's Transit Priority, Rapid Transit network or Spine Bicycle Networks, nor is the subject site within a Design Priority Area or Transit-Oriented Development zone. As such, the Location trigger is not satisfied.
- **Safety**: A review of boundary street conditions did not identify an elevated potential for safety concerns adjacent the site, therefore the Safety trigger is not satisfied.

As the proposed development meets the Trip Generation trigger, the need to undertake a TIA is confirmed.

A copy of the TIA Screening Form is provided in **Appendix A**.

3 Project Scoping

3.1 Description of Proposed Development

3.1.1 Site Location

The subject property is presently an undeveloped, greenfield site located at 120 Lusk Street and is within the 4401 Fallowfield Road business park. The site occupies approximately 0.6 hectares and is generally bound by O'Keefe Court to the north, Lusk Street to the south and undeveloped lands to the east and west.

Based on GeoOttawa, the property is zoned IP[2265] H(12) – Business Park Industrial Zone.

The site location and its surrounding context are illustrated in **Exhibit 1**.

ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact
Assessment

Exhibit 1:
Site Location

PROJECT No. 143412

SCALE: 0m 125m 250m

3.1.2 Land Use Details

Table 1 summarizes the proposed land uses included in this development.

Table 1 - Land Use Statistics

LAND USE	SIZE – GFA[1]
Medical Office	~1,375 m^2 (~14,801 ft^2)
Sit-down Restaurant	~187 m^2 (~2,010 ft^2)
General Office Building	~1,481 m^2 (~15,962 ft^2)
Pharmacy	~185 m^2 (~1,992 ft^2)
Daycare Centre	~374 m^2 (~4,022 ft^2)

Note:[1] GFA stands for 'Gross Floor Area'.

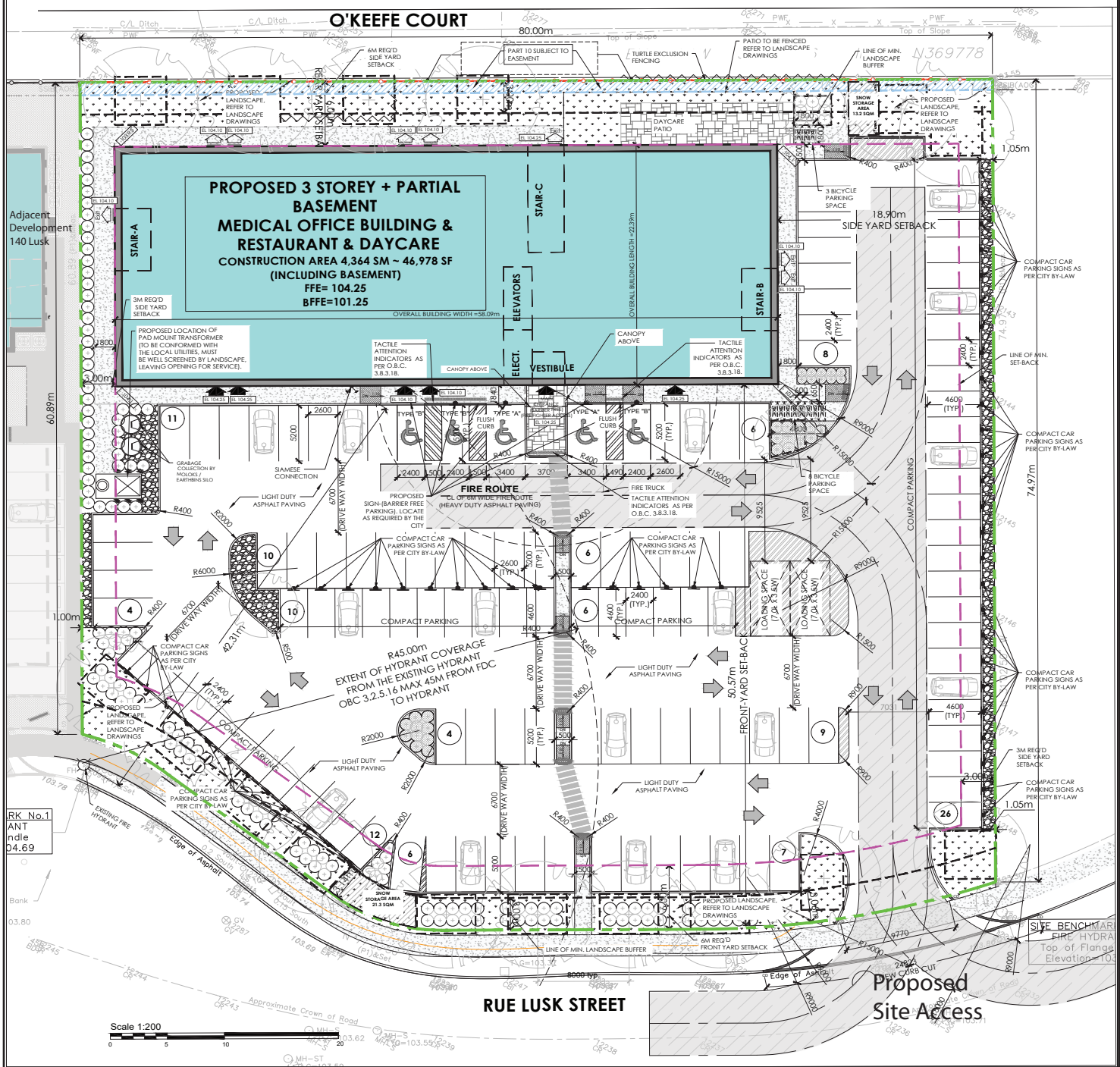
The proposed development is illustrated in **Exhibit 2** below and the full site plan, including additional details pertaining to site statistics, can be found in **Appendix B**.

The site will be accessed via a single all-movement private approach with a direct connection to Lusk Street.

With regards to parking, a total of 125 passenger vehicle spaces are proposed within the on-site surface parking lot, including 5 accessible parking stalls.

3.1.3 Development Phasing & Date of Occupancy

It is anticipated that the proposed development will be constructed and fully occupied in a single phase by the end of 2027.



ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 2:
Proposed Development

PROJECT No. 143412

SCALE: N.T.S.

3.2 Existing Conditions

3.2.1 Existing Road Network

3.2.1.1 Roadways

The proposed development is bound by the following street(s):

- **Lusk Street** is a two-lane local road under the jurisdiction of the City of Ottawa, extending from O'Keefe Court and terminates in a cul-de-sac approximately 250m to the southwest. Lusk Street has a 20m right-of-way, an unposted speed limit of 50 km/h and provides access to the 4401 Fallowfield Road business park.
- **O'Keefe Court** is a two-lane local road under the jurisdiction of the City of Ottawa, extending west from Fallowfield Road and terminating in a cul-de-sac approximately 800m west of the Fallowfield & O'Keefe intersection. The roadway has a rural cross-section with a posted speed limit of 50km/h. O'Keefe Court extends along the former Fallowfield Road alignment (prior to its realignment to Strandherd Drive). Its right-of-way (ROW) therefore varies and is generally 30m, however, additional ROW has been taken on a portion of the north side to accommodate a multi-use path.

Other streets within the vicinity of the proposed development are as follows:

- **Fallowfield Road** is a two-lane, undivided rural arterial roadway under the jurisdiction of the City of Ottawa with a right-of-way protection of 44.5m. Between Highway 416 and Strandherd Drive, Fallowfield Road has a posted speed of 80km/h, prior to its 90-degree realignment to the northeast through the context area with a reduced speed limit of 60 km/h.
- **Forager Street** is a two-lane local road under the jurisdiction of the City of Ottawa, linking Lusk Street to Fallowfield Road and provides access to the 4401 Fallowfield Road business park. Forager Street has a 20m right-of-way and an unposted speed limit of 50 km/h.
- **Strandherd Drive** is a four-lane, divided urban arterial road under the jurisdiction of the City of Ottawa with a posted speed limit of 80 km/h within the vicinity of the subject lands, and a right-of-way protection of 44.5m.
- **Cedarview Road** is a roadway under the jurisdiction of the City of Ottawa that extends from Strandherd Drive in the south to Baseline Road in the north. Cedarview Road is a two-lane, urban arterial road north of Fallowfield Road, with a 37.5m right-of-way protection. Between Fallowfield Road and Jockvale Road, it is a major collector with a 26m right-of-way. The posted speed limit on Cedarview Road is 60 km/h. South of Strandherd Drive and the VIA Rail corridor, Cedarview Road has been renamed Borrisokane Road and continues south to Barnsdale Road.
- **Foxtail Avenue** is a two-lane local road under the jurisdiction of the City of Ottawa, extending north from O'Keefe Court and provides access for the Orchard Estates residential community. The posted speed limit is 40 km/h.

3.2.1.2 Intersections

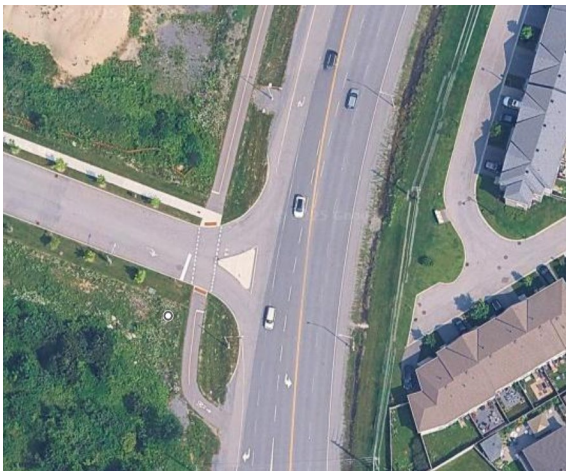
The following existing intersections have been identified as having the greatest potential to be impacted by the proposed development:

Fallowfield Road & O'Keefe Court / Cobble Hill Drive presently exists as a four-legged unsignalized intersection with stop-control on the O'Keefe Court and Cobble Hill Drive approaches. Each leg of the intersection is configured with a single through lane and auxiliary left-turn lane. Auxiliary right-turn lanes are provided along Fallowfield Road, while the side streets are configured with shared through-right lanes. The City of Ottawa is currently monitoring this intersection for implementation of traffic signals, once warranted.

Figure 1 - Fallowfield Road & O'Keefe Court / Cobble Hill Drive intersection

Fallowfield Road & Forager Street is a three-legged intersection which has been modified with a raised diverter island to restrict turning movements to right-in/right-out and incorporate a multi-use path (MUP) on the west side of Fallowfield Road between Forager Street and Fallowfield Road. This MUP includes a bi-directional shared cross-ride on the west leg to achieve connectivity across Forager Street. The eastbound approach has a single right-turn lane. The north leg of the intersection consists of a single through lane, a shared through-right lane and the beginning taper of a single auxiliary left-turn lane for the intersection to the south within the confines of this intersection. The south leg is comprised of two through lanes.

Figure 2 - Fallowfield Road & Forager Street



3.2.1.3 Traffic Management Measures

There are currently no traffic management or traffic calming measures on the boundary streets within the vicinity of the proposed development.

3.2.1.4 Nearby Driveways

The Hampton Inn and Suites Hotel is located to the south of the subject development and includes two full-movement private approaches on the south side of Lusk Street directly opposite the proposed development.

3.2.2 Existing Bicycle and Pedestrian Facilities

The section of Fallowfield Road was reconstructed in late 2021 to incorporate a multi-use path on the west side from just south of Forager Street to O'Keefe Court. An east-west multi-use path presently exists along the north side of O'Keefe Court from Lytle Park in the west to Cedarview Road in the east as well. There are also sidewalks on Forager Street and Lusk Street which

provide direct connections between active transportation facilities on Fallowfield Road and O'Keefe Court.

With respect to dedicated cycling infrastructure within the context area, a bike pocket exists along Fallowfield Road on the southbound approach to the Fallowfield Road & O'Keefe Court/Cobble Hill Drive intersection. Uni-directional cycle tracks are also provided on both sides of Strandherd Drive from Fallowfield Road to Maravista Drive with cross-rides, two-stage left-turn bike boxes and bicycle signals at key signalized intersections.

3.2.3 Existing Transit Facilities and Service

OC Transpo currently operates the following transit route within close proximity to the proposed development:

- **Route #70** provides regular, all-day service 7 days a week between Fallowfield and Limebank, operating on an approximate 15-minute headway during weekday peak periods and 30-minute headway during off-peak periods and weekends.
- **Route #110** provides regular service 7 days a week between Limebank and Innovation/Briarbrook. This route generally operates on 30-minute headways on weekdays. On the weekend, trips are limited to select trips in the morning and late afternoon/early evening time.
- **Route #173** provides weekday peak period and peak direction service between Citigate and alternates between Fallowfield Station and Barrhaven Centre. This route operates on an approximate 30-minute headway on weekdays, with weekend frequencies reduced to provide service approximately once per hour.

The nearest bus stop pair to the proposed development are located at the CitiGate Drive and CrossKeys Place junction, just south of Fallowfield Road and represent an approximate 630-metre walking distance from the site, which serves all three of the above noted routes.

Transit service maps for the above noted transit routes are provided in **Appendix C**.

3.2.4 Collision History

A review of historical collision data has been conducted for the road network surrounding the proposed development. The TIA Guidelines require a safety review if at least six collisions for any one movement or of a discernible pattern, over a five-year period have occurred. **Table 2** summarizes all reported collisions between January 1, 2017 and December 31, 2021.

It should be noted that there were no recorded collisions on the internal segments/intersections of Forager Street or Lusk Street, or on Fallowfield Road between Strandherd and O'Keefe.

Table 2 - Reported Collisions within Vicinity of Proposed Development

LOCATION	# OF REPORTED COLLISIONS
INTERSECTIONS	
Fallowfield Road & Strandherd Drive	52
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	2

Based on the collision history summarized above, the Fallowfield Road & Strandherd Drive is the only intersection where the collisions are significant but as it is not within the study area, no further analysis is required.

Detailed collision records are provided in **Appendix D**.

3.3 Planned Conditions

3.3.1 Transportation Network

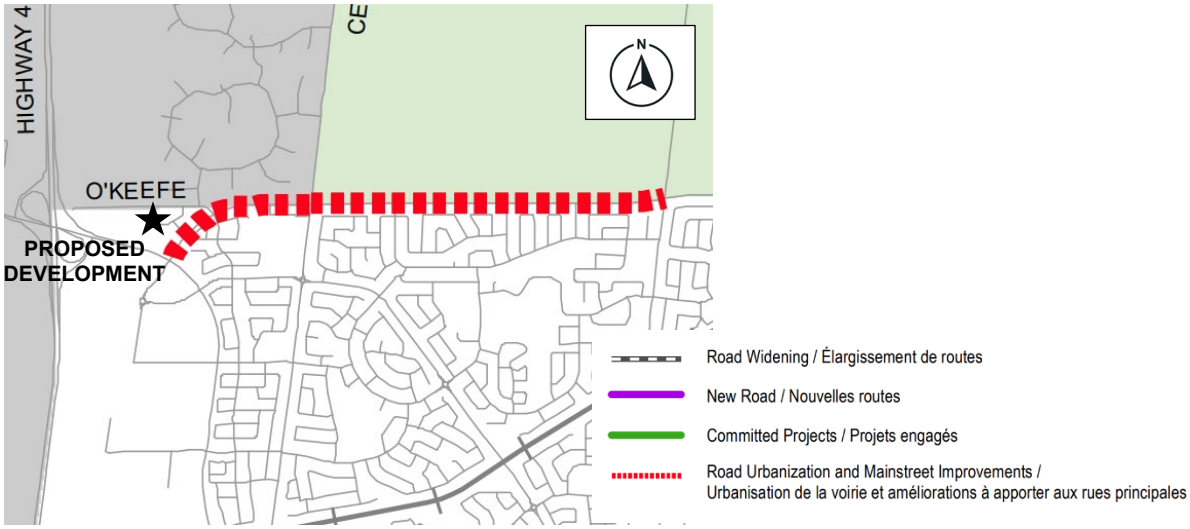
3.3.1.1 Future Road Network Projects

The Transportation Master Plan (TMP) Part 2: Capital Infrastructure Plan outlines future road network modifications in the 2046 Road Network – Priority plan. The following projects of significance were noted within the vicinity of the site:

- **Fallowfield Road** – Planned urbanization on Fallowfield Road from Strandherd Drive to Cedarview Road. As part of the future Fallowfield Road urbanization project, new transportation facilities are proposed to enhance for all modes and support future development within the Barrhaven community.

Figure 3 below illustrates the planned changes to the arterial road network projects in the broader context area, as per the TMP 'Road Network – Priority' plan.

Figure 3 - TMP Part 2 – Road Network - Priority (Map B2)



Source: TMP Part 2 Capital Infrastructure Plan – Map B2 Road Network Priority

3.3.1.2 Future Transit Facilities and Services

The TMP – Capital Infrastructure Plan does not identify any planned transit priority projects within the vicinity of the proposed development as part of the '2046 Transit Network – Priority' or '2046 Transit Network – Needs-Based'.

The Roadway Modification Application (RMA) completed for the Fallowfield & Forager intersection originally included a new southbound bus stop on Fallowfield Road south of O'Keefe Court, however OC Transpo has deferred the installation of this bus stop until after the intersection becomes signalized.

3.3.1.3 Future Cycling and Pedestrian Facilities

A 2.0-metre wide concrete sidewalk is planned as part of a future active transportation improvement for the ongoing subdivision development on the north side of Lusk Street and includes the site's frontage. This sidewalk will connect with a future 3.0-metre wide asphalt

pathway proposed to the west, and provide a direct pedestrian link to the western portion of the 4401 Fallowfield Road Subdivision.

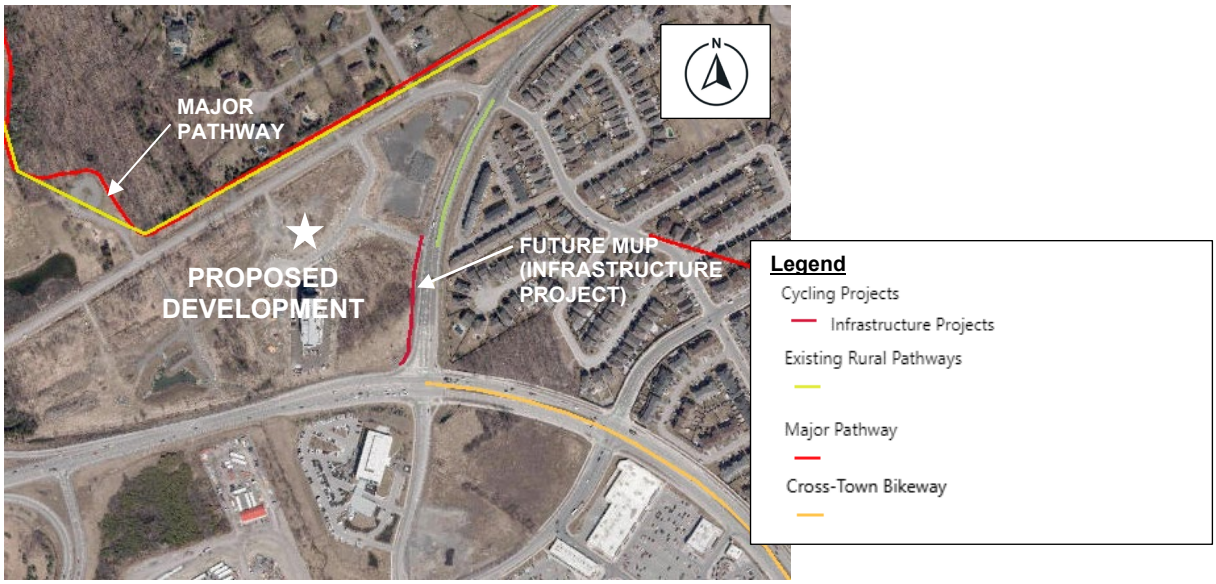
The existing pathway north of O'Keefe Court form part of the Major Pathway network within the vicinity of the site. A multi-use path on the west side of Fallowfield Road was constructed in 2022 and provides connectivity from the site to the Fallowfield/O'Keefe Court intersection where a future signalized intersection and bus stops are planned. The signalization of the Fallowfield & O'Keefe/Cobble Hill intersection will facilitate connectivity to the existing pathway system immediately north of O'Keefe Court.

The 2023 TMP Update (Part 1) Active Transportation Project List includes a multi-use pathway on the west side of Fallowfield Road between Strandherd Drive and Forager Street labelled as the 'Fallowfield Road – Forager Street Pathway' project, as shown in **Figure 4** below. This initiative is identified as a 'Later Phase' project on Map C2 of the 'Cycling Projects within Prioritization' from the TMP Part 2 Capital Infrastructure Plan.

Strandherd Drive is identified as a Cross-town Bikeway in the 2046 TMP and was modified to include grade-separated sidewalks and cycle tracks on both sides of this arterial road as part of an urbanization initiative completed from 2015 to 2024.

Figure 4 below shows the future cycling network in the vicinity of the proposed development.

Figure 4 - 2023 TMP Update (Part 1) Active Transportation Project List



Source: GeoOttawa & Map C2 in TMP Part 2 Capital Infrastructure Plan

3.3.2 Future Adjacent Developments

The City of Ottawa Transportation Impact Assessment (TIA) Guidelines specify that all significant developments proposed within the surrounding area which are likely to occur within the study's horizon year must be identified and taken into consideration in the development of future background traffic projections.

The subject site forms part of the 4401 Fallowfield Road Plan of Subdivision (previously referred to as the Highway 416 Lands development). It is located in the northwest quadrant of the Fallowfield Road and Strandherd Drive intersection that will eventually consist of three hotels and an office park.

All current development applications within the context area of the proposed development have been summarized below in **Table 3** below.

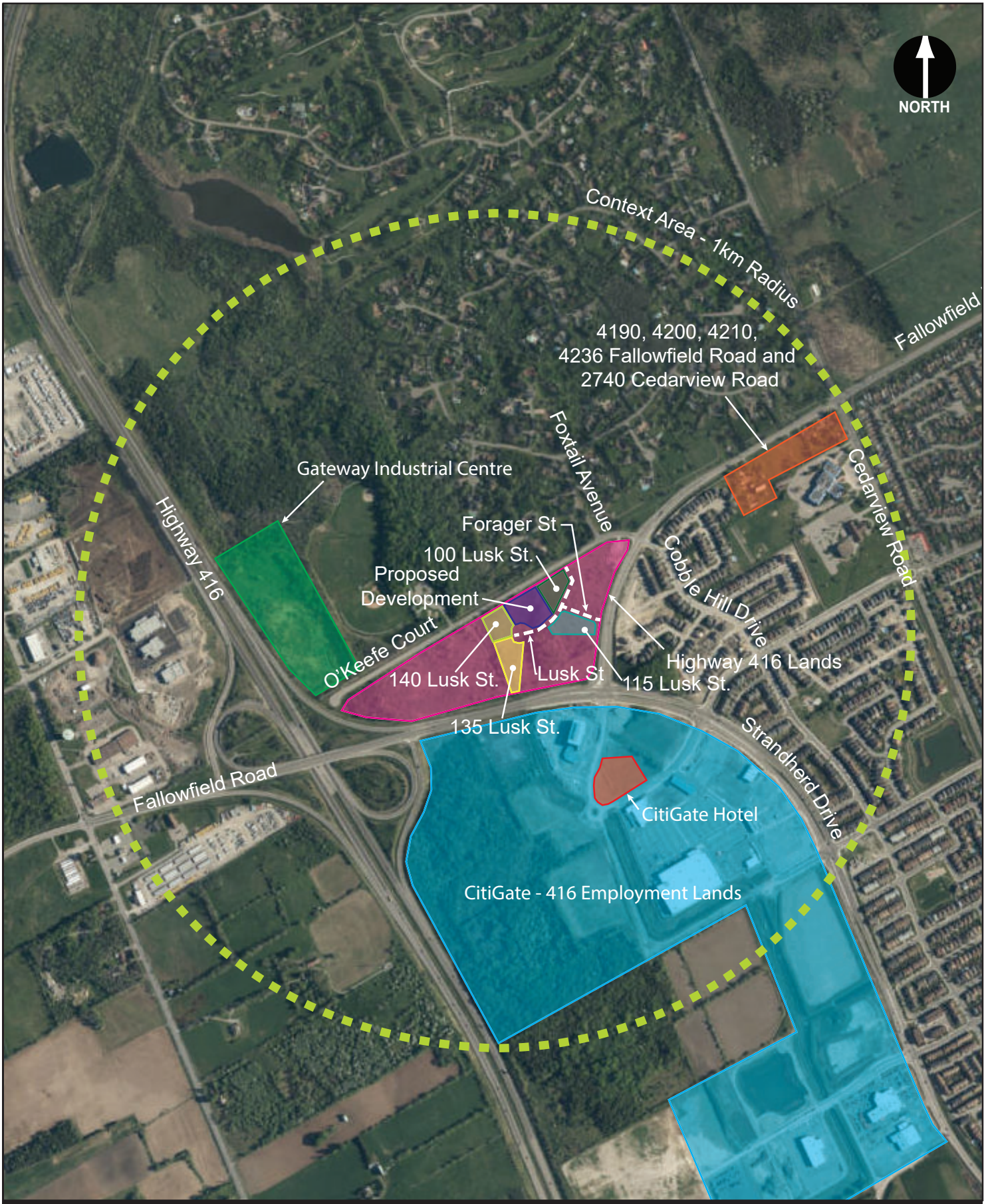
Table 3 - Future Adjacent Developments

DEVELOPMENT	TIA	LAND USE AND SIZE	TARGETED BUILD-OUT
100 Lusk Street [2]	Stantec (2020)	• ~1,895 m^2 General Office	2021[1]
115 Lusk Street [2]	IBI Group (2021)	• ~280 m^2 Restaurant • ~560 m^2 Medical Office	2023[1]
135 Lusk Street [2]	IBI Group (2021)	• 99 Hotel Rooms	2023[1]
140 Lusk Street[2]	Arcadis IBI Group (2022)	• 88 Hotel Rooms	2023[1]
Gateway Industrial Centre (4497 O'Keefe Court)	Delcan (2008)	• ~25,981 m^2 General Light Industrial	Unknown[1]
4190, 4200, 4210, 4236 Fallowfield Road and 2740 Cedarview Road	Novatech (2018)	• 194 Residential Units	2023[1]
CitiGate – 416 Employment Lands	Novatech (2012)	• ~32,526.1m^2 Shopping Centre • 200 Hotel Rooms • Gas Station (8 fuel positions) • ~16.6 ha Business Park • 67.65 ha Office Park • ~10.5 ha New Car Sales	2029
CitiGate Hotel (4433 Strandherd Drive) [3]	Novatech (2019)	• 99 Hotel Rooms	2020[1]

Notes:

1. Occupancy assumed to coincide with full build-out of the proposed development in 2027.
2. Located within the Highway 416 Lands development.
3. Located within the City Gate – 416 Employment Lands development.

The locations of the adjacent developments described above are shown in **Exhibit 3** below.



ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact
Assessment

Exhibit 3:
Adjacent Developments

PROJECT No. 143412

SCALE: 0m 125m 250m

3.3.3 Network Concept Screenline

A network screenline analysis is not expected to be necessary for this development, as the trip generation is anticipated to only slightly exceed the threshold prescribed in the TIA Guidelines of 200 person-trips or more during the weekday peak hours. Detailed trip generation calculations will be provided in the Forecasting section of the report.

3.4 Study Area

The information presented thus far provides a base level of information for the development's context. Based on preliminary estimates of trip generation completed for the TIA Screening Form, the proposed development is expected generate roughly 250 person-trips during the critical weekday afternoon peak hour. Travel demand will be subsequently stratified by mode share and further reduced by the variation in travel routes within the broader study area. As such, the proposed development is expected to contribute marginal downstream impacts to intersections at the periphery of the context area, including Cedarview & Fallowfield.

Strandherd Drive from Fallowfield Road to Maravista Drive was also exempt from the study area, as this segment of road was reconstructed in 2015 following the City's Complete Streets design philosophy to accommodate long-term multi-modal travel demands beyond the TMP's ultimate planning horizon of 2031. Consideration was given to the proposed development travel demands as part of the Highway 416 Lands Community Transportation Study (CTS), published In 2015.

With respect to the exemptions discussed above, this TIA will focus on site-specific impacts, integration with its boundary streets, including a functional review of the site access geometry and intersection control, on-site drive aisle requirements to accommodate proposed design vehicles and a review of the site's parking and loading requirements.

Consistent with numerous other TIAs conducted to support development applications within this industrial subdivision, a condensed study area is proposed for this TIA, which includes the following intersections:

- Fallowfield Road & O'Keefe Court/Cobble Hill Drive
- O'Keefe Court & Lusk Street
- Fallowfield Road & Forager Street

An intersection-based Multi-Modal Level of Service (MMLOS) analysis is only required for signalized intersections. Based on analysis conducted for previous TIAs within the 4401 Fallowfield Road subdivision, it is expected that the Fallowfield & O'Keefe/Cobble Hill intersection will require traffic signals operationally under Future Background conditions and therefore MMLOS will be limited to this intersection once signalization is required to achieve acceptable operating conditions. Segment-based MMLOS analysis will also be provided on Fallowfield Road between Forager Street and O'Keefe Court, as well as on the boundary streets, O'Keefe Court and Lusk Street.

3.5 Time Periods

Based on a preliminary review of trip generation rates associated with the proposed land uses, the peak weekly traffic generation is expected to occur during the weekday afternoon peak period. As such, consistent with other TIAs conducted for developments within the 4401 Fallowfield Road business park, the weekday morning and afternoon peak hours will constitute the critical analysis periods for this study.

3.6 Existing Lane Configurations and Traffic Volumes

3.6.1 Existing Lane Configurations

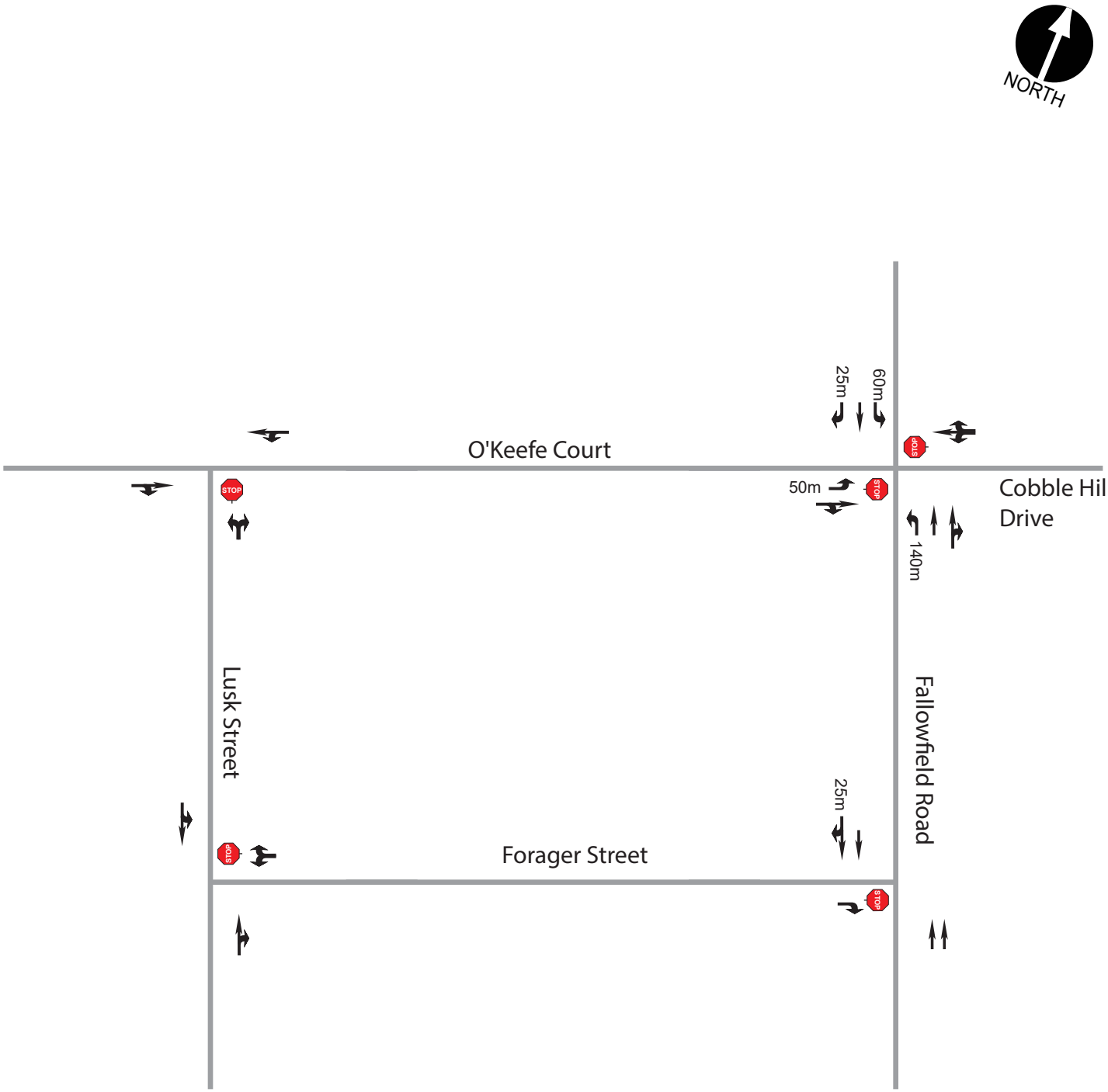
The existing lane configurations and traffic controls for the study area are shown in **Exhibit 4** below.

3.6.2 Existing Traffic Volumes

Weekday morning and afternoon peak hour turning movement counts were conducted on Tuesday, May 23, 2023 at the following intersection(s):

- Fallowfield Road and O'Keefe Court/Cobble Hill Drive

Weekday peak hour vehicular, pedestrian and cyclist traffic volumes representative of Existing conditions are shown in **Exhibit 5** below. Traffic count data is provided in **Appendix E**.



Legend

- STOP — Stop Sign
- Lane Configurations
- xxxm — Storage Lengths

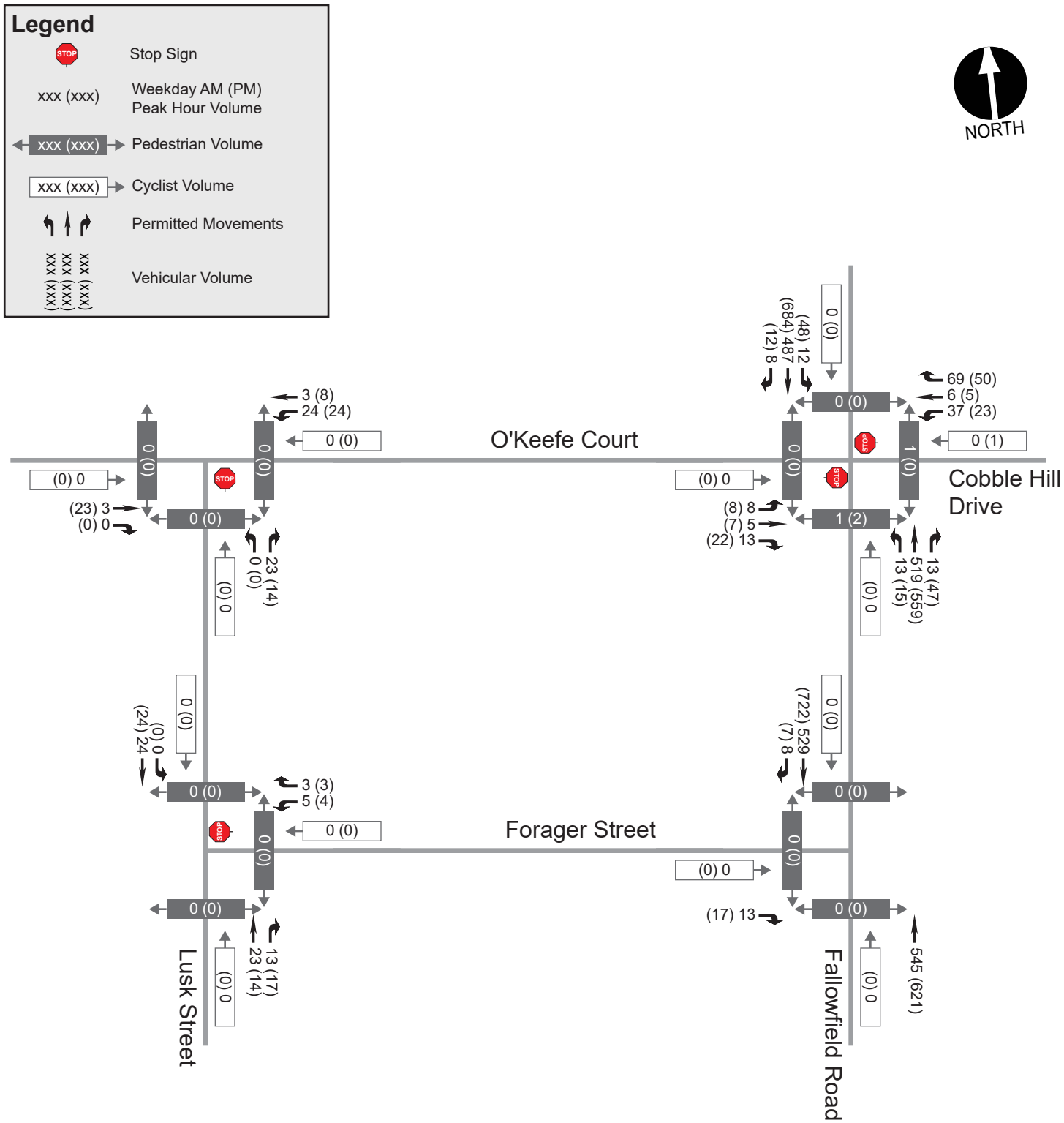
ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 4:
Existing Lane Configurations & Intersection Controls

PROJECT No. 143412

SCALE: N.T.S.



ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 5:
Existing Traffic

PROJECT No. 143412

SCALE: N.T.S.

3.7 Study Horizon Year

It is expected that the proposed development will be constructed and fully occupied in a single phase by the end of 2027. The horizon year for this study is therefore 2032.

3.8 Exemptions Review

The TIA Guidelines provide exemption considerations for elements of the Design Review and Network Impact components. **Table 4** summarizes the TIA modules that are not applicable to this study.

Table 4 - Exemptions Review

TIA MODULE	ELEMENT	EXEMPTION CONISDERATIONS	REQUIRED
DESIGN REVIEW COMPONENT			
4.1 Development Design	4.1.2 Circulation and Access	• Only required for site plans	✓
	4.1.3 New Street Networks	• Only required for plans of subdivision	✗
4.2 Parking	4.2.1 Parking Supply	• Only required for site plans	✓
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	✗
NETWORK IMPACT COMPONENT			
4.5 Transportation Demand Management	All Elements	• Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	✓
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	• Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	✗
4.8 Network Concept	n/a	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	✗

4 Forecasting

4.1 Demand Rationalization

The purpose of this section is to rationalize future travel demands within the study area to account for potential capacity limitations in the transportation network and its ability to effectively accommodate the additional demand generated by a new development.

4.1.1 Description of Capacity Issues

Table 5 below summarizes the existing traffic operational performance at the study area intersections based on Existing Traffic volumes. The intersection capacity analysis is based on locally-specific parameters as described in the TIA Guidelines. As prescribed in the TIA Guidelines, a peak hour factor (PHF) of 0.90 has been considered in the analysis of existing conditions. The Synchro output files have been provided in **Appendix F**.

Table 5 - Intersection Capacity Analysis: Existing Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	Unsignalized	D (27.3s)	WBL (27.3s)	**F (51.9s)**	**WBL (51.9s)**
Lusk Street & O'Keefe Court	Unsignalized	A (8.4s)	NBRL (8.4s)	A (8.5s)	NBRL (8.5s)
Fallowfield Road & Forager Street	Unsignalized	B (10.2s)	EBR (10.2s)	B (11.2s)	EBR (11.2s)

As indicated above, the study area intersections are all operating at an acceptable Level of Service (i.e. LOS 'D' or better) with the exception of the Fallowfield & O'Keefe/Cobble Hill. This intersection is currently operating at LOS 'F' during the weekday afternoon peak period due to high conflicting north-south volumes on with the westbound left-turn movement. As the proposed development will not contribute to volumes at the westbound left-turn movement, no mitigation measures are proposed for existing conditions.

The intersection capacity analysis presented in Section 5.9 identifies potential capacity constraints (i.e. LOS 'F') under both weekday morning and afternoon peak hours by 2027 under Background and Total Traffic conditions, if its existing two-way stop-controlled configuration is retained. With traffic signals in place, the intersection capacity would be significantly improved to well within acceptable standards (i.e. LOS 'D' or better). If traffic signals are not implemented, long delays are expected at the Fallowfield & O'Keefe intersection with or without the inclusion of site-generated traffic.

4.1.2 Adjustment to Development Generated Demands

The proposed development is expected to contribute to demand on the adjacent road network with up to 133 additional two-way vehicle-trips during the critical weekday afternoon peak hour and therefore is unlikely to exacerbate any potential traffic operational issues, particularly because the majority of site-generated traffic is expected to use non-critical movements and therefore will

not contribute significantly to the overall intersection delay. The impacts on the Fallowfield & O'Keefe intersection are lessened by the completed Fallowfield & Forager intersection which provides a more direct connection to the arterial road network for right-turning traffic.

4.1.3 Adjustment to Background Network Demands

As prescribed in the TIA Guidelines, the effects of peak-hour spreading have been considered in in future analysis years of this study. It is anticipated that as traffic volumes continue to gradually increase, vehicular trips will have a natural tendency to be more evenly distributed across the peak hour (PHF = 1.0) and eventually increase demands in the shoulders of the peak as well. The impacts of peak hour spreading are accounted for in the Synchro modelling exercise, completed as part of the Analysis component of this study.

4.2 Development Generated Traffic

4.2.1 Trip Generation Methodology

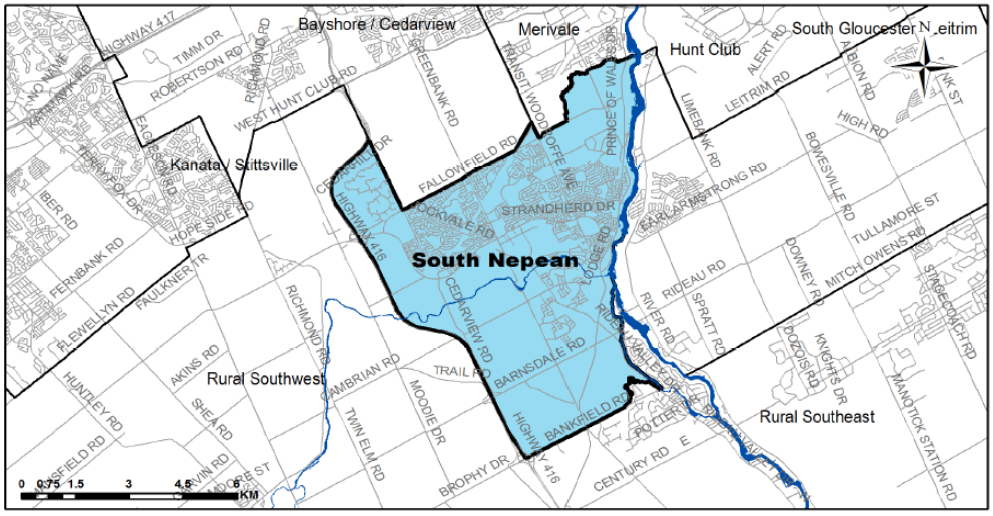
Peak hour site-generated traffic volumes were developed using the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). The TIA Guidelines indicate that vehicle-trip generation rates from the ITE Trip Generation Manual should be converted to person-trips through the application of a 1.28 vehicle-to-person-trip conversion factor.

Following the application of the vehicle-to-person-trip conversion factor, the person-trips were then subdivided based on representative mode share percentages applicable to the study area to determine the number of auto driver, auto passenger, transit, pedestrian, cycling and 'other' trip types.

Mode share targets were developed based on the local mode share distributions from the South Nepean Traffic Assessment Zone (TAZ) in the 2011 O-D Survey and adjusted to account for Condition 6b of the Conditions of Approval of the Draft Plan of Subdivision of 4401 Fallowfield Road. Condition 6b indicates that all TIAs prepared for Site Plan Applications within the 4401 Fallowfield Road subdivision must assume a maximum non-auto mode share (transit, walking, cycling and 'other') of 15%. Furthermore, Condition 6a indicates that the cumulative vehicle-trip generation of all sites within the 4401 Fallowfield Road subdivision shall not exceed 739 vehicles per hour during the weekday morning and afternoon peak periods.

The extents of the South Nepean TAZ are illustrated in **Figure 5** below.

Figure 5 – South Nepean TAZ



Source: 2011 O-D Survey

4.2.2 Trip Generation Results

4.2.2.1 Base Vehicle Trip Generation

Weekday peak hour vehicular traffic volumes associated with the proposed development were determined using appropriate trip generation rates from the ITE Trip Generation Manual.

The vehicular trip generation results for the proposed development have been summarized in **Table 6** below.

Table 6 - Base Vehicular Trip Generation Results

LAND USE	SIZE (GFA)	PERIOD	GENERATED TRIPS (VPH)		
			IN	OUT	TOTAL
720 – Medical Office building	~3,124 m^2	AM	36	10	46
		PM	17	41	58
932 – High-Turnover Sit-Down Restaurant	~193 m^2	AM	11	8	19
		PM	11	7	18
710 – General Office Building	~1481 m^2	AM	21	3	24
		PM	4	19	23
880 – Pharmacy without Drive-through	~185 m^2	AM	4	2	6
		PM	8	9	17
565 – Daycare Centre	~374 m^2	AM	23	21	44
		PM	21	23	45
Total		**AM**	**95**	**44**	**139**
		PM	**61**	**99**	**160**

Notes: vph = vehicles per hour

4.2.2.2 Person Trip Generation

The TIA Guidelines indicate that a 1.28 vehicle-to-person-trip conversion rate should be utilized to convert the base vehicular trip generation results into person trips.

The resulting number of site-generated person-trips is summarized in **Table 7** below.

Table 7 - Person-Trip Generation

LAND USE	PERIOD	PERSON TRIPS (PPH)		
		IN	OUT	TOTAL
Medical Office Building	AM	46	13	59
	PM	22	52	74
Restaurant	AM	14	11	25
	PM	14	10	24
General Office Building	AM	27	4	31
	PM	5	24	29

Pharmacy	AM	5	3	8
	PM	10	12	22
Daycare	AM	29	27	56
	PM	27	29	56
Total	**AM**	**122**	**56**	**178**
	PM	**78**	**127**	**205**

Notes: pph = persons per hour

4.2.2.3 Mode Share Proportions

The 2011 TRANS Origin-Destination (O-D) Survey provides approximations of the existing modal share within the South Nepean Traffic Assessment Zone (TAZ). Relevant extracts from the 2011 O-D Survey are provided in **Appendix G**.

Of the available data, a weighted average of the weekday AM 'To', AM 'Within', PM 'From' and PM 'Within' mode share distributions were determined to be the most appropriate to develop a baseline mode share for the proposed development. These distributions were selected to best represent the travel characteristics of employees. The South Nepean TAZ also includes Barrhaven which provides a wide range of amenities and housing options for prospective employees and customers. As such, the internal (i.e. 'Within District') mode share proportions were also considered in the development of the modal targets for the proposed development.

It is acknowledged, however, that the subject development is located on the periphery of an auto-oriented suburb and therefore, it was determined that the mode share targets specific to this development may deviate from the average mode share experienced in the South Nepean TAZ. The following adjustments were made to the mode share distributions to better represent the travel characteristics of the proposed development:

- The vast majority of 'Other' trips were assumed to occur by taxi/rideshare services and therefore in order to quantify their vehicular impacts, these trips were reallocated to 'Auto Driver'.

Given the low probability of site-generated trips occurring by non-auto travel modes (transit, cycling, walking and other) within the horizon year of this study, the mode share targets of all non-auto travel modes were proportionally adjusted to yield a total non-auto mode share of 15% in accordance with the Conditions of Approval for 4401 Fallowfield Road. The difference in mode share was reallocated proportionally to the auto driver and auto passenger modes.

Table 8 below summarizes the 2011 O-D Survey mode shares, as well as the mode share targets.

Table 8 - 2011 O-D Survey Mode Shares and Proposed Mode Share Targets

TRAVEL MODE	2011 O-D SURVEY MODE SHARE				BLENDED MODE SHARE	BLENDED MODE SHARE[1]	MODE SHARE TARGETS
	AM To District	AM Within District	PM From District	PM Within District			
Auto Driver	71%	34%	72%	46%	49%	62%	65%
Auto Passenger	13%	19%	21%	21%	19%	19%	20%
Total Auto Mode Share	**84%**	**53%**	**93%**	**67%**	**68%**	**81%**	**85%**

Transit	5%	4%	4%	4%	4%	4%	3%
Cycling	1%	2%	1%	1%	1%	1%	1%
Walking	0%	17%	0%	20%	14%	14%	11%
Other	10%	24%	2%	9%	13%	0%	0%
Total Non-Auto Mode Share	**16%**	**47%**	**7%**	**34%**	**32%**	**19%**	**15%**

Notes:

[1] Adjustments to reallocate 'Other' mode share to 'Auto Driver'

4.2.2.4 Trip Reduction Factors

Deduction of Existing Development Trips

Not Applicable: The proposed development lands are currently undeveloped, and do not generate any traffic volumes.

Pass-by Traffic

Based on survey data collected for the *ITE Trip Generation Handbook (11th Edition),* the High-Turnover (Sit-Down) Restaurant land use was shown to generate an average of 43% pass-by trips, while the pharmacy has an average pass-by rate of about 53%. This study conservatively did not apply any pass-by reduction factors, as the vehicle trip generation associated with these land uses is anticipated to be nominal during the weekday perk hours and, as a consequence, the overall impact on the adjacent road network is expected to be minimal.

Synergy/ Internalization

The proposed development will not generate internal person-trips of significance between the proposed land uses. Some non-auto trips are likely to occur to/from other sites within the 4401 Fallowfield Road subdivision, such as the adjacent Hampton Inn and Suites.

4.2.2.5 Trip Generation by Mode

The mode share targets summarized previously in **Table 8** were applied to the number of development-generated person-trips to establish the expected number of trips per travel mode, as shown in **Table 9** below.

Table 9 - Peak Hour Person Trips by Mode

MODE	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Auto Driver	80	37	117	51	82	133
Auto Passenger	24	11	35	16	25	41
Transit	4	2	6	2	4	6
Cycling	1	1	2	1	1	2
Walking	13	6	19	9	14	23
Other	0	0	0	0	0	0

Total	**122**	**57**	**179**	**79**	**126**	**205**

4.2.2.6 Cumulative 4401 Fallowfield Road Trip Generation

Condition 6A of the Conditions of Approval of the Draft Plan of Subdivision of 4401 Fallowfield Road indicates that the total vehicle-trip generation of the subdivision shall not exceed 739 vehicle-trips per hour during the weekday morning and afternoon peak hours. **Table 10** below summarizes the total and cumulative number of vehicle-trips generated during the weekday morning and afternoon peak hours by all sub-developments within 4401 Fallowfield Road subdivision which have been approved or are currently undergoing the City's Site Plan Control application process.

Table 10 - Cumulative 4401 Fallowfield Road Trip Generation

SUB-DEVELOPMENT	TOTAL AM (PM) VEHICLE TRIPS	CUMULATIVE AM (PM) VEHICLE TRIPS
100 Lusk Street	23 (22)	23 (22)
115 Lusk Street	13 (32)	36 (54)
125 Lusk Street	56 (64)	92 (118)
135 Lusk Street	42 (53)	134 (171)
140 Lusk Street	36 (45)	170 (216)
120 Lusk Street	117 (125)	287 (349)
Total from Current Development Applications		**287 (349)**
Total Allowable Vehicle-Trip Generation		**739 (739)**
Percentage of Maximum Trips Permitted		**39% (47%)**

As indicated in **Table 10** above, the addition of the proposed development will not exceed the maximum permissible vehicular generation of the 4401 Fallowfield Road subdivision.

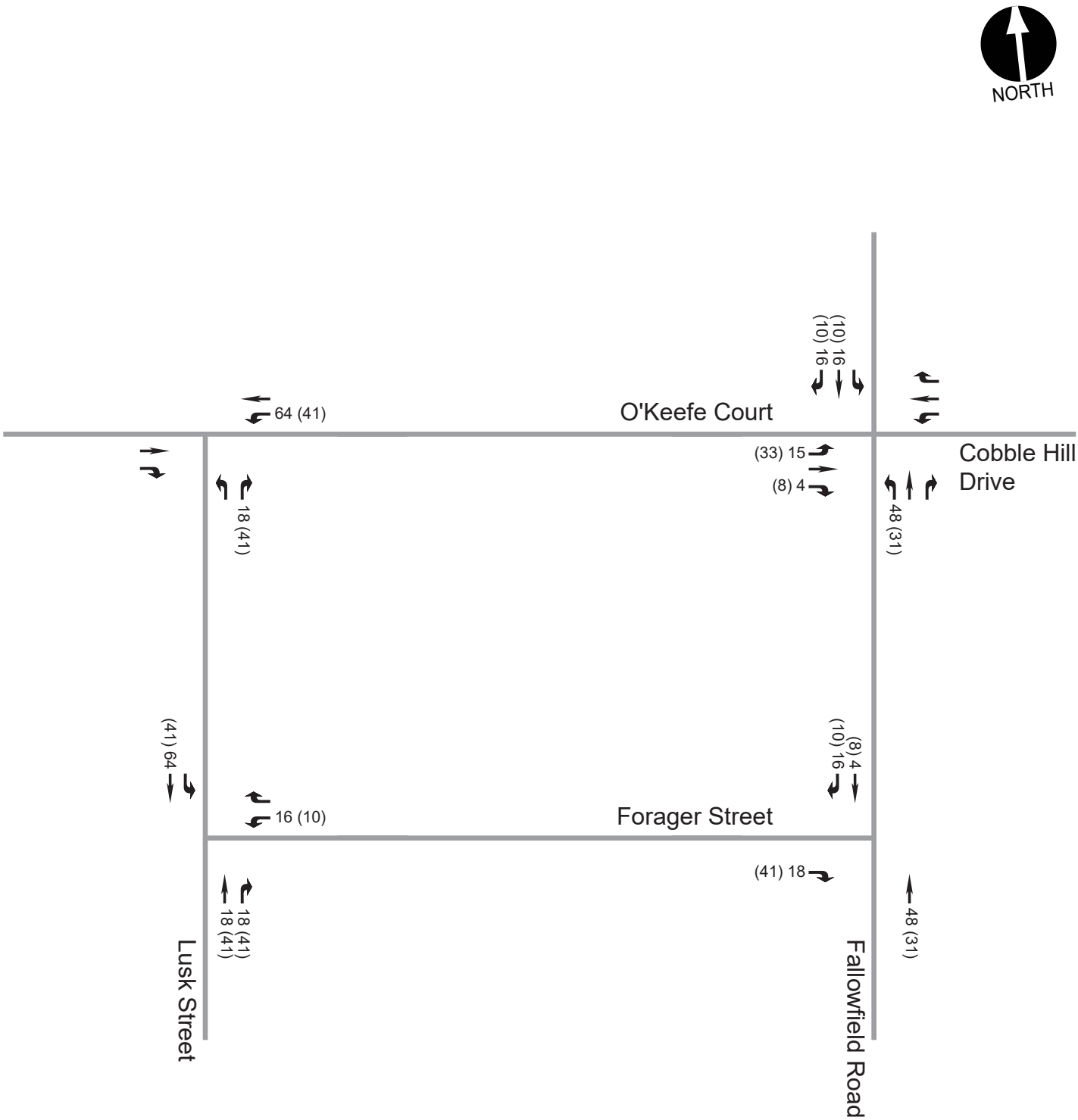
The developments listed above represent approximately 42% of the total developable area within the 4401 Fallowfield Road subdivision. Future developments as part of Phase 2 of the 4401 Fallowfield Road subdivision are anticipated to consist of land uses that will generate less trips during the weekday peak hour relative to the property parcel size and include uses such as auto dealerships.

4.2.3 Trip Distribution and Assignment

As the proposed development is expected to primarily draw traffic from Highway 416 and residential areas of Barrhaven, site-generated traffic has been distributed to the adjacent road network as follows:

- 40% to/from the north via Fallowfield Road
- 60% to/from the south via Fallowfield Road

Utilizing the estimated number of new auto trips and applying the above distribution, future site-generated traffic volumes are illustrated for each of the study area intersections in **Exhibit 6** below.



ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 6:
Site-Generated Traffic

PROJECT No. 143412

SCALE: N.T.S.

4.3 Background Network Traffic

4.3.1 Changes to the Background Transportation Network

To properly assess future traffic conditions, planned modifications to the transportation network that may impact travel patterns or demand within the study area must be considered. The TIA Scoping reviewed the anticipated changes to the study area transportation network based on the City of Ottawa Transportation Master Plan (TMP). Based on a review of these policy documents, it was determined that there are no major road, pedestrian or cycling network modifications planned within the study area prior to the 2032 TIA study horizon year.

It is worth noting that the intersection of Fallowfield & O'Keefe/Cobble Hill is being monitored by City staff for traffic signal warrants. Also, the intersection of Fallowfield & Forager was upgraded in 2022 which allows for an alternative means of accessing the arterial road network with right-in/right-out only movements permitted.

4.3.2 General Background Growth Rates

The background growth rate is intended to represent increases in regional travel demand from outside the study area that will contribute to traffic volumes on the adjacent road network. Consistent with the adjacent TIAs conducted for adjacent developments within the 4401 Fallowfield Road subdivision including 135 Lusk Street (IBI, 2021) and the 140 Lusk Street (Arcadis IBI, 2022), a 2.0% rate of linear growth per annum is proposed within the study area for the calculation of future background traffic.

The background growth rate has only been applied to the through movements on Fallowfield Road as traffic generation relating to all known future adjacent developments has been explicitly accounted for in the analysis.

4.3.3 Other Area Development

All current adjacent development applications within the study area were previously identified in **Table 3** above, all of which were accounted for explicitly in the assembly of future background volume projections. These developments represent specific areas of growth within the study area and are therefore considered in addition to the general background growth rate discussed previously. **Table 11** below summarizes the vehicle trip generation of all current adjacent background development applications.

Table 11 - Adjacent Development Vehicle Trip Generation

DEVELOPMENT	TIA	VEHICLE TRIP GENERATION			
		AM		PM	
		IN	OUT	IN	OUT
100 Lusk Street	Stantec (2020)	20	3	3	19
115 Lusk Street	IBI (2021)	8	5	17	15
135 Lusk Street	IBI (2021)	25	17	27	26
140 Lusk Street	Arcadis IBI (2022)	20	16	23	22
Gateway Industrial Centre (4497 O'Keefe Court)	Delcan (2008)	20	97	94	46
4190, 4200, 4210, 4236 Fallowfield Road and 2740 Cedarview Road	Novatech (2018)	108	33	131	76
CitiGate – 416 Employment Lands	Novatech (2012)	**Interim (2019)**			
		741	216	664	1,015
		Ultimate (2029)			
		3,494	635	1,128	3,316
CitiGate Hotel (4433 Strandherd Drive)	Novatech (2019)	29	20	27	26

The CitiGate – 416 Employment Lands is a large multi-phase development which is currently under construction and is expected to be fully built out by 2029. The projected traffic volumes generated by this development at the 2027 analysis year were linearly interpolated and considered the development status at the time of the recorded traffic counts utilized in this study.

It was assumed that the Gateway Industrial Centre (4497 O'Keefe Court) development will be fully built out by the 2027 analysis year.

4.4 Traffic Volume Summary

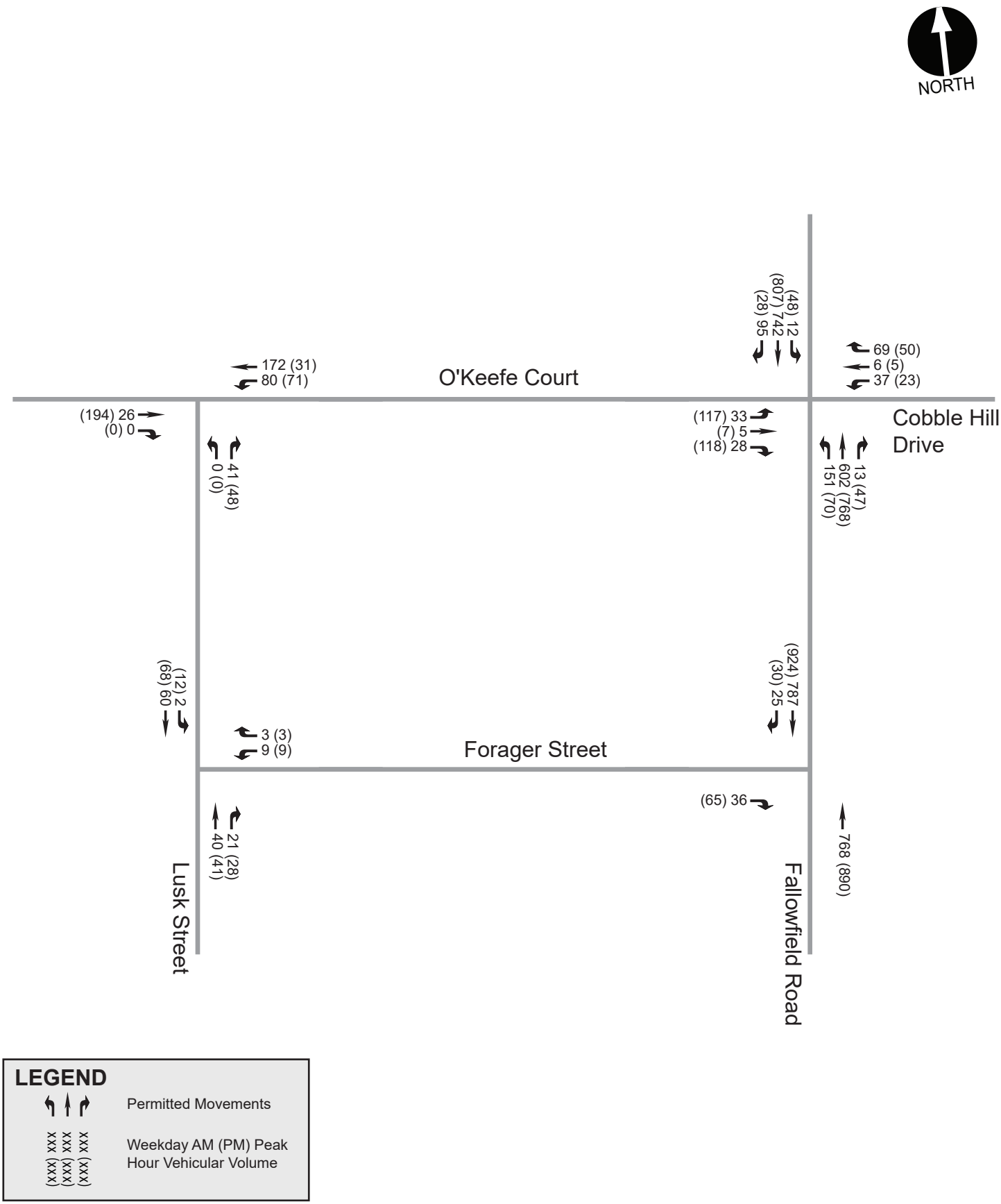
4.4.1 Future Background Traffic Volumes

Future background traffic volumes projections have been established by combining the adjacent development traffic and background traffic derived through the application of a growth rate, as discussed previously. **Exhibit 7** and **Exhibit 8** present the future background traffic volumes anticipated for the 2027 build-out year, as well as the 2032 study horizon, respectively.

4.4.2 Future Total Traffic Volumes

Future total volumes have been derived by combining the site-generated traffic from **Exhibit 6** with the future background volumes from **Exhibit 7** and **Exhibit 8**.

Exhibit 9 and **Exhibit 10** present the future total traffic volumes anticipated for 2027 and 2032 analysis years, respectively.



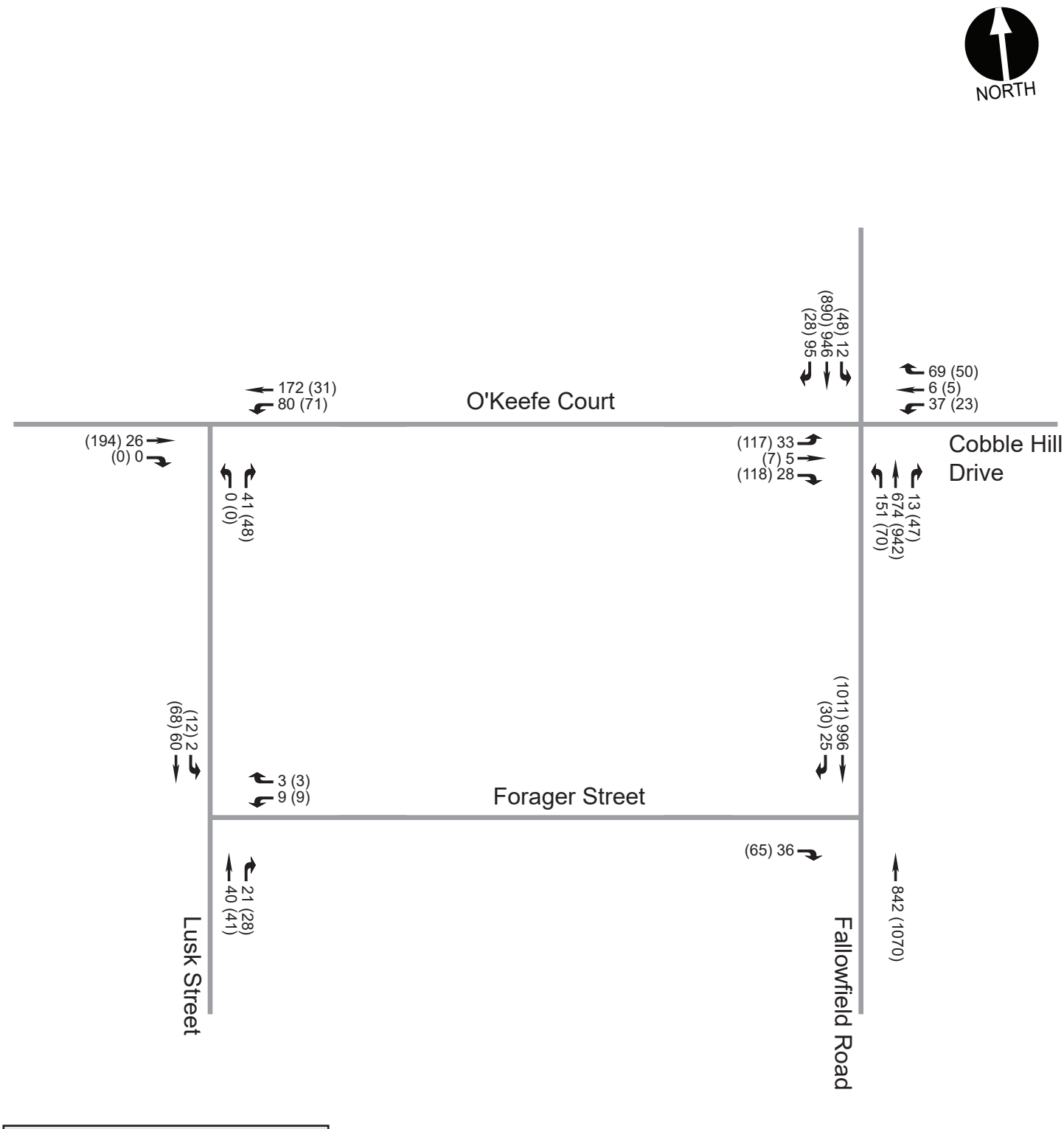
ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 7:
Future (2027)
Background Traffic

PROJECT No. 143412

SCALE: N.T.S.



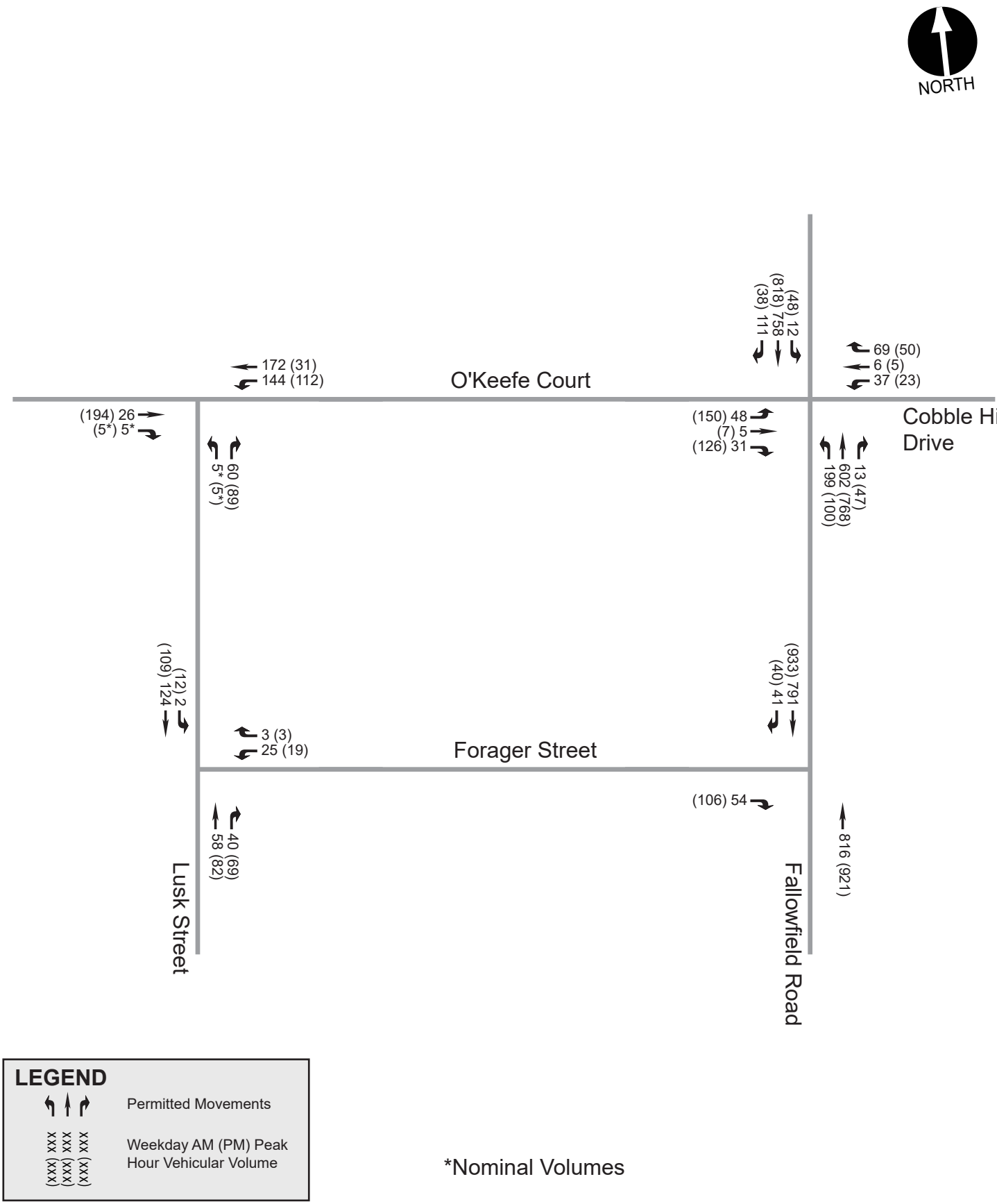
ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 8:
Future (2032)
Background Traffic

PROJECT No. 143412

SCALE: N.T.S.

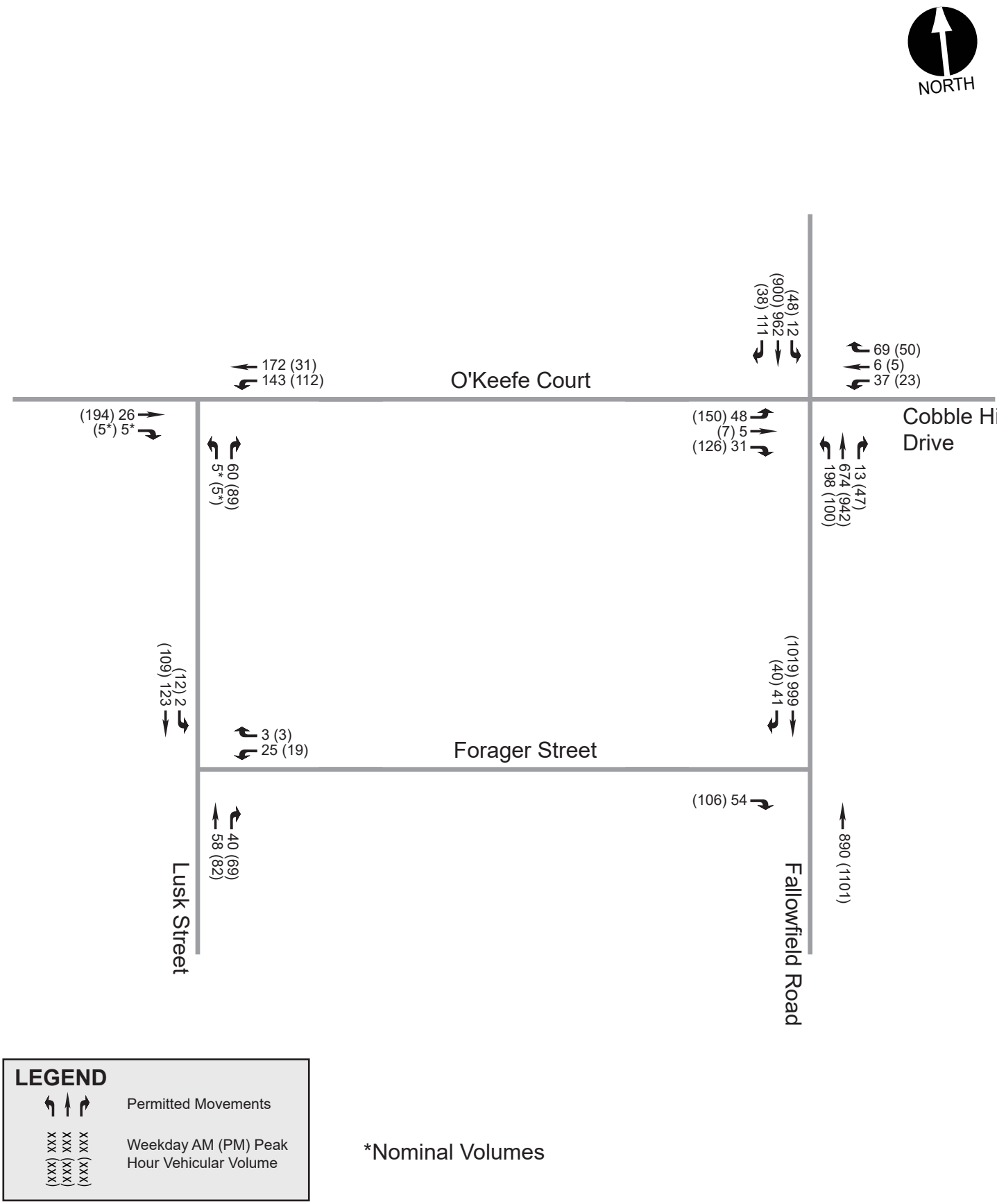


ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 9:
Future (2027)
Total Traffic

PROJECT No. 143412
SCALE: N.T.S.



ARCADIS
IBI GROUP

120 Lusk Street
Transportation Impact Assessment

Exhibit 10:
Future (2032)
Total Traffic

PROJECT No. 143412
SCALE: N.T.S.

5 Analysis

5.1 Development Design

5.1.1 Design for Sustainable Modes

The proposed development is located an approximate 630-metre walking distance from the existing bus stops serving Routes 70, 110 and 173 near the Citigate Drive and CrossKeys Place roundabout. The facilities on Fallowfield Road are limited to paved shoulders which provide poor level of service for pedestrians. The RMA for the Fallowfield Road & Forager Street intersection originally included a new southbound bus stop on Fallowfield Road south of O'Keefe Court, which would ultimately reduce the walking distance to transit to approximately 350m, however a bus stop at this location has now been deferred until after the signalization of this intersection.

A direct pedestrian connection is provided from Lusk Street to the proposed building's primary pedestrian entrance, complete with TWSIs, curb depressions and 'ladder crossings' to support a more comfortable and safe experience for vulnerable road users. A 1.8-metre wide concrete sidewalk is proposed around the perimeter of the building to prioritize access for individuals with a range of mobility needs.

The Transportation Demand Management (TDM) Supportive Development Design and Infrastructure Checklist was completed and is provided in **Appendix H**. This checklist includes the following measures which are being considered in association with the proposed development to offset the vehicular impact on the adjacent road network:

- Providing a designated area for carpool drivers (plus taxi and ride-hailing services) to drop off or pick up passengers at the main entrance without blocking the proposed fire route. To this end, select parking stalls within close proximity to the main building entrance will be reserved for pick-up and drop-off activities to help reduce single vehicle occupancy trips to/from the site.
- Secured and anchored bicycle parking spaces provided in a highly visible and lighted area with curb depressions to facilitate access to the internal drive aisle.

These measures are similar to those provided by adjacent developments.

5.1.2 Circulation and Access

The internal drive aisle generally provides at least 6.7 metres of clear width throughout the site, as indicated on the site plan presented in **Exhibit 2** and is therefore in compliance with the Zoning By-law (2008-250). Drive aisle widths adjacent to compact vehicle parking spaces are also proposed at 6.7-metres, which is expected to sufficiently accommodate maneuverability associated with small passenger vehicles. In accordance with the by-law, the proportion of compact parking stall will not exceed 50% of the total on-site supply and will be clearly signed for 'small cars only'.

Vehicle turning templates for a fire truck, waste collection vehicle, delivery truck and Light Single Unit (LSU) which are expected to be the largest vehicles requiring access to the site, are presented in **Appendix I**.

5.1.3 New Street Networks

Not Applicable: The New Street Networks element is exempt from this TIA, as defined in the study scope. This element is not required for Site Plan Control applications.

5.2 Parking

5.2.1 Parking Supply

Based on the size of the proposed development, a minimum of 124 vehicle parking spaces are required to meet the Zoning Bylaw requirements to support the various uses proposed on-site. The proposed development indicates that 125 vehicle parking spaces will be provided, including 5 accessible parking spaces. There are also 2 loading spaces with dimensions, in accordance with the Zoning Bylaw requirements. As such, the parking supply is within the permissible range.

The Zoning By-law also requires a minimum number of bicycle parking spaces to support the proposed development. A total of 11 bicycle parking spaces will be provided, meeting the 10 required parking spaces. As indicated on the site plan presented in **Exhibit 2**, these bike parking stalls will be provided in the northeast and southeast corners of the proposed multi-use building with sidewalks leading to the primary entrance and therefore will provide easy access for visitors or staff.

5.3 Boundary Streets

5.3.1 Mobility

There are three existing boundary streets adjacent to or within close proximity to the proposed development: O'Keefe Court, Lusk Street and Fallowfield Road. As discussed in Section 3.4, Segment-based Multi-Modal Level of Service (MMLOS) results for each of these road segments are provided in **Table 12** below.

Details of the MMLOS analysis are provided in **Appendix J**. The policy area used to derive the MMLOS targets was 'Employment Area'.

Table 12 – Segment-based MMLOS Results

LOCATION	LEVEL OF SERVICE BY MODE			
	PEDESTRIAN (PLOS)	BICYCLE (BLOS)	TRANSIT (TLOS)	TRUCK (TkLOS)
EXISTING & FUTURE CONDITIONS				
O'Keefe – Fallowfield to terminus	**F** (Target: C)	D (Target: N/A)	N/A[1]	B (Target: E)
Lusk (south side) – O'Keefe to terminus	A (Target: C)	D (Target: N/A)	N/A[1]	B (Target: E)
Lusk (north side) – O'Keefe to terminus	**F** (Target: C)	D (Target: N/A)	N/A[1]	B (Target: E)
Fallowfield – Forager to O'Keefe	**D** (Target: C)	A (Target: C)	D (Target: N/A[2])	B (Target: B)

Notes:

[1] Transit LOS (TLOS) is not required for streets that are not transit routes.

[2] TLOS targets are not provided for routes that are not identified as transit priority routes or rapid transit corridors.

All modes presented in **Table 12** meet their respective targets, with the exception of the PLOS for segments of O'Keefe Court and Fallowfield Road.

On O'Keefe Court, operating speed would have to be reduced to 50km/h or less and a 1.5m concrete sidewalk would be required with at least a 0.5m boulevard width to meet the PLOS target. At this time, there is no indication that O'Keefe Court will be urbanized and therefore this deficiency

cannot be addressed. A multi-use path located along the north side of the roadway, however, provides a safe off-road link to the broader pedestrian and cycling network.

The MMLOS results are shown separately for the north and south sides of Lusk Street, given the significant difference in the PLOS scores. Ultimately, the north side of Lusk Street will also feature a concrete sidewalk on the north side as part of the overall plan of subdivision which should result in a high PLOS of 'A' similar to the south side, however, until such time, the PLOS score will remain at 'F'. It is important to note, however, that Lusk Street is a local street and therefore City policies do not require sidewalks on both sides of these lower-order streets.

Fallowfield Road operates slightly above its target of 'C', with a PLOS of 'D'. Operating speeds would have to be reduced to less than 60km/h to achieve this PLOS score.

5.3.2 Road Safety

A summary of all reported collisions within the study area over the past 5 years was presented in the Scoping section of this TIA. The City requires a safety review if at least six collisions for any one movement or of a discernible pattern, over a five-year period have occurred. Based on the review of re-occurring events identified in the Scoping section of this report, none of the study area roadway segments or intersections require further analysis.

5.4 Access Intersections

5.4.1 Location and Design of Access

The proposed development will provide a new full-movement access on Lusk Street approximately 75m west of the existing cul-de-sac. The new vehicular connection is in conformance with the City of Ottawa Private Approach By-law 2003-447, with particular confirmation of the following items:

- Width: A private approach should have a minimum width of 2.4m and a maximum width of 9.0m.
    - The proposed site access driveway will have a width of approximately 9.8 metres at the property line, however the private approach narrows significantly to about 7.2m immediately to the north and therefore this configuration should be considered acceptable with respect to this item in the Private Approach Bylaw.
- Quantity and Spacing of Private Approaches: For sites with frontages between 46 and 150 metres, one (1) two-way private approach and two (2) one-way private approaches or two (2) two-way private approaches are permitted. Any two private approaches must be separated by at least 9.0m and can be reduced to 2.0m in the case of two one-way driveways. On lots that abut more than one roadway, these provisions apply to each frontage separately.
    - The frontage on Lusk Street is approximately 85m and therefore the single proposed two-way private approach is compliant with the by-law. ✓
- Distance from Property Line: Private approaches must be at least 3.0m from the abutting property line, however this requirement can be reduced to 0.3m provided that the access is a safe distance from the access serving the adjacent property, sight lines are adequate and that it does not create a traffic hazard.
    - The proposed site access driveway is located approximately 4.5m and 72m from the eastern and western property boundaries, respectively. ✓

The Transportation Association of Canada's (TAC) Geometric Design Guide for Canadian Roads (June 2017) does not suggest a minimum clear throat length for a site access driveway proposed on a local road. The clear throat length is provided to ensure that any queues that form due to on-

site circulation blockages do not spillback onto collector or higher-order roads. Given the low traffic volumes typically expected on local roads including Lusk Street, occasional queue spillback is not likely to result in traffic operational issues.

5.4.2 Access Intersection Control

The proposed site access driveway on Lusk Street will be stop-controlled.

5.4.3 Intersection Design (MMLOS)

Not Applicable – The proposed site access driveway will be unsignalized, therefore Intersection-based Multi-Modal Level of Service (MMLOS) analysis is not required.

This driveway connection will be designed as per City Standard Drawing SC7.1 (March 2021) to provide continuous sidewalks across the vehicular connection and prioritize pedestrians.

5.5 Transportation Demand Management (TDM) Program

The City of Ottawa is committed to implementing Transportation Demand Management (TDM) measures on a City-wide basis in an effort to reduce automobile dependence, particularly during the weekday peak travel periods. TDM initiatives are aimed at encouraging individuals to use non-auto modes of travel during the peak periods.

5.5.1 Context for TDM

As discussed previously, the proposed development is located adjacent to Lusk Street within the 4401 Fallowfield Road subdivision. Infrastructure for active transportation modes is planned with a 2.0-metre wide concrete sidewalk on the north side of Lusk Street that will connect to a future 3.0-metre wide asphalt pathway that will provide a pedestrian link to the western portion of the 4401 Fallowfield Road subdivision.

5.5.2 Need and Opportunity

With the development of the 4401 Fallowfield Road subdivision, there is an opportunity to increase the overall proportion of sustainable transportation trips within the surrounding community.

Mode share targets applied in this TIA were consistent with the Fallowfield Road subdivision and although the sustainable mode share targets aim to achieve a lower active transportation target in comparison with a typical blended rate, given the development's context and the suite of TDM measures outlined in the following section, it is expected that these targets will be achievable.

5.5.3 TDM Program

The proposed development conforms to the City's TDM principles by providing convenient and direct connections to adjacent pedestrian and cycling facilities.

The City of Ottawa's TDM Measures Checklist was completed for the proposed development and is provided in **Appendix E**. This checklist indicates measures that are being contemplated as part of this development, including the following:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Unbundle parking costs from purchase price and lease rates at multi-tenant sites; and
- Provide a multimodal travel option information package to new residents and employees.

5.6 Neighbourhood Traffic Management

5.6.1 Adjacent Neighbourhoods

Not Applicable – The proposed development is not reliant on residential local or collector streets to access the arterial road network.

5.7 Transit

5.7.1 Route Capacity

Not Applicable - Transit route capacity analysis is not required to support the projected site-generated transit demands which are expected to be nominal.

5.7.1 Transit Priority Measures

Transit priority measures are not required specifically to support the projected site-generated transit demands which are expected to be nominal. Additionally, none of the boundary streets are included in the 2013 TMP future rapid transit and transit priority (RTTP) network therefore no transit priority measures are anticipated to be implemented within the study area during the study period.

5.8 Review of Network Concept

Not Applicable – The Network Concept element is exempt from this TIA, as defined in the study scope. This element is not required for proposed developments expected to generate less than 200 person-trips during the weekday morning and afternoon peak hours in excess of current zoning permissions.

5.9 Intersection Design

The following sections summarize the methodology and results of the intersection warrant and multi-modal intersection capacity analyses conducted within the study area.

5.9.1 Intersection Control

5.9.1.1 Traffic Signal Warrants

Traffic signal warrants were completed for the Fallowfield & O'Keefe/Cobble Hill intersection. Based on the results of the analysis, traffic signals are warranted at this intersection under Future (2027) Background Traffic conditions.

The results of the traffic signal warrant analysis are provided in **Appendix K**.

5.9.1.2 Roundabout Analysis

The feasibility of implementing a roundabout was evaluated at the intersection of Fallowfield & O'Keefe/ Cobble Hill. It was determined that this form of traffic control would not be feasible, given that only one of the suitability factors had been met. Further, the implementation of a roundabout is not consistent with the City's long-term vision for this location which is planned to be upgraded to a signalized intersection once the appropriate warrants are met.

The results of the Roundabout Feasibility Screening Tool are provided in **Appendix K**.

5.9.2 Intersection Analysis Criteria (Automobile)

The following section outlines the City of Ottawa's methodology for determining motor vehicle Level of Service (LOS) at signalized and unsignalized intersections.

5.9.2.1 Signalized Intersections

The City of Ottawa has developed criteria as part of the TIA Guidelines, which directly relate the volume to capacity (v/c) ratio of a signalized intersection and the overall delay of an unsignalized intersection to a LOS designation. These criteria are as follows:

Table 13 - LOS Criteria for Signalized and Unsignalized Intersections

LOS	SIGNALIZED INTERSECTIONS	UNSIGNALIZED INTERSECTIONS
	VOLUME TO CAPACITY RATIO (v/c)	DELAY (seconds)
A	0 to 0.60	<10
B	0.61 to 0.70	>10 and <15
C	0.71 to 0.80	>15 and <25
D	0.81 to 0.90	>25 and <35
E	0.91 to 1.00	>35 and <50
F	> 1.00	>50

The Level of Service calculation is based on locally-specific parameters as described in the TIA Guidelines and incorporates existing signal timing plans obtained from the City of Ottawa. The existing conditions analysis utilized a Peak Hour Factor (PHF) of 0.90, while future conditions consider optimized signal timing plans and use of a Peak Hour Factor (PHF) of 1.0 to recognize peak spreading beyond a 15-minute period in congested conditions.

5.9.3 Intersection Capacity Analysis

Following the established intersection capacity analysis criteria described above, the future conditions were analysed during the weekday peak hour traffic volumes derived in this study.

The following section presents the results of the intersection capacity analysis. All tables summarize study area intersection LOS results during the weekday morning and afternoon peak hour periods.

The Synchro output files have been provided in **Appendix F**.

5.9.3.1 Future (2027) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2027) Background Traffic volumes presented in **Exhibit 7**, yielding the following results:

Table 14 - Intersection Capacity Analysis: Future 2027 Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	Unsignalized	**F (168.0s)**	**WBTRL (168.0s)**	**F (422.2s)**	**EBL (422.2s)**
	Signalized	A (0.60)	SBT (0.60)	B (0.68)	SBT (0.68)
Lusk Street & O'Keefe Court	Unsignalized	A (8.5s)	NBRL (8.5s)	A (9.5s)	NBRL (9.5s)
Fallowfield Road & Forager Street	Unsignalized	C (15.0s)	EBR (15.0s)	C (18.6s)	EBR (18.6s)

As shown above, the Fallowfield & O'Keefe/Cobble Hill intersection is operating at an LOS 'F' as an unsignalized intersection under Future (2027) Background conditions. As the traffic signal warrants for this intersection were triggered under these conditions, the remaining intersection capacity analysis will only include an evaluation with traffic signals at this location.

With signalization, the Fallowfield & O'Keefe intersection is expected to operate at an acceptably (LOS 'D' or better), along with the other study area intersections without any modifications under Future (2027) Background Traffic conditions.

5.9.3.2 Future (2032) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2032) Background Traffic volumes presented in **Exhibit 8**, yielding the following results:

Table 15 - Intersection Capacity Analysis: Future 2032 Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	Signalized	C (0.76)	SBT (0.76)	C (0.78)	NBT (0.78)
Lusk Street & O'Keefe Court	Unsignalized	A (8.5s)	NBRL (8.5s)	A (9.5s)	NBRL (9.5s)
Fallowfield Road & Forager Street	Unsignalized	C (18.7s)	EBR (18.7s)	C (20.8s)	EBR (20.8s)

All study area intersections are shown to operate acceptably (LOS 'D' or better) under Future (2032) Background Traffic conditions.

5.9.3.3 Future (2027) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2027) Total Traffic volumes presented in **Exhibit 9**, yielding the following results:

Table 16 - Intersection Capacity Analysis: Future 2027 Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	Signalized	B (0.62)	SBT (0.62)	C (0.77)	SBT (0.77)
Lusk Street & O'Keefe Court	Unsignalized	A (8.6s)	NBRL (8.6s)	A (9.7s)	NBRL (9.7s)
Fallowfield Road & Forager Street	Unsignalized	C (15.6s)	EBR (15.6s)	C (21.3s)	EBR (21.3s)

All study area intersections are shown to operate acceptably (LOS 'D' or better) under Future (2027) Total Traffic conditions.

5.9.3.4 Future (2032) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2032) Total Traffic volumes presented in **Exhibit 10**, yielding the following results:

Table 17 - Intersection Capacity Analysis: Future 2032 Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	Signalized	C (0.78)	SBT (0.78)	D (0.85)	SBT (0.85)
Lusk Street & O'Keefe Court	Unsignalized	A (8.6s)	NBRL (8.6s)	A (9.7s)	NBRL (9.7s)
Fallowfield Road & Forager Street	Unsignalized	C (19.7s)	EBR (19.7s)	C (24.4s)	EBR (24.4s)

All study area intersections are expected to continue operating at an acceptable Level of Service (LOS 'D' or better) under Future (2032) Total Traffic conditions, with traffic signals installed at the Fallowfield & O'Keefe/Cobble Hill intersection.

5.9.4 Intersection Design (MMLOS)

An analysis of conditions for each mode has been conducted based on the methodology prescribed in the 2017 Multi-Modal Level of Service Guidelines. The Level of Service for each mode has been calculated for each intersection where traffic signals exist or are anticipated.

For the purposes of the MMLOS analysis undertaken for this study, the Fallowfield & O'Keefe Court intersection was assumed to maintain its existing vehicular lane geometry. The introduction of 'protected intersection' elements would greatly improve the overall MMLOS scores for actives modes.

The Future (2032) Total Traffic intersection MMLOS results have been summarized in **Table 18** below. Detailed analysis results are provided in **Appendix J**.

Table 18 - Intersection MMLOS - Future Conditions

LOCATION	LEVEL OF SERVICE BY MODE			
	PEDESTRIAN (PLOS)	BICYCLE (BLOS)	TRANSIT (TLOS)	TRUCK (TkLOS)
INTERSECTION				
Fallowfield & O'Keefe/ Cobble Hill	**F** (Target: C)	**F** (Target: C)	D (Target: N/A[1])	**F** (Target: B)

Notes: [1] Not identified as a transit priority corridor in the TMP.

5.9.4.1 Summary of Potential Improvements

Based on the MMLOS results outlined in **Table 18** above, the following measures have been identified which could improve conditions for each travel mode:

Pedestrians

The PLOS at intersections is based on several factors including the number of traffic lanes that pedestrians must cross, corner radii, and whether the crossing allows for permissive or protective right or left turns, among others. The City of Ottawa target for PLOS in an Employment Area is 'C'.

The results of the analysis indicate that the intersection of Fallowfield & O'Keefe/Cobble Hill is expected to operate at PLOS 'F', primarily as a result of the effective number of lanes required to cross (crossing distance/3.5m) in combination with expected pedestrian delays. Providing enhanced pedestrian features such as a median, pedestrian leading interval, zebra stripe high-visibility crosswalk markings on the north and south approaches would reduce the level of pedestrian exposure on those crossings. The above features in combination with a reduced pedestrian crossing width of no more than 14 metres would achieve a PLOS of 'C'. It should be noted, however, that a reduction in the cycle length may result in negative impacts to the vehicle level of service. Alternatively, a 'protected intersection' design would help achieve the PLOS target.

Cyclists

The BLOS at intersections is dependent on several factors: the number of lanes that the cyclist is required to cross to make a left-turn; the presence of a dedicated right-turn lane on the approach; and the operating speed of each approach. The City target for BLOS in the Employment Area on a 'Spine Route' is 'C'.

The results of the analysis indicate that cycling facilities at the Fallowfield & O'Keefe/Cobble Hill intersection are not sufficient to achieve the BLOS target. Given the high operating speeds at this location, only the provision of physically separated cycling facilities with two-stage, left-turn bike

boxes on all approaches will be sufficient to achieve the BLOS target. Alternatively, a 'protected intersection' design would help attain the BLOS target and would help to complement the future urbanization of Fallowfield Road.

Transit

Intersection TLOS is based on the average signal delay experienced by transit vehicles on each approach. According to the MMLOS Guidelines, there is no target for TLOS on roads that are not designated as either a rapid transit or transit priority corridors in the TMP.

The results of the analysis indicates that the Fallowfield & O'Keefe/Cobble Hill intersection is anticipated to operate with average delays ranging from about 10s to 25s during the weekday peak hours, however as there are no frequent transit routes that utilize either side street approach, neither is factored into the TLOS calculation. Both the northbound and southbound approaches currently are expected to also experience relatively minor delays of 15s to 25s or less upon signalization of the Fallowfield & O'Keefe/Cobble Hill intersection which results in an overall intersection TLOS of 'D'.

Trucks

The Truck LOS (TkLOS) is based on the right-turn radii, as well as the number of receiving lanes for vehicles making a right-turn from the traffic lane being analyzed. The TkLOS target for Truck Routes on arterial or collector roads in the General Urban Area is 'B'.

Overall, the intersection TkLOS target is not attainable as it would require an increased right-turn radius to 10-15m and/or an increase to more than two receiving lanes on departure from intersection. However, turning movement count data indicates that trucks infrequently utilize Cobble Hill Drive, which is consistent with its classification as a local road and non-truck route. Given that its primary function is to provide access to adjacent residential subdivisions with infrequent transit movements, the existing right-turn radii is considered acceptable in this context. It should be noted that the right-turn radii to/from O'Keefe Court meets the TkLOS target, which is appropriate given that the Highway 416 Lands development is expected to generate regular truck traffic.

The recommended measures listed above are intended only as suggestions to the City on how the MMLOS within the study area could be improved and do not identify measures to be implemented as a direct consequence of this development. The remediation measures described above would improve mobility and comfort for pedestrians and cyclists but are not required to accommodate the proposed development.

5.10 Geometric Review

The following section provides a review of all geometric requirements for the study area intersections.

Sight Distance and Corner Clearances

The proposed site access driveway is being proposed on Lusk Street. This local road will have low vehicle volumes and operating speeds, given its classification and termination in a cul-de-sac west of the site. Further, there are no signalized or stop-controlled intersections within close proximity to the proposed site access driveway. As such, sightline visibility and corner clearance are not a concern with respect to the proposed access location.

5.10.2 Auxiliary Lane Analyses

An evaluation of auxiliary turning lane requirements for all study area intersections is summarized in the following sub-sections:

5.10.2.1 Auxiliary Left-Turn Lane Requirements (Unsignalized)

The intersection of O'Keefe Court & Lusk Street does not warrant an auxiliary left-turn lane based on the advancing and opposing volumes projected at this intersection under Future (2032) Total Traffic conditions.

The Fallowfield & Forager intersection is restricted to right-in/right-out movements, therefore it was not necessary to assess left-turn lane requirements at this intersection.

The results of the left-turn lane warrant analysis are provided in **Appendix L**.

5.10.2.2 Auxiliary Left-Turn Lane Requirements (Signalized)

As the intersection of Fallowfield/O'Keefe has been shown to require signalization, a review of auxiliary left-turn lane storage requirements was completed under Future (2032) Total Traffic conditions, comparing the highest queue lengths on each intersection approach under weekday morning and afternoon peak hours. The review compared the projected 95th percentile queue lengths from Synchro operational results, and the standard queue length calculation based on the following equation:

$$Storage\ Length = \frac{NL}{C} \times 1.5$$

Where:
N = number of vehicles per hour
L = Length occupied by a vehicle in the queue = 7 m
C = number of traffic signal cycles per hour

The results of the auxiliary left-turn lane analysis are summarized below in **Table 19** below.

Table 19 - Auxiliary Left-Turn Storage Analysis at Signalized Intersections

INTERSECTION	APPROACH	95TH %ILE QUEUE LENGTH AM/PM (M)	CALCULATED QUEUE LENGTH AM/PM (M)	EXISTING PARALLEL LENGTH (M)	STORAGE DEFICIENCY (M)
Fallowfield Road & O'Keefe Court / Cobble Hill Drive	NB	40/35	45/25	140	Existing Storage Adequate
	SB	5/15	5/10	60	Existing Storage Adequate
	EB	15/30	10/35	50	Existing Storage Adequate
	WB	15/15 [1]	10/5	-	Existing Storage Adequate [2]

Notes: [1] Synchro queues were determined based on existing shared lane configuration
[2] Through volumes are nominal during weekday peak hours (i.e. less than 10 veh/h)

As per the results of the queue length analyses presented **Table 19** above, the existing parallel lanes have sufficient storage to accommodate the projected Future (2032) Total Traffic demand. As such, no modifications to the existing auxiliary lanes are required for signalization of this intersection within the timeframe of this study.

5.10.2.3 Auxiliary Right-Turn Lane Requirements (Unsignalized)

The Transportation Association of Canada (TAC) suggests that auxiliary right-turn lanes be considered "when the volume of decelerating or accelerating vehicles compared with through vehicles causes undue hazard." Consideration for auxiliary right-turn lanes is typically given when the right-turning traffic exceeds 10% of the through volume and is at least 60 vehicles per hour.

The Fallowfield & Forager intersection was constructed with a southbound auxiliary right-turn lane that includes sufficient lengths to accommodate vehicle storage requirements which are anticipated to be minimal, therefore no modifications are required to this lane within the timeframe of this study.

5.10.2.4 Auxiliary Right-Turn Lane Requirements (Signalized)

Similarly for signalized intersections, Section 9.14 of TAC suggests that auxiliary right-turn lanes shall be considered when more than 10% of vehicles on an approach are turning right and when the peak hour demand exceeds 60 vehicles. The purpose of this guideline is to mitigate operational impacts to through-traffic, particularly on high-speed arterial roadways such as Fallowfield Road, and may not be applicable in all circumstances. The highest of the weekday morning and afternoon peak hour volumes under Future (2032) Total Traffic conditions were considered in this evaluation.

The results of the auxiliary right-turn lane analysis are summarized in **Table 20** below.

Table 20 – Auxiliary Right-Turn Lane Storage Analysis at Signalized Intersections

INTERSECTION	APPROACH	RIGHT TURN VOLUME	APPROACH VEHICLES TURNING RIGHT (%)	95TH %ILE QUEUE LENGTH (M)	EXISTING PARALLEL LENGTH (M)	STORAGE DEFICIENCY (M)
Fallowfield & O'Keefe/Cobble Hill	NB	47	4%	<10	115	Existing Storage Adequate
	SB	111	10%	<10	25	Existing Storage Adequate
	EB	126	45%	15[1]	-	Existing Storage Adequate[2]
	WB	69	62%	15[1]	-	Existing Storage Adequate[2]

Notes: [1] Synchro queues were determined based on existing shared lane configuration
[2] Through volumes are nominal during weekday peak hours (i.e. less than 10 veh/h)

Based on the traffic volumes projections developed for this TIA and a review of the 95th percentile queue lengths on each approach, no additional right-turn facilities are expected to be required as a result of projected background or site-generated traffic volumes at the Fallowfield & O'Keefe/Cobble Hill intersection with traffic signals under Future (2032) Total Traffic conditions.

5.11 Summary of Improvements Indicated and Modification Options

As per the intersection capacity, Multi-Modal Level of Service and auxiliary lane analyses results presented above, off-site improvements to the adjacent road network have been recommended in order to accommodate the transportation demands of both background and site-generated traffic. The MMLOS results indicate existing deficiencies with respect user comfort and safety that could be considered for implementation by the City but are not required to safely accommodate the proposed development.

5.11.1 Fallowfield Road & O'Keefe Court/Cobble Hill Drive

Fallowfield & O'Keefe/Cobble Hill is presently operating as a two-way stop-controlled intersection. The results of the analysis indicate that, by 2027, traffic signals will be operationally required and warranted at this junction under background traffic conditions. As indicated in **Exhibit 6**, the proposed development is expected to contribute up to 133 vehicle trips to this intersection during the weekday peak hours. With traffic signals in place, the intersection would be expected to operate at an acceptable level of service (i.e. LOS 'D') under Future (2032) Total Traffic conditions. If traffic signals are not implemented by the 2027 study analysis year, the results of the analysis indicate that delays of at least 5 minutes are expected at the Fallowfield & O'Keefe intersection with or without the inclusion of site-generated traffic. It is recommended that the City monitor this intersection on an annual basis to determine the appropriate timing for its signalization.

An analysis of auxiliary lane requirements found available storage at this intersection is sufficient and can accommodate future travel demands within the context of this study.

As identified through intersection-based MMLOS analysis conducted for Fallowfield & O'Keefe, various measures would need to be implemented in order to achieve the PLOS an BLOS targets. To attain the PLOS target, zebra stripe high-visibility crosswalk markings, a Leading Pedestrian Interval (LPI) and a minimum 2.4-metre wide median on the northbound/southbound approaches are required in conjunction with a reduced pedestrian crossing width to no more than four effective lane widths. The implementation of bike lanes or higher-order cycling facilities on all approaches, along with two-stage, left-turn bike boxes are required to meet the BLOS targets. Alternatively, a 'protected intersection' design with fully-integrated pedestrian and cycling facilities will help attain the PLOS and BLOS targets. These features should be considered by the City upon signalization of this intersection but are not required to safely accommodate site-generated traffic.

5.11.2 O'Keefe Court & Lusk Street

The O'Keefe & Lusk intersection is expected to operate at a high level of service (i.e. LOS 'A') beyond the 2032 horizon year of this study with stop control on Lusk Street and free-flow on O'Keefe Court.

The auxiliary lane analyses conducted as part of this study indicates that left- or right-turn auxiliary lanes are not required on any of the intersection approaches within the timeframe of this study.

5.11.3 Fallowfield Road & Forager Street

The Fallowfield & Forager intersection was constructed with a diverter island to restrict turning movements to right-in/right-out. With these restrictions in place, the intersection is expected to operate at LOS 'C' or better within the timeframe of this study.

6 Conclusion

The proposed development at 120 Lusk Street is expected to generate up to 117 and 133 two-way vehicular trips during the weekday morning and afternoon peak hours, respectively. The mode share targets were developed based on the South Nepean Traffic Assessment Zone (TAZ) and adjusted proportionally, in accordance with the Conditions of Approval for 4401 Fallowfield Road, to yield an 85% auto/15% non-auto mode share split.

Fallowfield & O'Keefe/Cobble Hill is presently configured as a two-way stop-controlled intersection and is operating at a LOS 'F' during the critical weekday afternoon peak hour, according to the capacity analysis conducted for this study. By 2027, traffic signals will be warranted under background traffic conditions in addition to being operationally required. With traffic signals in place, the intersection would be expected to operate at LOS 'D' under the critical weekday afternoon peak hour beyond the study horizon year. If traffic signals are not implemented by the 2032 study horizon year, delays of at least 5 minutes are expected at the Fallowfield & O'Keefe intersection with or without the inclusion of site-generated traffic. As site-generated traffic will not contribute significantly to any potential traffic operational issues at this intersection, it is recommended that the City continue monitoring this location on an annual basis to determine the appropriate timing for the introduction of traffic signals.

The results of the analysis indicate that the intersections of O'Keefe Court & Lusk Street and Fallowfield Road & Forager Street are expected to operate within acceptable standards (LOS 'D' or better) during the weekday morning and afternoon peak hours. Both are T-intersections that are configured with stop control on the minor road and are not expected to require additional auxiliary lanes or future modifications within the timeframe of this study.

A multi-modal analysis identified deficiencies in the existing road network and potential remediation measures have been suggested which the City could consider to meet these prescribed targets. It should be noted that, although these measures would improve for a range of transportation modes, they are not required to safely accommodate the transportation demands of the proposed development.

Roadway modifications (RMA-2019-TPD-041B) were implemented in 2021, including a right-in/right-out intersection at Fallowfield & Forager and a multi-use path along the west side of Fallowfield Road between O'Keefe Court to just south of Forager Street. It is understood that the southbound bus stop originally proposed as part of this RMA has been deferred until traffic signals are implemented at the Fallowfield & O'Keefe/Cobble Hill intersection.

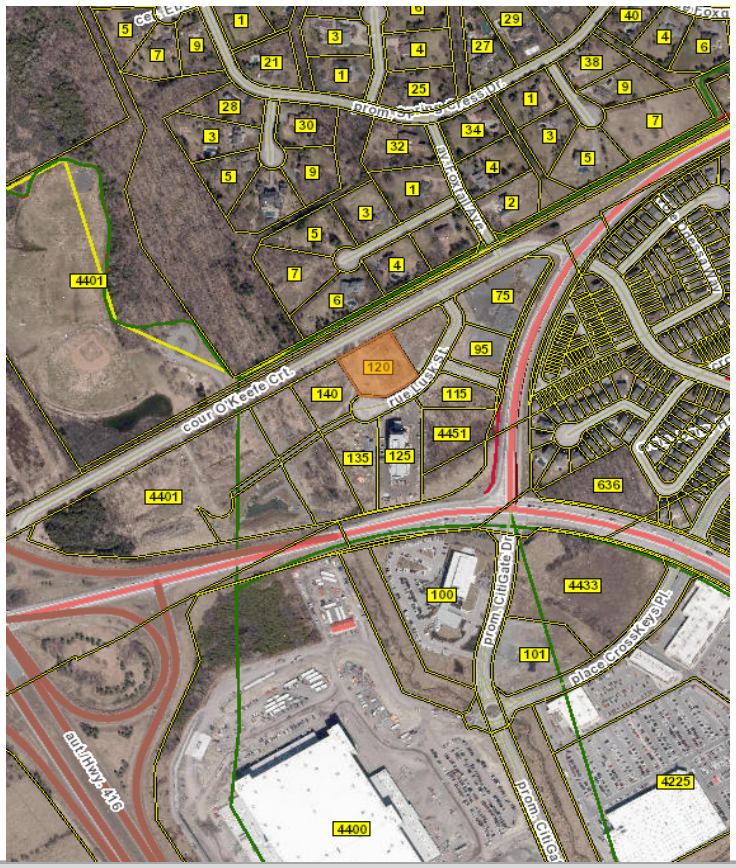
All study area intersections were shown to operate well within the capacity constraints of the adjacent transportation network, with the signalization of the Fallowfield & O'Keefe/Cobble Hill intersection by 2027. Given that installation of traffic signals would be required to support existing and future background growth in travel demand and is the only mitigation measure recommended to accommodate Future (2032) Total Traffic conditions, a Post-Development Monitoring Plan is therefore not a requirement of this study.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network with the recommended actions and modifications in place.

Appendix A – TIA Screening Form

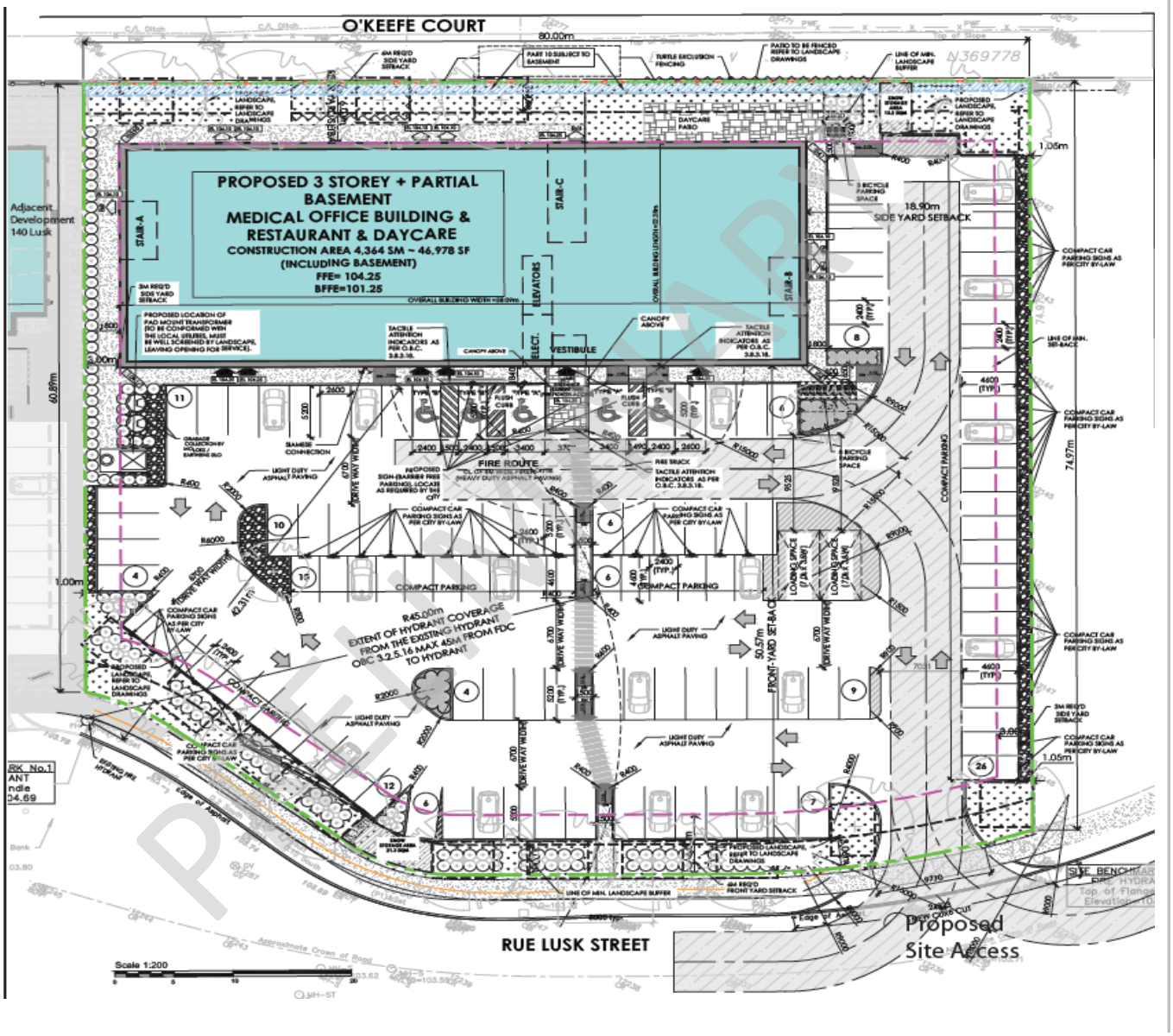
City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	120 Lusk Street, Ottawa, Ontario.
Description of Location	The proposed development is located on the north side of the cul-de-sac at the end of Lusk Street. It is bordered by O'Keefe Court to the north and currently undeveloped lands to the east and west. 
Land Use Classification	Sit-down Restaurant, Medical Uses, General Office, Pharmacy Daycare Centre
Development Size (units)	N/A
Development Size (m^2)	Sit-down Restaurant - ~193 m^2 Medical Uses - ~1,375 m2 (~14,801 ft2) General Office - ~1,481 m2 (~15,962 ft2) Pharmacy - ~185 m2 (~1,992 ft2) Daycare Centre - ~374 m2 (~4,022 ft2)
Number of Accesses and Locations	One (1) proposed full-movement site access driveway on Lusk Street
Phase of Development	Single Phase

Buildout Year	2027

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



2. Trip Gen Trigger

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

Land Use Type	Minimum Development Size	
Single-family homes	40 units	
Townhomes or apartments	90 units	
Office	3,500 m^2	
Industrial	5,000 m^2	
Fast-food restaurant or coffee shop	100 m^2	
Destination Retail	1,000 m^2	
Gas Station or convenience market	75 m^2	

The proposed development does not specifically trigger any of the minimum development sizes for the respective land uses presented in the Table above. Based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th Edition), the person-trip generation for the proposed development is expected to be in the range of 179 to 205 person trips per weekday peak hour. Since these person-trip estimates exceed the 60-person trip threshold established in the 2017 TIA Guidelines, the Trip Generation Trigger is satisfied.

**If the development has a land use type other than what is presented in the table above, estimates of person trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

Based on the above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?		✓
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		✓

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6) See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.*

Based on the above, the Location Trigger is not satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street 80km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street that limit sight lines at a proposed driveway?		✓
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/suburban conditions?)		✓
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✓
Does the development include a drive-thru facility?		✓

Based on the above, the Safety Trigger is not satisfied.

5. Summary

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

Based on the results of the TIA Screening Form, the Trip Generation Trigger is satisfied. As such, a TIA is required for the proposed development.

Appendix B – Proposed Development Site Plan

SITE STATISTICS

ZONING BY-LAW 2008-250 CONSOLIDATION			IP - BUSINESS PARK INDUSTRIAL	
			IP [2265](H)12	
ZONING MECHANISMS(TABLE 205)			**REQ'D**	**PROVIDED**
(a)LOT AREA			750 S.Q.M	6040.28
(c)MAX. LOT COVERAGE			55%	22%
(d)MIN. FRONT YARD , O'KEEFE COURT			MIN 6m	6m
(e)MIN. INTERIOR SIDE YARD			MIN 3m	3m
(e)MIN. INTERIOR SIDE YARD			MIN 3m	18.90m
(f)MIN. REAR YARD , LUSK ST.			MIN 6m	50.57m
(g)MAX. FLOOR SPACE INDEX			MAX 2	0.6
(h)MAX. BUILDING HEIGHT ((iv)MEASURED FROM GRADE TO T/O ROOF DECK)			12m	9.1 m
(i)MIN WIDTH OF LANDSCAPING				
(ii)ABUTTING A STREET			3m	3.06m
(iii)IN ALL OTHER CASES			NO MIN.	1m
COVERAGE CALCULATION	**SM**	**SF**	**ACRES**	**%**
SITE AREA	6040.28	65,017	1.5	100%
BUILDING AREA	1,301	14,006		22%
PAVED AREA	3,305.08	35,576		55%
LANDSCAPED AREA-INCL SIDEWALK AND PATIO	1,434	15,435		24%
TOTAL CONSTRUCTION AREA			**SM**	**SF**
BASEMENT FLOOR			474	5,102
1ST FLOOR			1,288	13,864
2ND FLOOR			1,301	14,006
3RD FLOOR			1,301	14,006
TOTAL CONSTRUCTION AREA			**4,364**	**46,978**
GFA (LEASABLE SPACES) CALCULATIONS			**SM**	**SF**
GROUND FLOOR-RESTAURANT			187	2,010
GROUND FLOOR-MEDICAL OFFICES			371	3,991
GROUND FLOOR-PHARMACY			185	1,992
GROUND FLOOR-DAYCARE			374	4,022
2ND FLOOR-MEDICAL OFFICES			502	5,405
2ND FLOOR- OFFICES			558	6,014
3RD FLOOR-MEDICAL OFFICES			502	5,405
3RD FLOOR- OFFICES			558	6,014
BASEMENT -OFFICES			365	3,934
TOTAL GFA			**3,602**	**38,787**

PARKING REQUIREMENTS (BASED ON TABLE 101; AREA "C" ON SCHEDULE 1A) - SPACES @ 2.6W x 5.2L - 50% of stalls are compact stalls (size of 2.4W x 4.6L per zoning standards)	**GFA (M2)**	**PARKING RATE**	**REQ'D**	**PROVIDED**
RESTAURANT: 10 PARKING SPACE PER 100m² OF GFA	187	0.100	18.7	
MEDICAL OFFICES (4 PARKING SPACE PER 100m² OF GFA)	1,375	0.040	55.0	
ACCESSORY TO THE MEDICAL FACILITIES (PHARMACY) (4 PARKING SPACE PER 100m² OF GFA)	185	0.040	7.4	
DAYCARE (2 PARKING SPACE PER 100m² OF GFA)	374	0.020	7.5	
OFFICES (2.4 PARKING SPACE PER 100m² OF GFA)	1,481	0.024	35.5	
TOTAL NO. OF PARKING SPACES			**124.1**	**125**
ACC. & STANDARD SPACES				63
COMPACT CAR SPACES				62

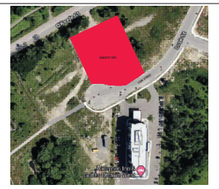
ACCESSIBLE PARKING (CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS)			**REQ'D**	**PROVIDED**
101-133 PARKING SPACES, THEN 5 ACCESSIBLE SPACES REQ'D			5	5
TYPE A (VAN), MIN WIDTH=3400			2	2
TYPE B, MIN WIDTH=2400			3	3

BICYCLE PARKING (TABLE 111A)	**GFA**		**REQ'D**	**PROVIDED**
(e)RESTAURANT,DAYCARE,OFFICES, 1 BICYCLE PARKING/ 250 m² OF GFA	**2,042**		**8.2**	
(g)MEDICAL OFFICES,1 BICYCLE PARKING/ 1000m² OF GFA	**1,560**		**1.6**	
TOTAL BICYCLE PARKING			**9.7**	**11**

DRIVEWAYS AND AISLE REQUIREMENTS (SECTION 107)			**REQ'D (MIN)**	**PROVIDED**
TWO-WAY DRIVEWAY			6.7	6.7
TWO-WAY PARKING AISLE			6.7	6.7
MINIMUM WIDTH IN METRES OF AISLE ACCESSING LOADING SPACE, BY ANGLE OF LOADING SPACE			9.0	9.5

LOADING REQUIREMENTS (SECTION 113) (SIZE: 3.5W x9.0L PARALLEL; 3.5W x7.0 OTHER; 4.2M VERT CLR)	**GFA**		**REQ'D**	**PROVIDED**
MEDICAL OFFICES (I)(OFFICES, RESEARCH AND DEVELOPMENT CENTER,1000-1999 m2 , REQUIRE 1 LOADING SPACE	1,560		1	
OFFICES (I)(OFFICES, RESEARCH AND DEVELOPMENT CENTER,1000-1999 m2, REQUIRE 1 LOADING SPACE	1,481		1	
(a) ALL OTHER NON-RESIDENTIAL USERS, RESTAURANT:350m² <GFA<999m² , REQUIRE 0 LOADING SPACE	187		0	
(a) ALL OTHER NON-RESIDENTIAL USERS, DAYCARE:350m² <GFA<999m² , REQUIRE 0 LOADING SPACE	374		0	
TOTAL LOADING SPCAES			**2**	**2**

1 ASP-1 SITE STAT N.T.S



2 ASP-1 KEY PLAN N.T.S

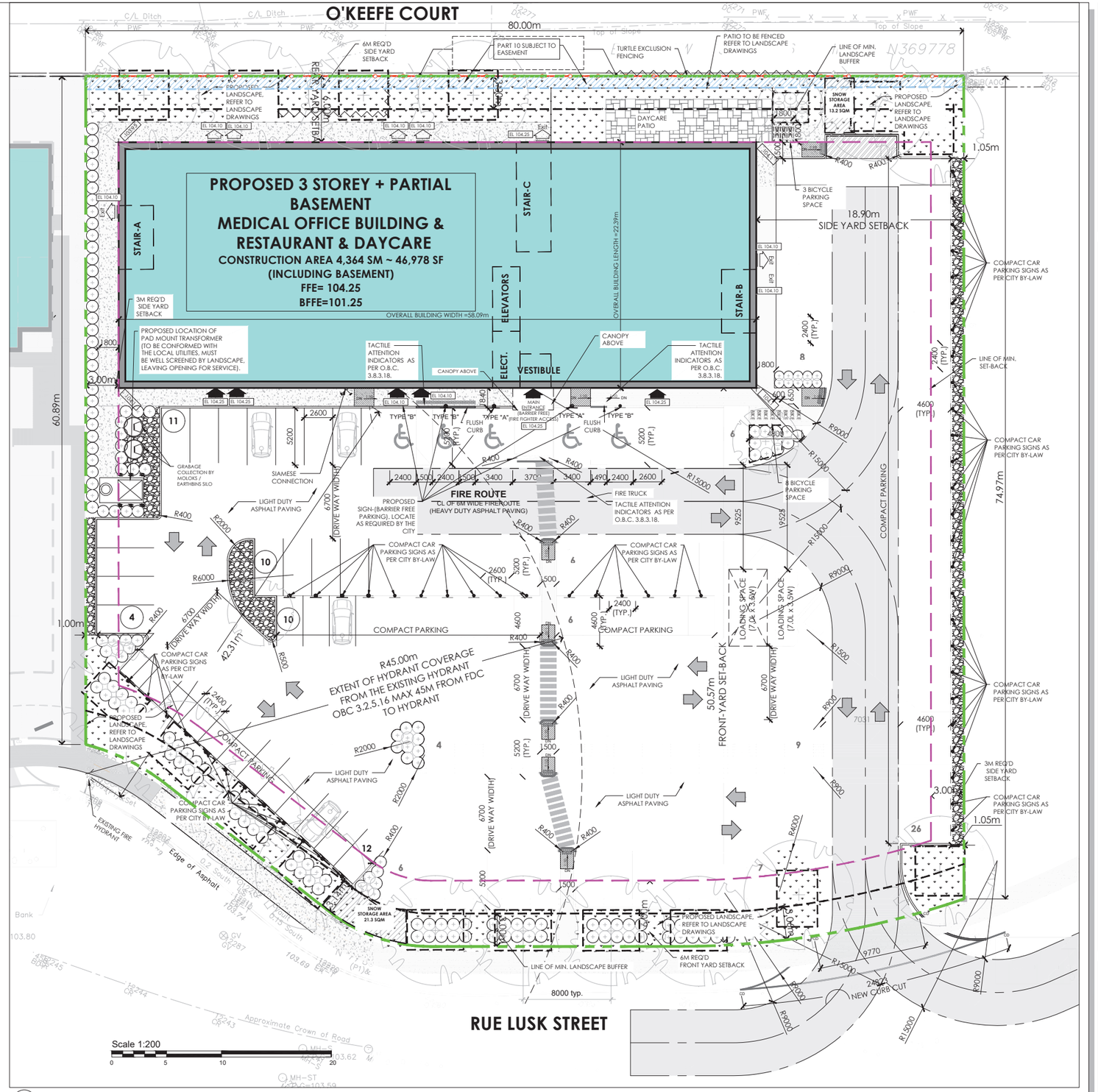
SITE PLAN LEGEND

	PROPERTY LINE		RECESSED EXTERIOR LIGHT FIXTURE @ SOFFIT & PROTE COCHERE -REFER TO ELECTRICAL DWGS
	BUILDING SETBACK LINE		NEW HEAVY DUTY ASPHALT PAVING (REMAINDER OF THE SITE TO RECEIVE LIGHT DUTY ASPHALT PAVING)
	LANDSCAPE BUFFER		DECORATIVE NON-SLIP SURFACE PAVING UNDER PORTE COCHERE (REFER TO LANDSCAPE DWGS)
CD	CURB DEPRESSION		LANDSCAPED AREA
	ENTRY/ EXIT ACCESS POINTS		POURED CONCRETE PAD AT LOADING AREA & WASTE COLLECTION
	EXISTING TOWN HYDRANT		STEEL BOLLARD (REFER TO DETAIL XX.X)
	PROPOSED LOCATION OF NEW FIRE HYDRANT W/ STEEL BOLLARDS -REFER TO CIVIL DWGS	(X)	PARKING COUNT
	FIRE DEPARTMENT CONNECTION	104.04	PROPOSED GRADING (REFER TO CIVIL DWGS)
	HOSE BIB (REFER TO MECHANICAL DWGS)		CONDENSING UNIT ON 4" CONCRETE PAD (REFER TO MECH DWGS)
	PAD MOUNTED HYDRO TRANSFORMER W/ STEEL BOLLARDS		SNOW STORAGE AREA (OWNER TO TAKE NECESSARY PRECAUTIONS W/ SNOW REMOVAL COMPANY)
	DOUBLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL		
	SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL DWGS		
	SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE W/ ELECTRICAL OUTLET -REFER TO ELECTRICAL DWGS		

CREDIT NOTES:	CREDIT NOTES:
THIS SITEPLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE SURVEY FOR THIS PROPERTY. MATAJ ARCHITECTS ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY, OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.	**TOPO SURVEYORS INFO:** ANNIS, O'SULLIVAN, VOLLEBEKK LTD. 14 Concourse Gate, Suite 500 Nepean, Ont. K2E 7S6 Phone: (613) 727-0850 PHONE: (519) 742-8371 Email: Nepean@aovltd.com
LEGAL LAND DESCRIPTION:	
Block 2 REGISTERED PLAN 4M-1634 CITY OF OTTAWA	

SITE PLAN- GENERAL NOTES

1	ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AN DBOULEVARD AREAS DISTURBED BY THE CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE TOWN	5	THE OWNER/ CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND BARRIER-FREE SIGNS AS SET OUT IN THE TOWN BY-LAWS AND DESIGN CRITERIA
2	A MINIMUM SETBACK OF 1.0m FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR/OWNER TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/ OWNER	6	ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE
		7	ALL DOWNSPOUTS TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM
3	THE CONTRACTOR/ OWNER IS RESPONSIBLE FOR ALL UTILITY LOCATES AND DAMAGE/ DISTURBANCE DURING CONSTRUCTION.	8	ALL CONDENSING UNITS TO BE SCREENED ON THE GROUND FLOOR
		9	SEPARATE PERMITS ARE REQUIRED FOR ANY SIGNAGE ON THE PROPERY
4	ALL BARRIER-FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C. 3.8.	10	WHERE POSSIBLE TREES ARE TO BE PROTECTED FROM CONSTRUCTION



2 ASP-1 SITE PLAN 1:200

Project North: | True North:

Key Plan:

No.	Date:	Issue/Revision	By:
2	2025/08/18	Issued for 1st Review Response	S.F.
1	2024/11/29	Issued for SPA	S.F.

Drawing Issues/Revisions:

Note:
ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE ARCHITECT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE ARCHITECT MUST BE NOTIFIED IMMEDIATELY.

FEATURES OF CONSTRUCTION NOT FULLY SHOWN ARE ASSUMED TO BE THE SAME CHARACTER AS THOSE NOTED FOR SIMILAR CONDITIONS.

UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISION HAS BEEN MADE IN THE DESIGN FOR CONDITIONS OCCURRING DURING CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY BRACING, SHORINGS, SHEET PILING OR OTHER TEMPORARY SUPPORTS, TO SAFEGUARD ALL EXISTING OR ADJACENT STRUCTURES AFFECTED BY THIS WORK.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF MATAJ ARCHITECTS INC.
USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

WORK IN PROGRESS

MATAJ ARCHITECTS INC

Architect's Stamp

MATAJ ARCHITECTS INCORPORATED
206-418 Iroquois Shore Rd
Oakville Ontario
L6H 0X7
T 905.281.4444

Project:
LUSK MEDICAL BUILDING
120 Lusk Street, Ottawa ON.

Sheet Title:
PROPOSED SITE PLAN

Design By:	Drawn By:	Approved By:
M.A./S.F.	D.A.	A.M.
Scale: AS SHOWN	Date: 2024.05.16	Project No.: 22-043

Drawing No:
ASP-1

Drawing Series:
ARCHITECTURAL - SPA

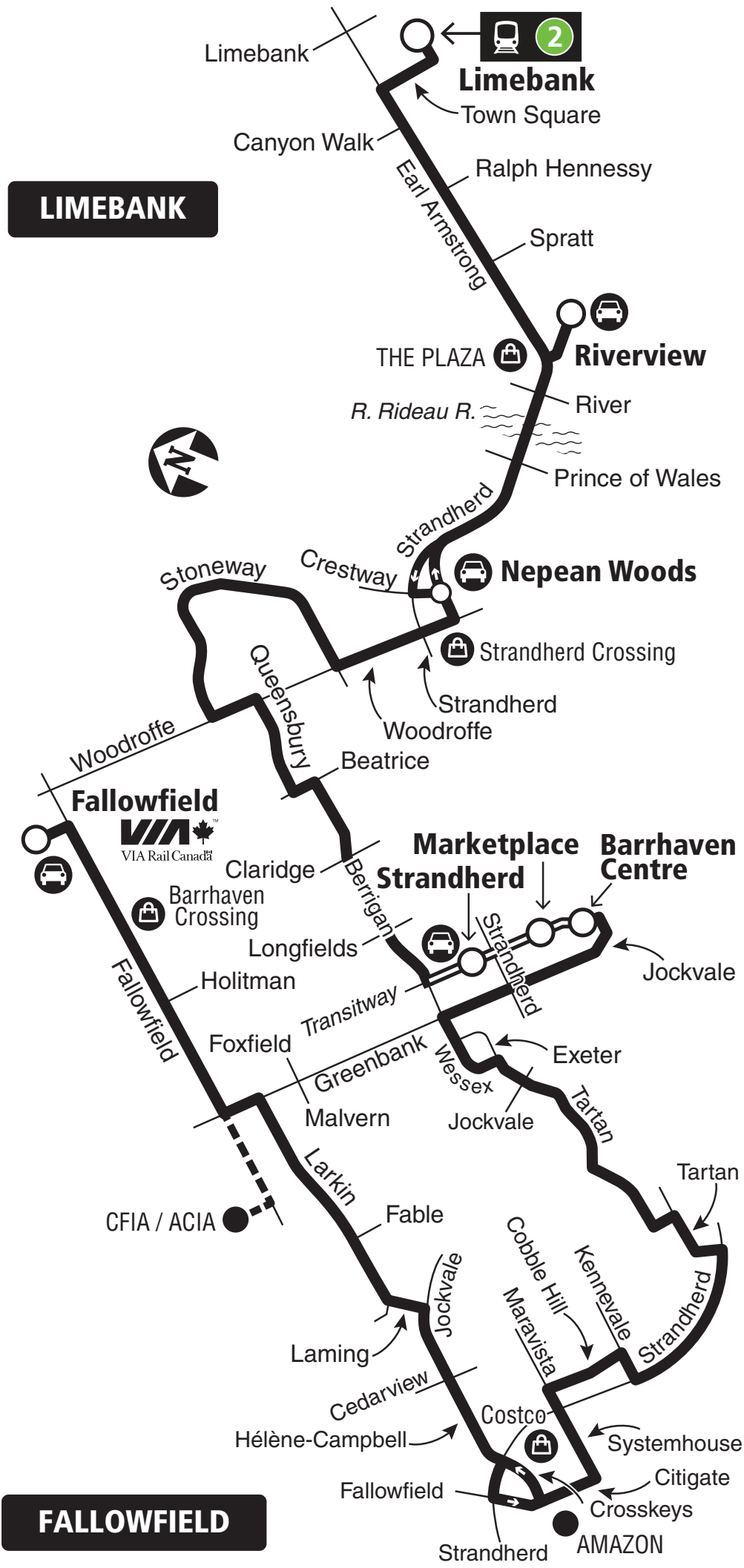
Appendix C – OC Transpo Routes

70

LIMEBANK
FALLOWFIELD

Local

7 days a week / 7 jours par semaine
All day service
Service toute la journée



05.2025

- Transitway & Station
- Some trips / Quelques trajets
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.05

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

110 LIMEBANK

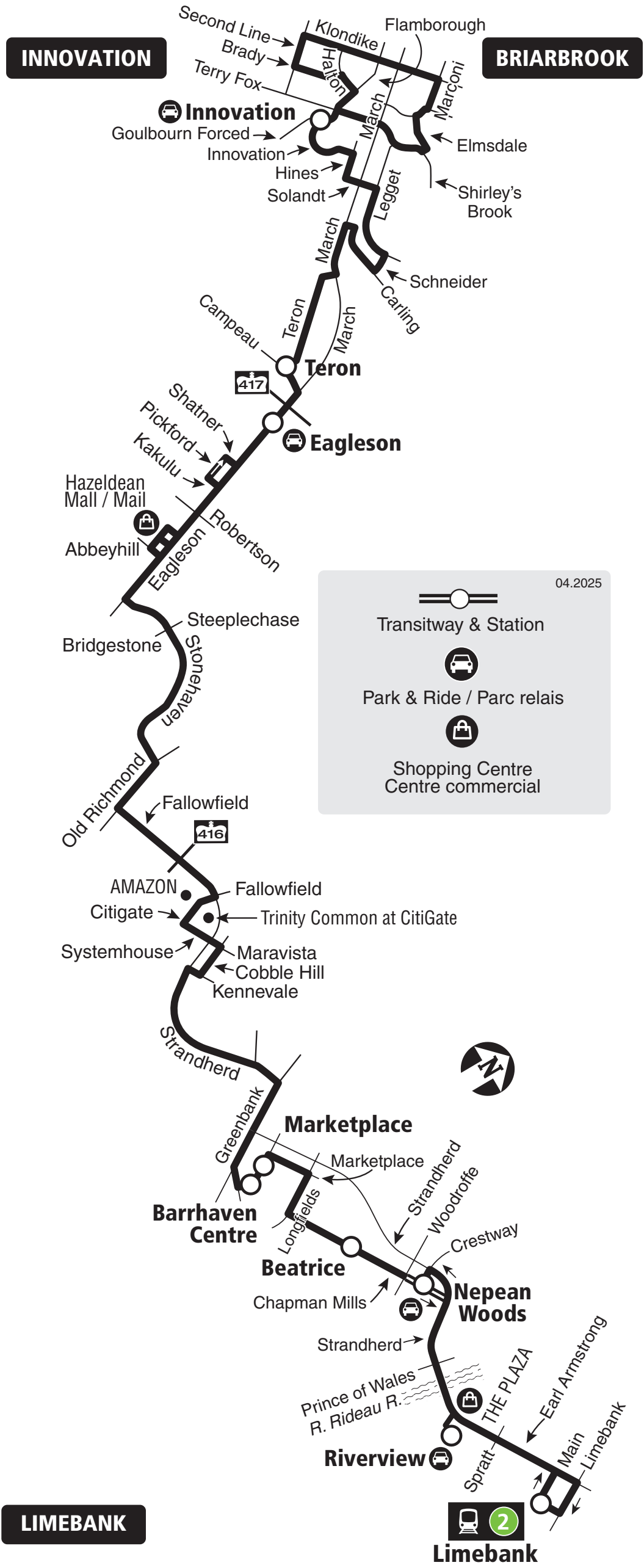
INNOVATION BRIARBROOK

Local

7 days a week / 7 jours par semaine

All day service

Service toute la journée



2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

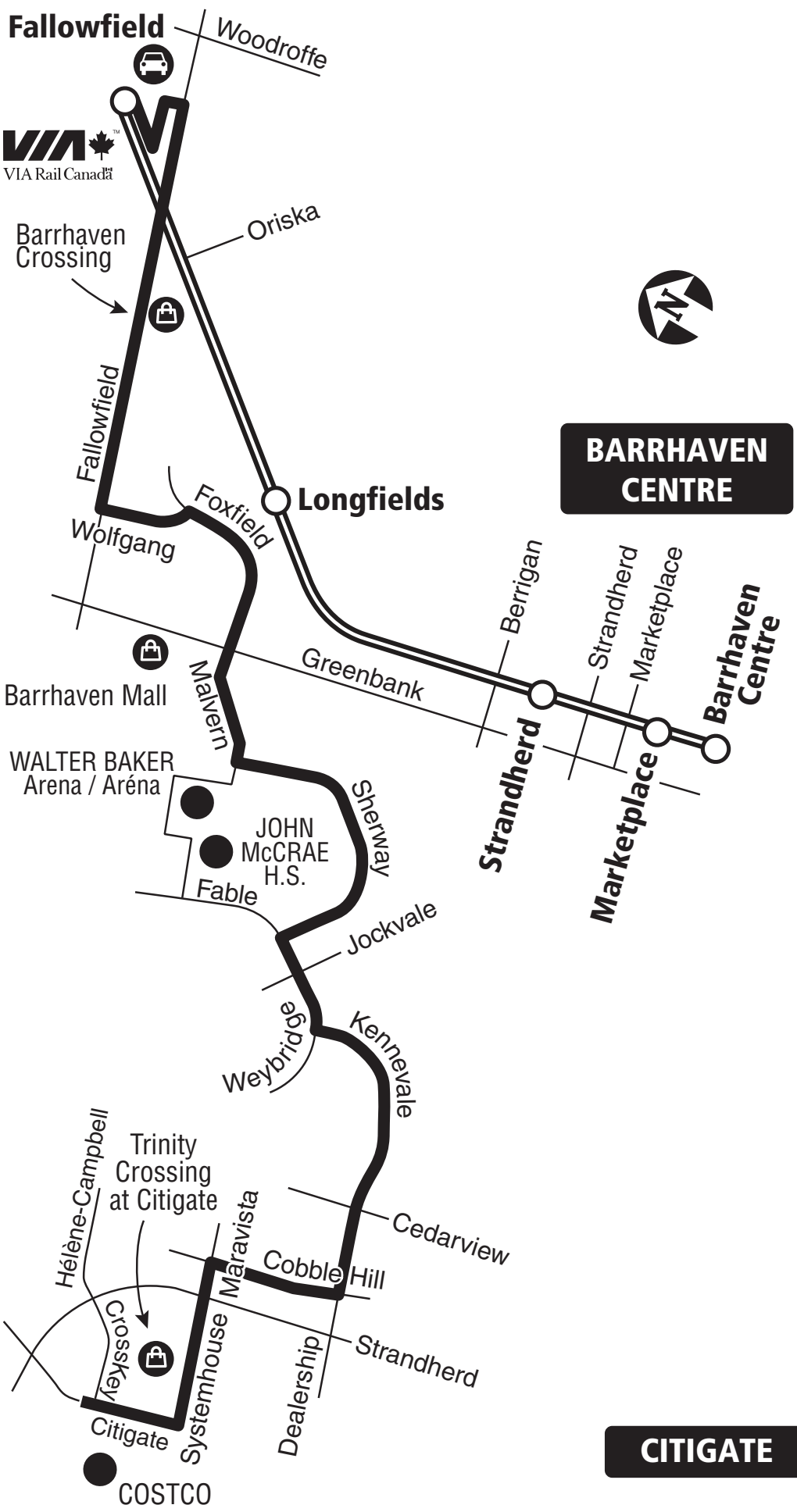
173

BARRHAVEN CENTRE
CITIGATE

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04.2025

- Station
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

Appendix D – Collision Data

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: FALLOWFIELD RD @ O'KEEFE CRT

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jul-31, Fri,03:34	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Ran off road	0
2021-Dec-24, Fri,09:39	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Ran off road	0

Location: FALLOWFIELD RD @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jan-12, Thu,06:25	Rain	Approaching	P.D. only	Wet	West	Unknown	Unknown	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-26, Sun,14:09	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Pick-up truck	Other motor vehicle	
2017-Apr-20, Thu,08:40	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-05, Mon,14:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jul-14, Fri,18:11	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Merging	Automobile, station wagon	Other motor vehicle	
2017-Jul-26, Wed,07:34	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-12, Sat,18:56	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-15, Tue,14:45	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: FALLOWFIELD RD @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Sep-20, Wed,20:10	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-17, Tue,17:28	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-17, Fri,12:02	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2018-Jan-08, Mon,12:55	Snow	Rear end	Non-fatal injury	Slush	East	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-08, Thu,15:46	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2018-Feb-09, Fri,17:45	Clear	Rear end	Non-fatal injury	Wet	West	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Feb-16, Fri,15:35	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Mar-09, Fri,10:55	Snow	Angle	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2018-Apr-26, Thu,16:11	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Passenger van	Other motor vehicle	
2018-Jun-19, Tue,21:05	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Motorcycle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-24, Sun,14:01	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Aug-16, Thu,12:28	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: FALLOWFIELD RD @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Sep-10, Mon,07:45	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-17, Mon,14:10	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Oct-24, Wed,08:45	Clear	Rear end	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-22, Sat,08:04	Snow	Turning movement	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jan-01, Tue,19:29	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Municipal transit bus	Other motor vehicle	
2019-Jan-29, Tue,08:35	Clear	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Truck - dump	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-31, Thu,16:32	Clear	Rear end	P.D. only	Packed snow	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-25, Mon,21:05	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-Mar-05, Tue,16:30	Snow	Rear end	P.D. only	Loose snow	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-24, Wed,18:20	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2019-May-04, Sat,10:30	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Unknown	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: FALLOWFIELD RD @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-30, Tue,08:03	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Truck and trailer	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Sep-14, Sat,15:00	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-16, Mon,08:35	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-16, Sat,13:41	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jan-31, Fri,11:01	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2020-Feb-20, Thu,07:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Mar-08, Sun,10:29	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Truck - dump	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jun-05, Fri,15:10	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jul-27, Mon,16:27	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Oct-01, Thu,11:26	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-Dec-28, Mon,18:51	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: FALLOWFIELD RD @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 52

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jan-19, Tue,06:46	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Feb-18, Thu,08:20	Clear	Rear end	P.D. only	Ice	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Feb-27, Sat,14:21	Clear	SMV other	Non-fatal injury	Slush	East	Changing lanes	Automobile, station wagon	Skidding/sliding	0
2021-Mar-11, Thu,08:49	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Jul-20, Tue,16:30	Rain	Sideswipe	P.D. only	Wet	East	Turning left	Other emergency vehicle	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2021-Aug-27, Fri,16:04	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Oct-31, Sun,03:00	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Ran off road	0
2021-Oct-31, Sun,04:27	Clear	SMV other	P.D. only	Wet	East	Unknown	Unknown	Pole (utility, power)	0
2021-Nov-21, Sun,14:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Dec-15, Wed,11:55	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Appendix E – Traffic Count Data

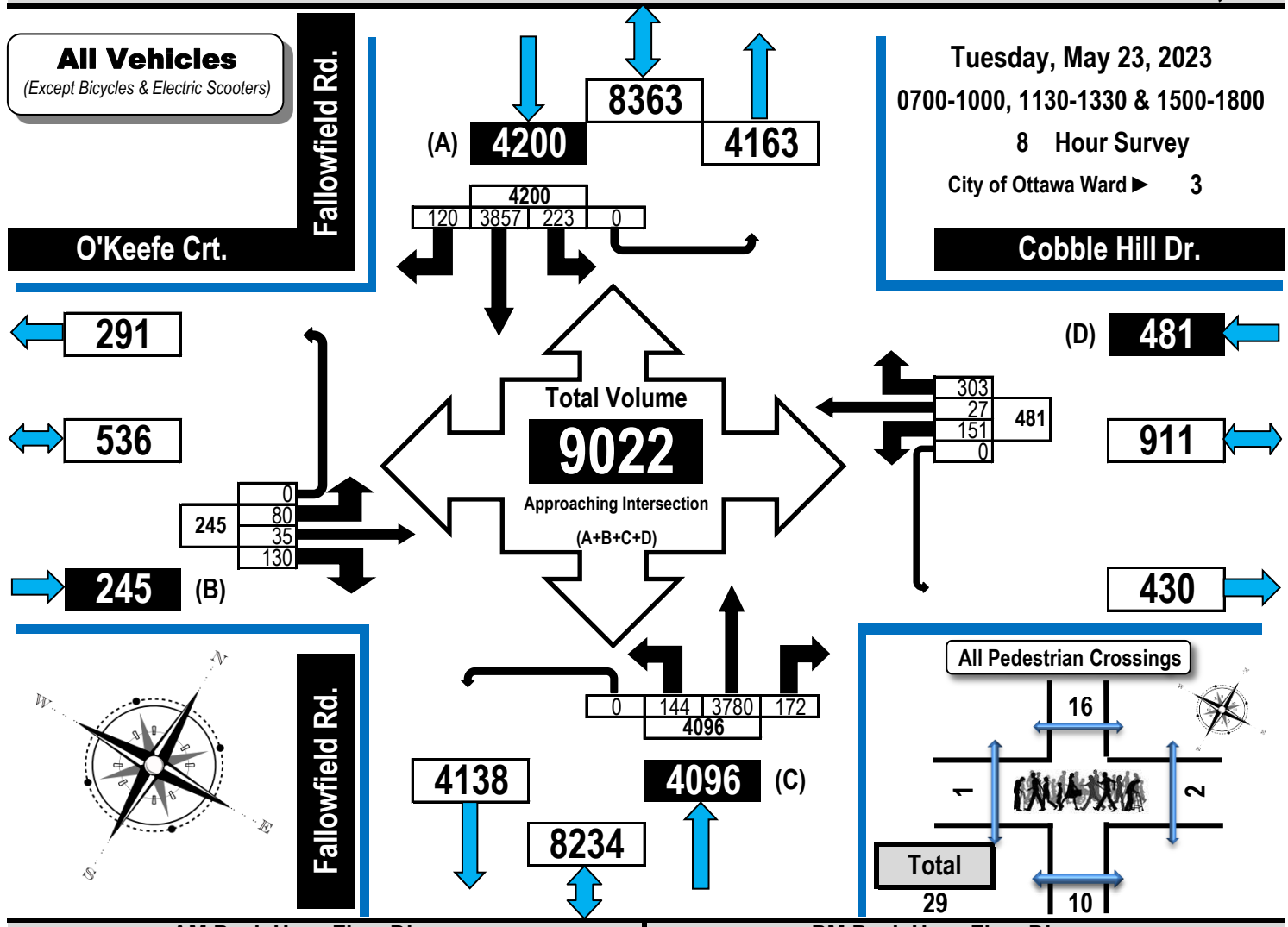
ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

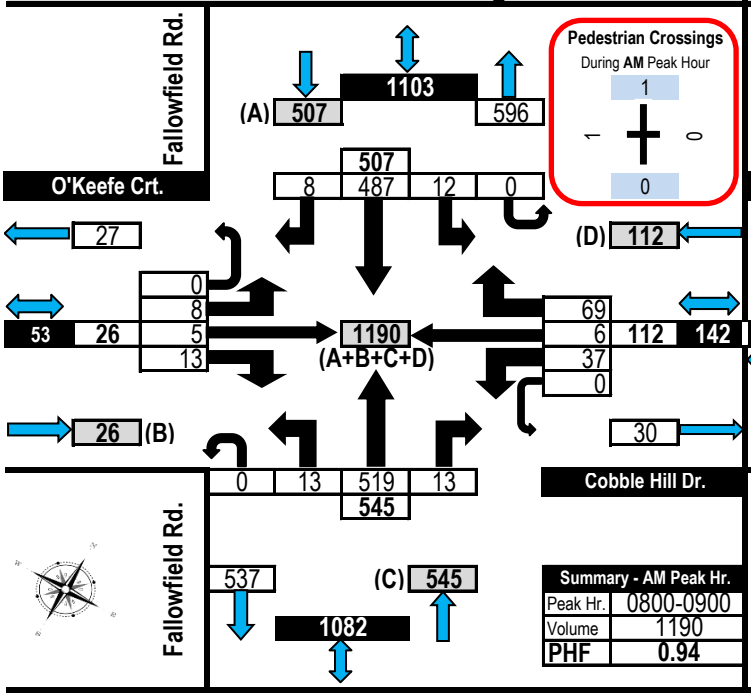
Cobble Hill Drive/O'Keefe Court & Fallowfield Road — Barrhaven West, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, May 23, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 3

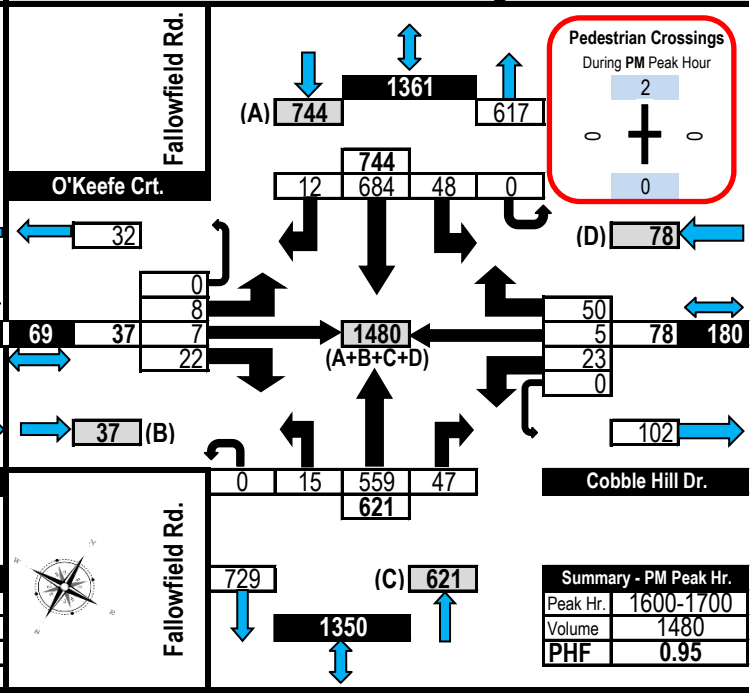


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	1190
PHF	0.94

PM Peak Hour Flow Diagram

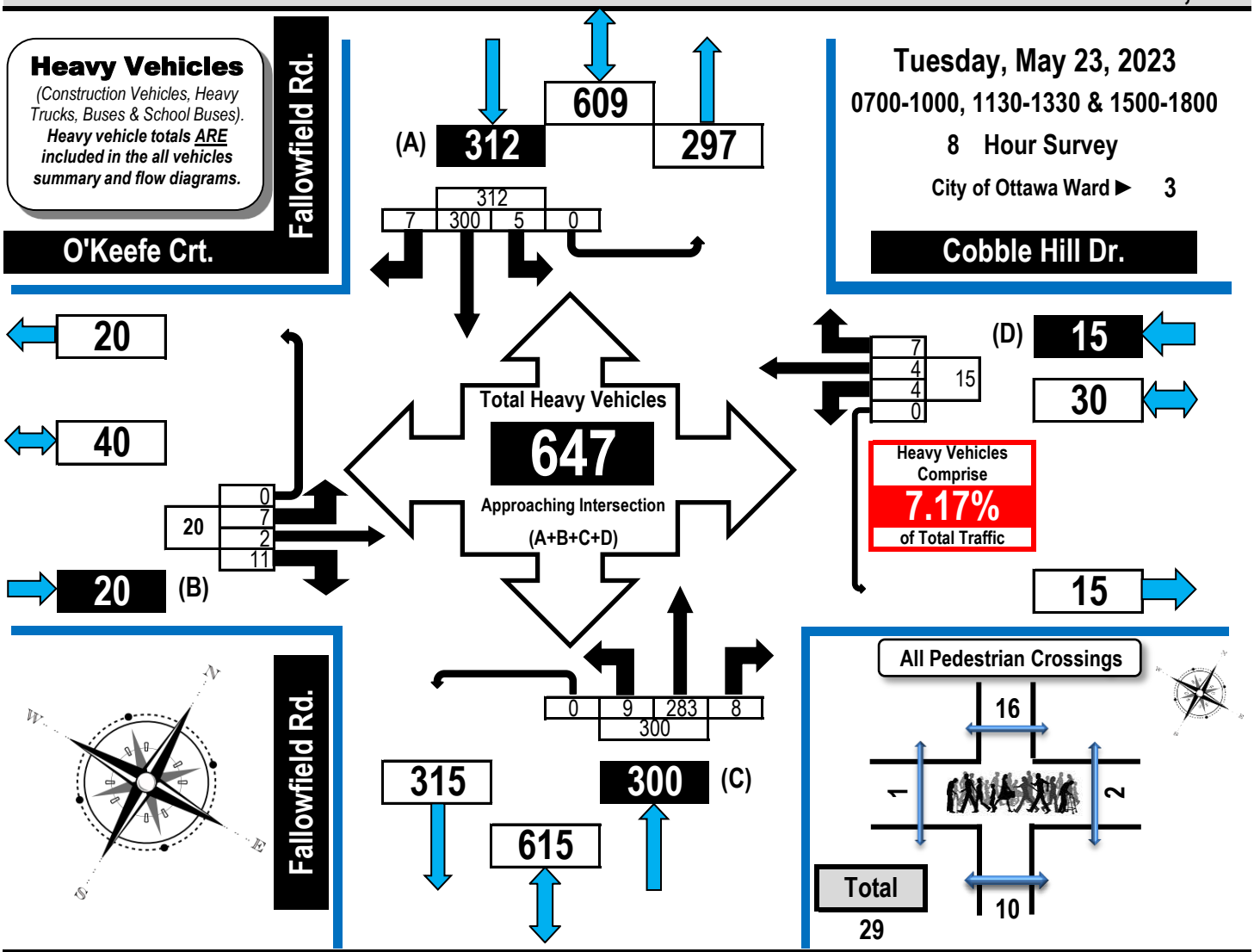


Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	1480
PHF	0.95

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Cobble Hill Drive/O'Keefe Court & Fallowfield Road — Barrhaven West, ON



	O'Keefe Crt.					Cobble Hill Dr.					Fallowfield Rd.					Fallowfield Rd.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	2	0	0	0	2	0	1	0	0	1	4	54	3	0	61	1	26	2	0	29	93
0800-0900	2	2	2	0	6	0	1	2	0	3	2	39	2	0	43	1	39	1	0	41	93
0900-1000	1	0	1	0	2	1	0	0	0	1	0	54	2	0	56	0	63	0	0	63	122
1130-1230	0	0	2	0	2	0	0	0	0	0	1	39	0	0	40	0	43	0	0	43	85
1230-1330	0	0	2	0	2	0	0	0	0	0	1	39	0	0	40	0	40	1	0	41	83
1500-1600	1	0	2	0	3	0	1	2	0	3	1	34	0	0	35	2	34	2	0	38	79
1600-1700	1	0	2	0	3	2	1	2	0	5	0	18	1	0	19	1	35	1	0	37	64
1700-1800	0	0	0	0	0	1	0	1	0	2	0	6	0	0	6	0	20	0	0	20	28
Totals	7	2	11	0	20	4	4	7	0	15	9	283	8	0	300	5	300	7	0	312	647

Comments:

Transit buses, private buses and school buses comprise 18.24% of the heavy vehicle traffic. The Hampton Inn and Suites is the only business open in this area as all other building lots are not yet developed.

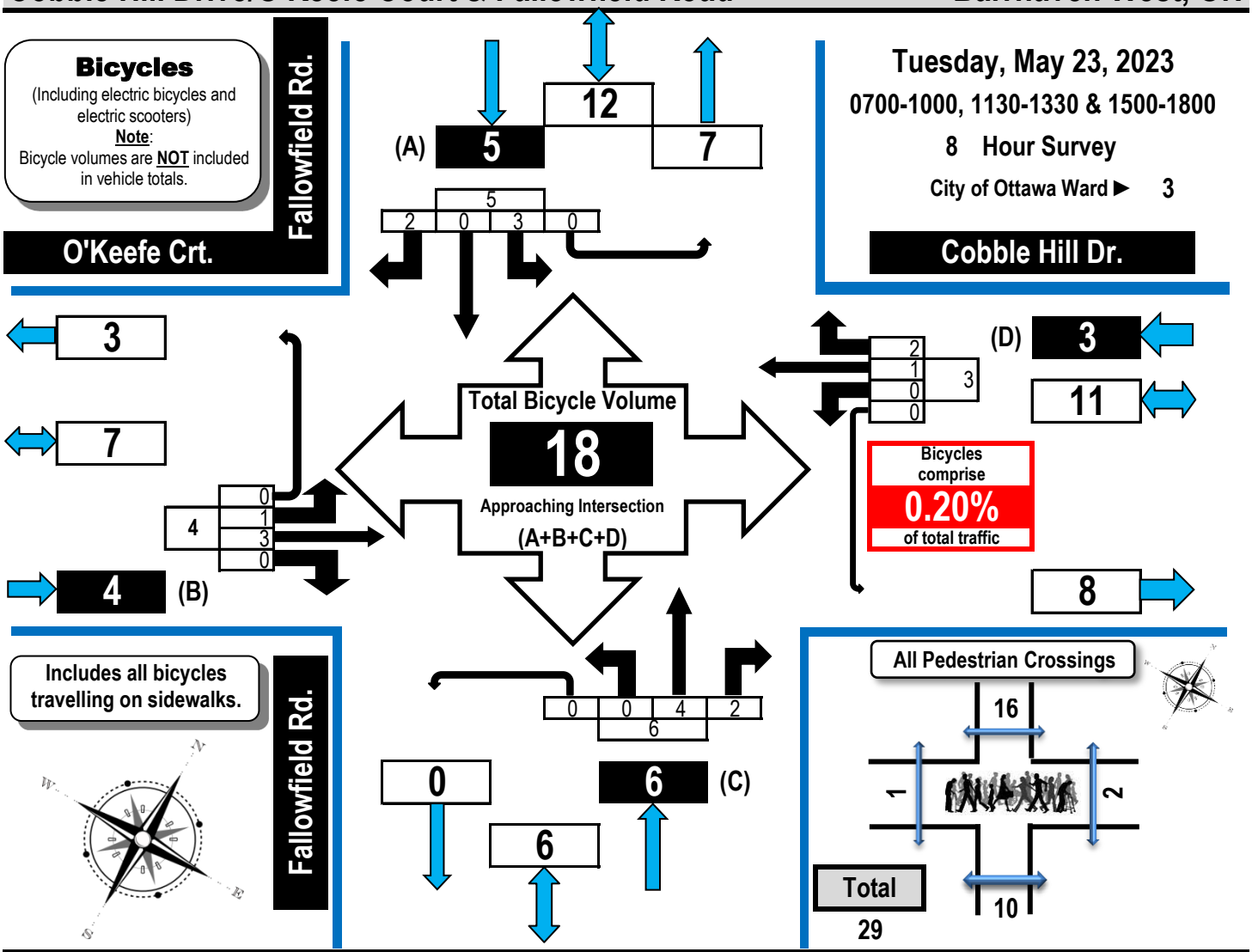
ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Bicycle Summary
Flow Diagram

Cobble Hill Drive/O'Keefe Court & Fallowfield Road — Barrhaven West, ON

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are **NOT** included in vehicle totals.

Tuesday, May 23, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 3



	O'Keefe Crt. Eastbound					Cobble Hill Dr. Westbound					Fallowfield Rd. Northbound					Fallowfield Rd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800-0900	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	2
0900-1000	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
1130-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
1230-1330	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
1500-1600	1	0	0	0	1	0	0	1	0	1	0	1	0	0	1	0	0	2	0	2	5
1600-1700	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1700-1800	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
Totals	1	3	0	0	4	0	1	2	0	3	0	4	2	0	6	3	0	2	0	5	18

Comments:
Transit buses, private buses and school buses comprise 18.24% of the heavy vehicle traffic. The Hampton Inn and Suites is the only business open in this area as all other building lots are not yet developed.

Appendix F – Intersection Capacity Analyses

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	13	37	6	69	13	519	13	12	487	8
Future Vol, veh/h	8	5	13	37	6	69	13	519	13	12	487	8
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	-	-	-	1400	-	-	600	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	25	40	15	0	17	3	15	8	15	8	8	12
Mvmt Flow	9	6	14	41	7	77	14	577	14	13	541	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	887	1187	542	1196	1189	297	550	0	0	592	0	0
Stage 1	567	567	-	613	613	-	-	-	-	-	-	-
Stage 2	320	620	-	583	576	-	-	-	-	-	-	-
Critical Hdwy	7.675	7.1	6.425	7.3	6.755	6.945	4.325	-	-	4.22	-	-
Critical Hdwy Stg 1	6.475	6.1	-	6.5	5.755	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.875	6.1	-	6.1	5.755	-	-	-	-	-	-	-
Follow-up Hdwy	3.7375	4.38	3.4425	3.5	4.1615	3.3285	2.3425	-	-	2.276	-	-
Pot Cap-1 Maneuver	222	149	509	154	171	697	944	-	-	947	-	-
Stage 1	460	435	-	451	453	-	-	-	-	-	-	-
Stage 2	614	409	-	502	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	145	509	142	166	696	944	-	-	946	-	-
Mov Cap-2 Maneuver	187	145	-	142	166	-	-	-	-	-	-	-
Stage 1	453	429	-	444	446	-	-	-	-	-	-	-
Stage 2	530	402	-	474	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	27.3	0.2	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	944	-	-	187	300	283	946	-	-
HCM Lane V/C Ratio	0.015	-	-	0.048	0.067	0.44	0.014	-	-
HCM Control Delay (s)	8.9	-	-	25.2	17.9	27.3	8.9	-	-
HCM Lane LOS	A	-	-	D	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	2.1	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	0	24	3	0	23
Future Vol, veh/h	3	0	24	3	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	0	27	3	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	3	0	60	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1632	-	952	1087
Stage 1	-	-	-	-	1025	-
Stage 2	-	-	-	-	971	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1632	-	936	1087
Mov Cap-2 Maneuver	-	-	-	-	936	-
Stage 1	-	-	-	-	1025	-
Stage 2	-	-	-	-	954	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.4	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1087	-	-	1632	-
HCM Lane V/C Ratio	0.024	-	-	0.016	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	545	529	8
Future Vol, veh/h	0	13	0	545	529	8
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	0	606	588	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	299	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	703	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	703	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	703	-	-
HCM Lane V/C Ratio	-	0.021	-	-
HCM Control Delay (s)	-	10.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

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	8	7	22	23	5	50	15	559	47	48	684	12
Future Vol, veh/h	8	7	22	23	5	50	15	559	47	48	684	12
Conflicting Peds, #/hr	0	0	2	2	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	500	-	-	-	-	-	1400	-	-	600	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	12	0	9	9	20	4	0	3	2	2	5	8
Mvmt Flow	9	8	24	26	6	56	17	621	52	53	760	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1214	1573	762	1572	1560	337	773	0	0	673	0	0
Stage 1	866	866	-	681	681	-	-	-	-	-	-	-
Stage 2	348	707	-	891	879	-	-	-	-	-	-	-
Critical Hdwy	7.48	6.5	6.335	7.435	6.8	6.96	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.28	5.5	-	6.635	5.8	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.68	5.5	-	6.235	5.8	-	-	-	-	-	-	-
Follow-up Hdwy	3.614	4	3.3855	3.5855	4.19	3.338	2.2	-	-	2.219	-	-
Pot Cap-1 Maneuver	138	111	390	77	98	655	851	-	-	916	-	-
Stage 1	329	373	-	394	415	-	-	-	-	-	-	-
Stage 2	619	441	-	324	333	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	102	389	64	90	655	851	-	-	916	-	-
Mov Cap-2 Maneuver	113	102	-	64	90	-	-	-	-	-	-	-
Stage 1	322	351	-	386	407	-	-	-	-	-	-	-
Stage 2	548	432	-	279	314	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.6	51.9	0.2	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	113	232	159	916	-	-
HCM Lane V/C Ratio	0.02	-	-	0.079	0.139	0.545	0.058	-	-
HCM Control Delay (s)	9.3	-	-	39.6	23	51.9	9.2	-	-
HCM Lane LOS	A	-	-	E	C	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.5	2.8	0.2	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	24	8	0	14
Future Vol, veh/h	23	0	24	8	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	27	9	0	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	89	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1601	-	917	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1601	-	901	1056
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	949	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.5	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1601	-
HCM Lane V/C Ratio	0.015	-	-	0.017	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	0	621	722	7
Future Vol, veh/h	0	17	0	621	722	7
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	19	0	690	802	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	405	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	601	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	601	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	601	-	-
HCM Lane V/C Ratio	-	0.031	-	-
HCM Control Delay (s)	-	11.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	13.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	5	28	37	6	69	151	602	13	12	742	95
Future Vol, veh/h	33	5	28	37	6	69	151	602	13	12	742	95
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	-	140	-	-	60	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	25	40	15	0	17	3	15	8	15	8	8	12
Mvmt Flow	33	5	28	37	6	69	151	602	13	12	742	95

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1372	1684	743	1743	1773	309	837	0	0	616	0	0
Stage 1	766	766	-	912	912	-	-	-	-	-	-	-
Stage 2	606	918	-	831	861	-	-	-	-	-	-	-
Critical Hdwy	7.675	7.1	6.425	7.3	6.755	6.945	4.325	-	-	4.22	-	-
Critical Hdwy Stg 1	6.475	6.1	-	6.5	5.755	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.875	6.1	-	6.1	5.755	-	-	-	-	-	-	-
Follow-up Hdwy	3.7375	4.38	3.4425	3.5	4.1615	3.3285	2.3425	-	-	2.276	-	-
Pot Cap-1 Maneuver	97	70	388	62	73	685	729	-	-	928	-	-
Stage 1	352	345	-	299	326	-	-	-	-	-	-	-
Stage 2	408	288	-	367	345	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	55	388	45	57	684	729	-	-	927	-	-
Mov Cap-2 Maneuver	67	55	-	45	57	-	-	-	-	-	-	-
Stage 1	279	341	-	237	258	-	-	-	-	-	-	-
Stage 2	284	228	-	331	341	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.4	168	2.2	0.1
HCM LOS	F	F		

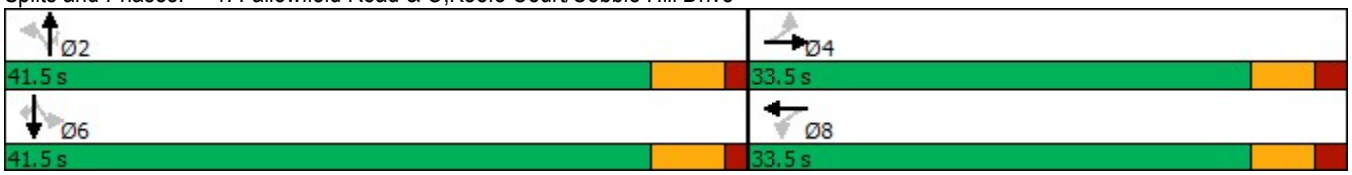
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	729	-	-	67	202	109	927	-	-
HCM Lane V/C Ratio	0.207	-	-	0.493	0.163	1.028	0.013	-	-
HCM Control Delay (s)	11.2	-	-	102.5	26.3	168	8.9	-	-
HCM Lane LOS	B	-	-	F	D	F	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	2	0.6	6.7	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	5	28	37	6	69	151	602	13	12	742	95
Future Volume (vph)	33	5	28	37	6	69	151	602	13	12	742	95
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			1.00				0.98	1.00		
Frt		0.873			0.917				0.850			0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1383	1313	0	0	1598	0	1503	1685	1345	1601	1685	1381
Flt Permitted	0.823				0.877		0.321			0.402		
Satd. Flow (perm)	1198	1313	0	0	1424	0	508	1685	1316	677	1685	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			69				36			51
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			7.0	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	40%	15%	0%	17%	3%	15%	8%	15%	8%	8%	12%
Adj. Flow (vph)	33	5	28	37	6	69	151	602	13	12	742	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	33	0	0	112	0	151	602	13	12	742	95
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	7.7	7.7			7.7		43.1	43.1	43.1	43.1	43.1	43.1
Actuated g/C Ratio	0.13	0.13			0.13		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.21	0.17			0.45		0.40	0.48	0.01	0.02	0.60	0.09

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	24.3	12.0			16.7		9.1	6.5	0.6	4.0	8.2	2.5
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	12.0			16.7		9.1	6.5	0.6	4.0	8.2	2.5
LOS	C	B			B		A	A	A	A	A	A
Approach Delay		18.2			16.7			6.9			7.5	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	3.0	0.5			4.0		5.5	23.8	0.0	0.3	33.8	1.2
Queue Length 95th (m)	9.2	6.3			15.1		20.7	54.2	0.6	1.8	79.0	5.6
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	578	648			722		375	1244	981	499	1244	1033
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05			0.16		0.40	0.48	0.01	0.02	0.60	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 58.3			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	80	172	0	41
Future Vol, veh/h	26	0	80	172	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	80	172	0	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	358	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1601	-	644	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1601	-	609	1056
Mov Cap-2 Maneuver	-	-	-	-	609	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1601	-
HCM Lane V/C Ratio	0.039	-	-	0.05	-
HCM Control Delay (s)	8.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	0	768	787	25
Future Vol, veh/h	0	36	0	768	787	25
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	36	0	768	787	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	787	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	395	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	395	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	395	-	-
HCM Lane V/C Ratio	-	0.091	-	-
HCM Control Delay (s)	-	15	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	35.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	7	118	23	5	50	70	768	47	48	807	28
Future Vol, veh/h	117	7	118	23	5	50	70	768	47	48	807	28
Conflicting Peds, #/hr	0	0	2	2	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	50	-	-	-	-	-	140	-	-	60	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	12	0	9	9	20	4	0	3	2	2	5	8
Mvmt Flow	117	7	118	23	5	50	70	768	47	48	807	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1430	1858	809	1914	1863	408	835	0	0	815	0	0
Stage 1	903	903	-	932	932	-	-	-	-	-	-	-
Stage 2	527	955	-	982	931	-	-	-	-	-	-	-
Critical Hdwy	7.48	6.5	6.335	7.435	6.8	6.96	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.28	5.5	-	6.635	5.8	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.68	5.5	-	6.235	5.8	-	-	-	-	-	-	-
Follow-up Hdwy	3.614	4	3.3855	3.5855	4.19	3.338	2.2	-	-	2.219	-	-
Pot Cap-1 Maneuver	~ 96	74	366	43	62	589	807	-	-	810	-	-
Stage 1	314	359	-	277	314	-	-	-	-	-	-	-
Stage 2	482	339	-	287	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 73	64	365	24	53	589	807	-	-	810	-	-
Mov Cap-2 Maneuver	~ 73	64	-	24	53	-	-	-	-	-	-	-
Stage 1	287	338	-	253	287	-	-	-	-	-	-	-
Stage 2	396	310	-	179	295	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	217.9	252.1	0.8	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	73	289	69	810	-	-
HCM Lane V/C Ratio	0.087	-	-	1.603	0.433	1.13	0.059	-	-
HCM Control Delay (s)	9.9	-	-	$ 422.2	26.6	252.1	9.7	-	-
HCM Lane LOS	A	-	-	F	D	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	9.9	2.1	6	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

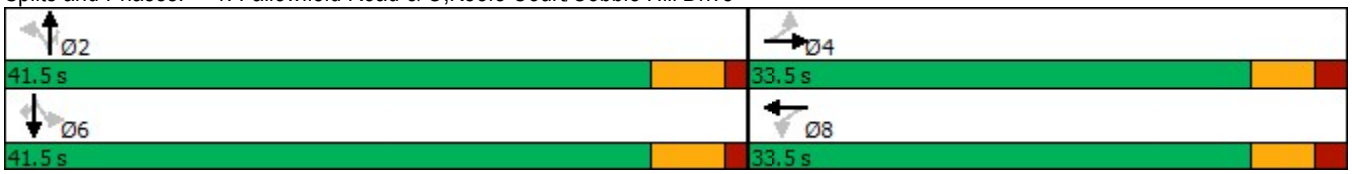
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	7	118	23	5	50	70	768	47	48	807	28
Future Volume (vph)	117	7	118	23	5	50	70	768	47	48	807	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			0.99							
Frt		0.858			0.913				0.850			0.850
Flt Protected	0.950				0.985		0.950			0.950		
Satd. Flow (prot)	1544	1409	0	0	1516	0	1729	1767	1517	1695	1733	1432
Flt Permitted	0.706				0.863		0.249			0.273		
Satd. Flow (perm)	1147	1409	0	0	1327	0	453	1767	1517	487	1733	1432
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			50				47			36
Link Speed (k/h)		50			50			60			80	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			5.2	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	0%	9%	9%	20%	4%	0%	3%	2%	2%	5%	8%
Adj. Flow (vph)	117	7	118	23	5	50	70	768	47	48	807	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	125	0	0	78	0	70	768	47	48	807	28
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	11.0	11.0			10.8		37.1	37.1	37.1	37.1	37.1	37.1
Actuated g/C Ratio	0.20	0.20			0.20		0.68	0.68	0.68	0.68	0.68	0.68

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.50	0.33			0.26		0.23	0.64	0.04	0.15	0.68	0.03
Control Delay	28.7	7.8			12.0		8.7	11.6	2.3	7.2	13.3	2.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	7.8			12.0		8.7	11.6	2.3	7.2	13.3	2.1
LOS	C	A			B		A	B	A	A	B	A
Approach Delay		17.9			12.0			10.9			12.6	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	11.3	0.6			2.5		2.8	46.0	0.0	1.8	51.0	0.0
Queue Length 95th (m)	24.4	11.2			11.2		10.9	105.2	3.5	7.4	#139.0	2.3
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	606	800			724		308	1203	1048	331	1180	986
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.16			0.11		0.23	0.64	0.04	0.15	0.68	0.03

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 54.6
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	194	0	71	31	0	48
Future Vol, veh/h	194	0	71	31	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	194	0	71	31	0	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	367	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1391	-	637	853
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	862	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	604	853
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1391	-
HCM Lane V/C Ratio	0.056	-	-	0.051	-
HCM Control Delay (s)	9.5	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	65	0	890	924	30
Future Vol, veh/h	0	65	0	890	924	30
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	65	0	890	924	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	924	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	329	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	329	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	329	-	-
HCM Lane V/C Ratio	-	0.198	-	-
HCM Control Delay (s)	-	18.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-

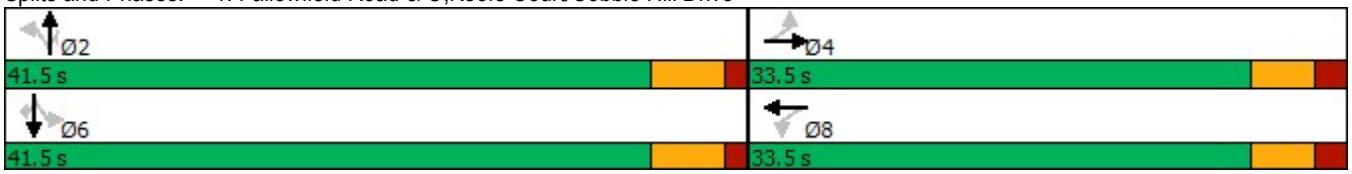
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	5	28	37	6	69	151	674	13	12	946	95
Future Volume (vph)	33	5	28	37	6	69	151	674	13	12	946	95
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			1.00				0.98	1.00		
Frt		0.873			0.917				0.850			0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1383	1313	0	0	1598	0	1503	1685	1345	1601	1685	1381
Flt Permitted	0.823				0.877		0.212			0.360		
Satd. Flow (perm)	1198	1313	0	0	1424	0	336	1685	1316	606	1685	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			69				36			40
Link Speed (k/h)		50			50			60			80	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			5.2	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	40%	15%	0%	17%	3%	15%	8%	15%	8%	8%	12%
Adj. Flow (vph)	33	5	28	37	6	69	151	674	13	12	946	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	33	0	0	112	0	151	674	13	12	946	95
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	7.7	7.7			7.7		43.1	43.1	43.1	43.1	43.1	43.1
Actuated g/C Ratio	0.13	0.13			0.13		0.74	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.21	0.17			0.45		0.61	0.54	0.01	0.03	0.76	0.09

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	24.3	12.0			16.7		22.7	7.2	0.6	4.1	13.6	2.8
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	12.0			16.7		22.7	7.2	0.6	4.1	13.6	2.8
LOS	C	B			B		C	A	A	A	B	A
Approach Delay		18.2			16.7			9.9			12.5	
Approach LOS		B			B			A			B	
Queue Length 50th (m)	3.0	0.5			4.0		7.0	28.7	0.0	0.3	54.8	1.5
Queue Length 95th (m)	9.2	6.3			15.1		#39.8	65.8	0.6	1.9	#155.7	6.0
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	578	648			722		248	1244	981	447	1244	1030
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05			0.16		0.61	0.54	0.01	0.03	0.76	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 58.3			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	80	172	0	41
Future Vol, veh/h	26	0	80	172	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	80	172	0	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	358	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1601	-	644	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1601	-	609	1056
Mov Cap-2 Maneuver	-	-	-	-	609	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1601	-
HCM Lane V/C Ratio	0.039	-	-	0.05	-
HCM Control Delay (s)	8.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	0	842	996	25
Future Vol, veh/h	0	36	0	842	996	25
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	36	0	842	996	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	996	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	299	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	299	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	299	-	-
HCM Lane V/C Ratio	-	0.12	-	-
HCM Control Delay (s)	-	18.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-

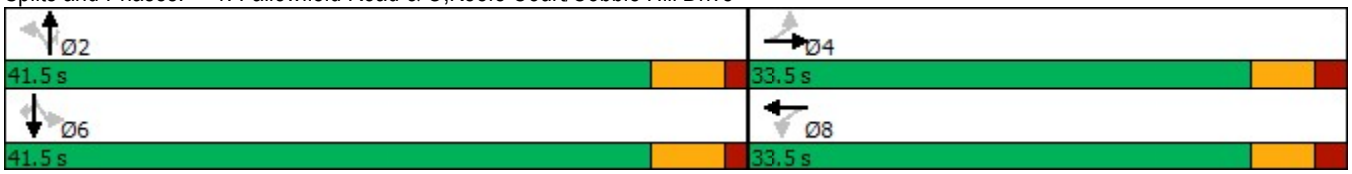
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	7	118	23	5	50	70	942	47	48	890	28
Future Volume (vph)	117	7	118	23	5	50	70	942	47	48	890	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			0.99							
Frt		0.858			0.913				0.850			0.850
Flt Protected	0.950				0.985		0.950			0.950		
Satd. Flow (prot)	1544	1409	0	0	1516	0	1729	1767	1517	1695	1733	1432
Flt Permitted	0.706				0.865		0.208			0.178		
Satd. Flow (perm)	1147	1409	0	0	1331	0	379	1767	1517	318	1733	1432
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		94			50				47			36
Link Speed (k/h)		50			50			80			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			8.3			7.0	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	0%	9%	9%	20%	4%	0%	3%	2%	2%	5%	8%
Adj. Flow (vph)	117	7	118	23	5	50	70	942	47	48	890	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	125	0	0	78	0	70	942	47	48	890	28
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	11.2	11.2			11.0		40.4	40.4	40.4	40.4	40.4	40.4
Actuated g/C Ratio	0.19	0.19			0.19		0.69	0.69	0.69	0.69	0.69	0.69

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.54	0.36			0.27		0.27	0.78	0.04	0.22	0.75	0.03
Control Delay	30.6	10.7			12.2		10.0	16.7	2.3	9.5	15.5	2.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	10.7			12.2		10.0	16.7	2.3	9.5	15.5	2.1
LOS	C	B			B		A	B	A	A	B	A
Approach Delay		20.3			12.2			15.6			14.8	
Approach LOS		C			B			B			B	
Queue Length 50th (m)	11.3	2.8			2.5		2.9	68.3	0.0	1.9	61.9	0.0
Queue Length 95th (m)	24.4	13.8			11.2		12.1	#173.9	3.5	8.9	#161.9	2.3
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	546	720			660		260	1212	1055	218	1189	994
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.17			0.12		0.27	0.78	0.04	0.22	0.75	0.03

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 58.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 88.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	194	0	71	31	0	48
Future Vol, veh/h	194	0	71	31	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	194	0	71	31	0	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	367	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1391	-	637	853
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	862	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	604	853
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1391	-
HCM Lane V/C Ratio	0.056	-	-	0.051	-
HCM Control Delay (s)	9.5	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	65	0	1070	1011	30
Future Vol, veh/h	0	65	0	1070	1011	30
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	65	0	1070	1011	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1011	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	293	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	293	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	293	-	-
HCM Lane V/C Ratio	-	0.222	-	-
HCM Control Delay (s)	-	20.8	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	3	41	28	12	68
Future Vol, veh/h	9	3	41	28	12	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	3	41	28	12	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	147	55	0	0	69	0
Stage 1	55	-	-	-	-	-
Stage 2	92	-	-	-	-	-
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	850	1018	-	-	1545	-
Stage 1	973	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	843	1018	-	-	1545	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	881	1545	-
HCM Lane V/C Ratio	-	-	0.014	0.008	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

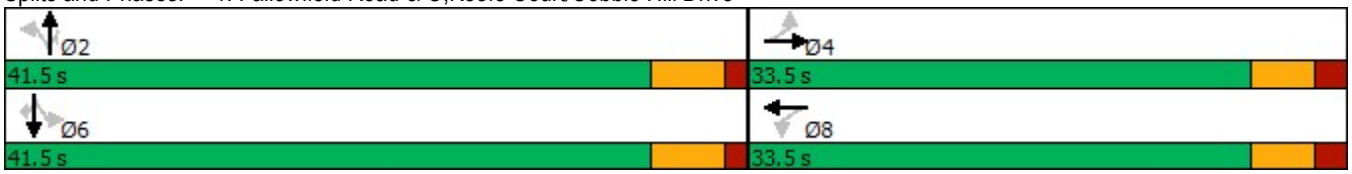
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	5	31	37	6	69	199	602	13	12	758	111
Future Volume (vph)	48	5	31	37	6	69	199	602	13	12	758	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			1.00				0.98	1.00		
Frt		0.871			0.917				0.850			0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1383	1313	0	0	1598	0	1503	1685	1345	1601	1685	1381
Flt Permitted	0.821				0.876		0.309			0.399		
Satd. Flow (perm)	1195	1313	0	0	1422	0	489	1685	1316	672	1685	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			69				36			58
Link Speed (k/h)		50			50			80			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			8.3			7.0	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	40%	15%	0%	17%	3%	15%	8%	15%	8%	8%	12%
Adj. Flow (vph)	48	5	31	37	6	69	199	602	13	12	758	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	36	0	0	112	0	199	602	13	12	758	111
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	8.1	8.1			8.1		42.3	42.3	42.3	42.3	42.3	42.3
Actuated g/C Ratio	0.14	0.14			0.14		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.29	0.17			0.44		0.56	0.49	0.01	0.02	0.62	0.11

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	25.8	11.6			15.9		15.3	6.8	0.6	4.2	8.8	2.6
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.6			15.9		15.3	6.8	0.6	4.2	8.8	2.6
LOS	C	B			B		B	A	A	A	A	A
Approach Delay		19.7			15.9			8.8			8.0	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	4.4	0.4			3.9		9.1	25.1	0.0	0.3	36.9	1.5
Queue Length 95th (m)	12.0	6.6			15.1		#43.9	55.2	0.6	1.9	84.1	6.3
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	579	652			724		356	1230	970	490	1230	1023
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06			0.15		0.56	0.49	0.01	0.02	0.62	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 57.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 81.0%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	144	172	0	60
Future Vol, veh/h	26	0	144	172	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	144	172	0	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	486	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	460	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1601	-	544	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1601	-	490	1056
Mov Cap-2 Maneuver	-	-	-	-	490	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	577	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1601	-
HCM Lane V/C Ratio	0.057	-	-	0.09	-
HCM Control Delay (s)	8.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	54	0	816	791	41
Future Vol, veh/h	0	54	0	816	791	41
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	54	0	816	791	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	791	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	393	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	393	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	393	-	-
HCM Lane V/C Ratio	-	0.137	-	-
HCM Control Delay (s)	-	15.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

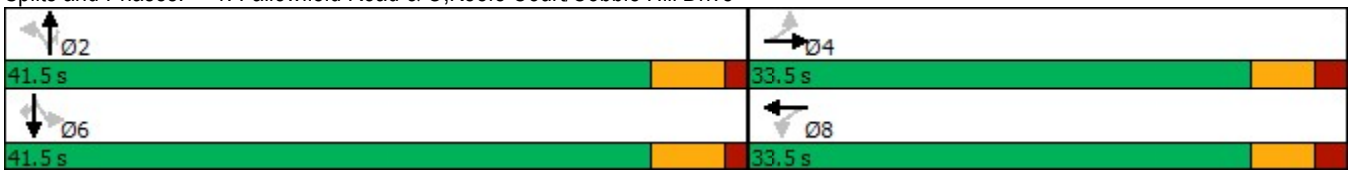
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	7	126	23	5	50	100	768	47	48	818	38
Future Volume (vph)	150	7	126	23	5	50	100	768	47	48	818	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			0.99							
Frt		0.858			0.913				0.850			0.850
Flt Protected	0.950				0.985		0.950			0.950		
Satd. Flow (prot)	1544	1408	0	0	1516	0	1729	1767	1517	1695	1733	1432
Flt Permitted	0.706				0.884		0.221			0.252		
Satd. Flow (perm)	1147	1408	0	0	1360	0	402	1767	1517	450	1733	1432
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		115			50				47			36
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			7.0	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	0%	9%	9%	20%	4%	0%	3%	2%	2%	5%	8%
Adj. Flow (vph)	150	7	126	23	5	50	100	768	47	48	818	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	133	0	0	78	0	100	768	47	48	818	38
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	13.5	13.5			13.5		39.0	39.0	39.0	39.0	39.0	39.0
Actuated g/C Ratio	0.21	0.21			0.21		0.61	0.61	0.61	0.61	0.61	0.61

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.61	0.34			0.24		0.41	0.71	0.05	0.17	0.77	0.04
Control Delay	32.6	8.1			11.0		14.7	14.9	2.7	9.0	17.5	3.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	8.1			11.0		14.7	14.9	2.7	9.0	17.5	3.1
LOS	C	A			B		B	B	A	A	B	A
Approach Delay		21.1			11.0			14.3			16.5	
Approach LOS		C			B			B			B	
Queue Length 50th (m)	14.9	1.6			2.5		5.0	51.2	0.0	2.0	58.3	0.1
Queue Length 95th (m)	30.1	12.3			11.0		21.3	#140.5	3.9	8.8	#157.8	3.7
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	508	688			630		246	1085	950	276	1064	893
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.19			0.12		0.41	0.71	0.05	0.17	0.77	0.04

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 63.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	194	0	112	31	0	89
Future Vol, veh/h	194	0	112	31	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	194	0	112	31	0	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	449	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1391	-	571	853
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	524	853
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1391	-
HCM Lane V/C Ratio	0.104	-	-	0.081	-
HCM Control Delay (s)	9.7	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	106	0	921	933	40
Future Vol, veh/h	0	106	0	921	933	40
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	106	0	921	933	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	933	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	325	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	325	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	325	-	-
HCM Lane V/C Ratio	-	0.326	-	-
HCM Control Delay (s)	-	21.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.4	-	-

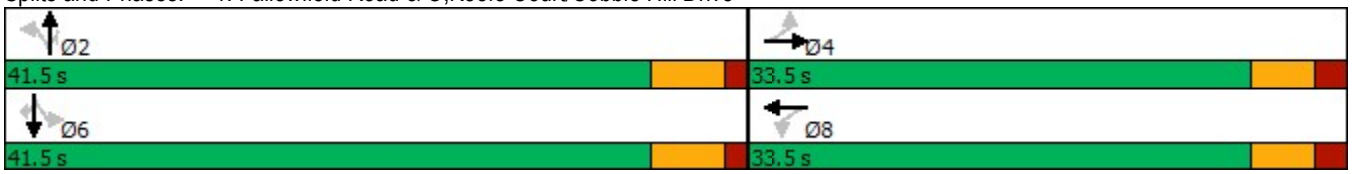
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	5	31	37	6	69	199	674	13	12	962	111
Future Volume (vph)	48	5	31	37	6	69	199	674	13	12	962	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			1.00				0.98	1.00		
Frt		0.871			0.917				0.850			0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1383	1313	0	0	1598	0	1503	1685	1345	1601	1685	1381
Flt Permitted	0.821				0.876		0.198			0.357		
Satd. Flow (perm)	1195	1313	0	0	1422	0	313	1685	1316	601	1685	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			69				36			46
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			7.0	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	40%	15%	0%	17%	3%	15%	8%	15%	8%	8%	12%
Adj. Flow (vph)	48	5	31	37	6	69	199	674	13	12	962	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	36	0	0	112	0	199	674	13	12	962	111
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		27.4	27.4	27.4	27.4	27.4	27.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	8.1	8.1			8.1		42.3	42.3	42.3	42.3	42.3	42.3
Actuated g/C Ratio	0.14	0.14			0.14		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.29	0.17			0.44		0.87	0.55	0.01	0.03	0.78	0.11

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	25.8	11.6			15.9		52.8	7.6	0.6	4.2	14.9	2.9
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.6			15.9		52.8	7.6	0.6	4.2	14.9	2.9
LOS	C	B			B		D	A	A	A	B	A
Approach Delay		19.7			15.9			17.6			13.6	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	4.4	0.4			3.9		14.7	30.3	0.0	0.3	60.2	1.8
Queue Length 95th (m)	12.0	6.6			15.1		#36.4	66.9	0.6	1.9	#161.1	6.8
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	579	652			724		228	1230	970	438	1230	1020
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06			0.15		0.87	0.55	0.01	0.03	0.78	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 57.9			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 92.3%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	144	172	0	60
Future Vol, veh/h	26	0	144	172	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	144	172	0	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	486	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	460	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1601	-	544	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1601	-	490	1056
Mov Cap-2 Maneuver	-	-	-	-	490	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	577	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1601	-
HCM Lane V/C Ratio	0.057	-	-	0.09	-
HCM Control Delay (s)	8.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	54	0	890	999	41
Future Vol, veh/h	0	54	0	890	999	41
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	54	0	890	999	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	999	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	298	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	298	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	298	-	-
HCM Lane V/C Ratio	-	0.181	-	-
HCM Control Delay (s)	-	19.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-

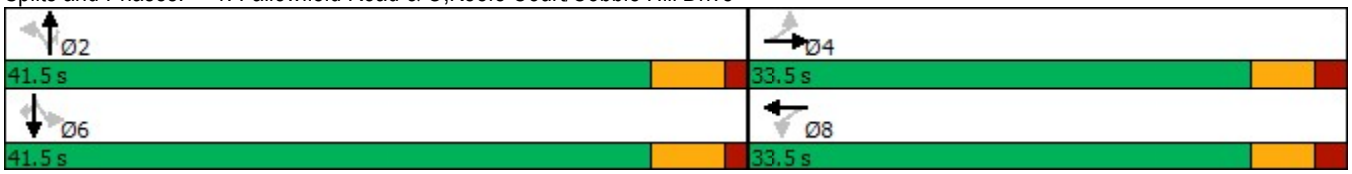
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	7	126	23	5	50	100	942	47	48	900	38
Future Volume (vph)	150	7	126	23	5	50	100	942	47	48	900	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		0.0	0.0		0.0	140.0		0.0	60.0		25.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
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		0.98			0.99							
Frt		0.858			0.913				0.850			0.850
Flt Protected	0.950				0.985		0.950			0.950		
Satd. Flow (prot)	1544	1408	0	0	1516	0	1729	1767	1517	1695	1733	1432
Flt Permitted	0.706				0.884		0.170			0.144		
Satd. Flow (perm)	1147	1408	0	0	1360	0	309	1767	1517	257	1733	1432
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		91			50				47			36
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		187.0			55.0			184.6			116.3	
Travel Time (s)		13.5			4.0			11.1			7.0	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)						1						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	12%	0%	9%	9%	20%	4%	0%	3%	2%	2%	5%	8%
Adj. Flow (vph)	150	7	126	23	5	50	100	942	47	48	900	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	133	0	0	78	0	100	942	47	48	900	38
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	33.5	33.5		33.5	33.5		33.4	33.4	33.4	33.4	33.4	33.4
Total Split (s)	33.5	33.5		33.5	33.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	44.7%	44.7%		44.7%	44.7%		55.3%	55.3%	55.3%	55.3%	55.3%	55.3%
Maximum Green (s)	28.0	28.0		28.0	28.0		36.1	36.1	36.1	36.1	36.1	36.1
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.9	1.9		1.9	1.9		1.3	1.3	1.3	1.3	1.3	1.3
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5			5.5		5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0		21.0	21.0		15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	13.5	13.5			13.5		39.0	39.0	39.0	39.0	39.0	39.0
Actuated g/C Ratio	0.21	0.21			0.21		0.61	0.61	0.61	0.61	0.61	0.61

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.61	0.36			0.24		0.53	0.87	0.05	0.31	0.85	0.04
Control Delay	32.6	10.5			11.0		23.7	23.6	2.7	14.6	21.9	3.1
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	10.5			11.0		23.7	23.6	2.7	14.6	21.9	3.1
LOS	C	B			B		C	C	A	B	C	A
Approach Delay		22.2			11.0			22.7			20.8	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	14.9	3.8			2.5		5.6	75.9	0.0	2.2	70.4	0.1
Queue Length 95th (m)	30.1	14.9			11.0		#31.3	#191.5	3.9	11.9	#181.5	3.7
Internal Link Dist (m)		163.0			31.0			160.6			92.3	
Turn Bay Length (m)	50.0						140.0			60.0		25.0
Base Capacity (vph)	508	674			630		190	1085	950	157	1064	893
Starvation Cap Reductn	0	0			0		0	0	0	0	0	0
Spillback Cap Reductn	0	0			0		0	0	0	0	0	0
Storage Cap Reductn	0	0			0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.20			0.12		0.53	0.87	0.05	0.31	0.85	0.04

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 63.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Fallowfield Road & O;Keefe Court/Cobble Hill Drive



Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	194	0	112	31	0	89
Future Vol, veh/h	194	0	112	31	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	194	0	112	31	0	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	449	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1391	-	571	853
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	524	853
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1391	-
HCM Lane V/C Ratio	0.104	-	-	0.081	-
HCM Control Delay (s)	9.7	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	106	0	1101	1019	40
Future Vol, veh/h	0	106	0	1101	1019	40
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	-	-	-	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	106	0	1101	1019	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1019	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	290	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	290	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	290	-	-
HCM Lane V/C Ratio	-	0.366	-	-
HCM Control Delay (s)	-	24.4	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-

Appendix G – Trip Generation Data

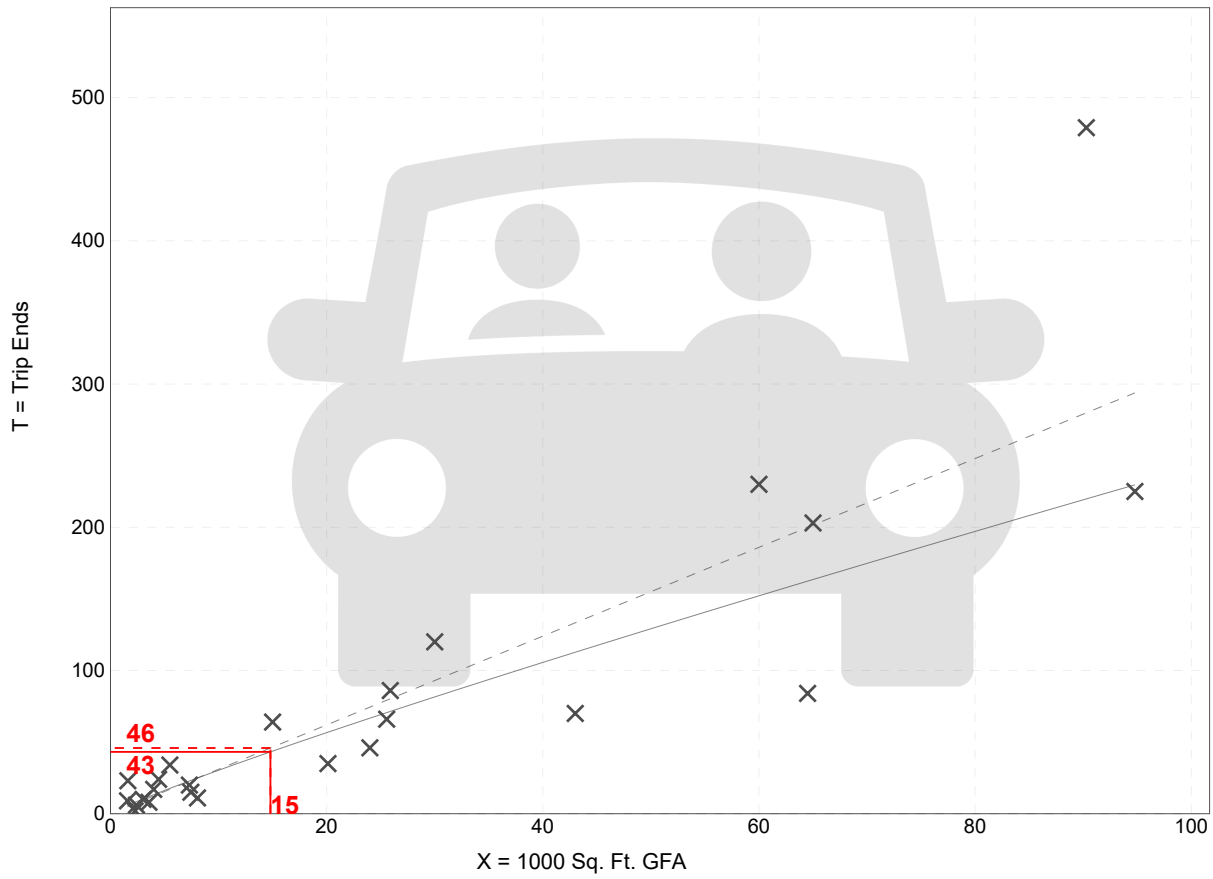
Medical-Dental Office Building - Stand-Alone
(720)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	24
Avg. 1000 Sq. Ft. GFA:	25
Directional Distribution:	79% entering, 21% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.10	0.87 - 14.30	1.49

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.90 Ln(X) + 1.34 **R^2= 0.80**

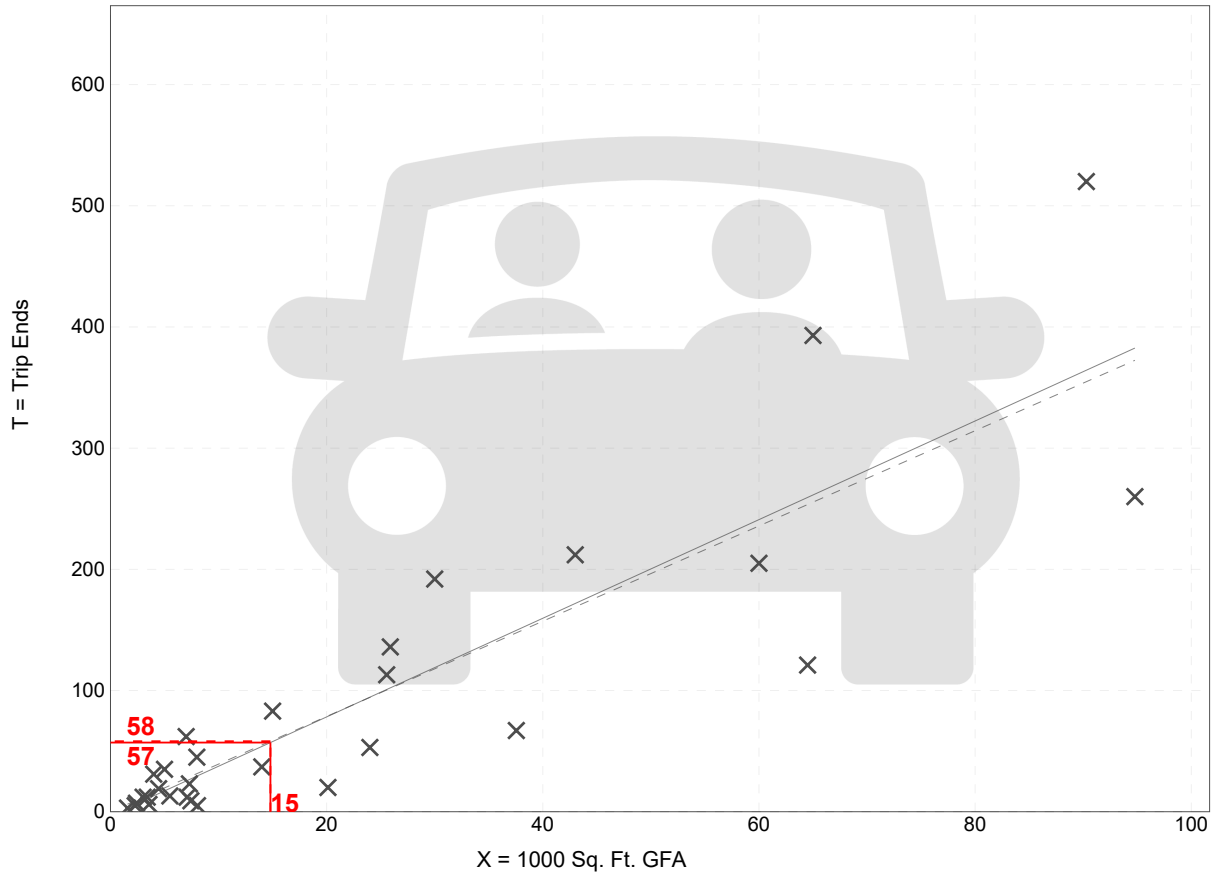
Medical-Dental Office Building - Stand-Alone
(720)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	30
Avg. 1000 Sq. Ft. GFA:	23
Directional Distribution:	30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.93	0.62 - 8.86	1.86

Data Plot and Equation



Fitted Curve Equation: T = 4.07(X) - 3.17

R^2= 0.77

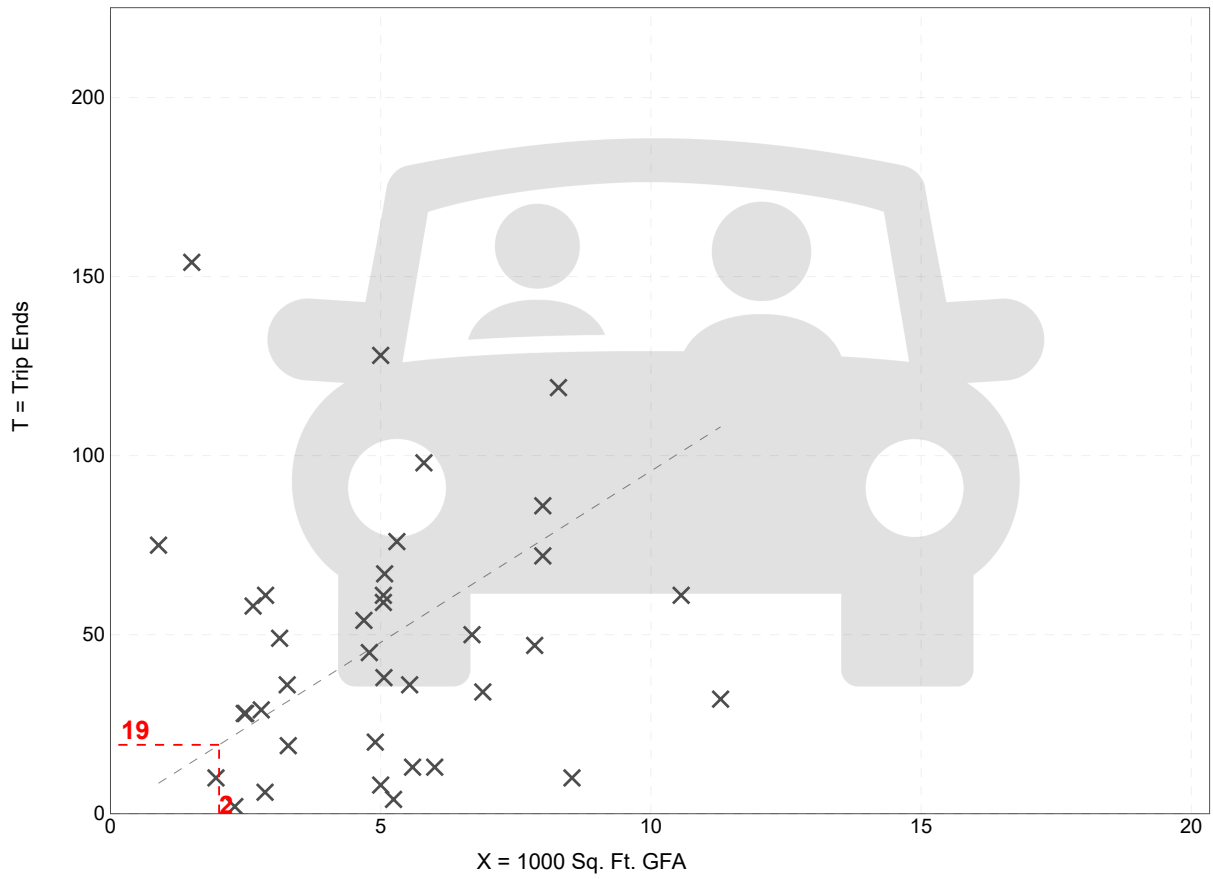
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 37
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

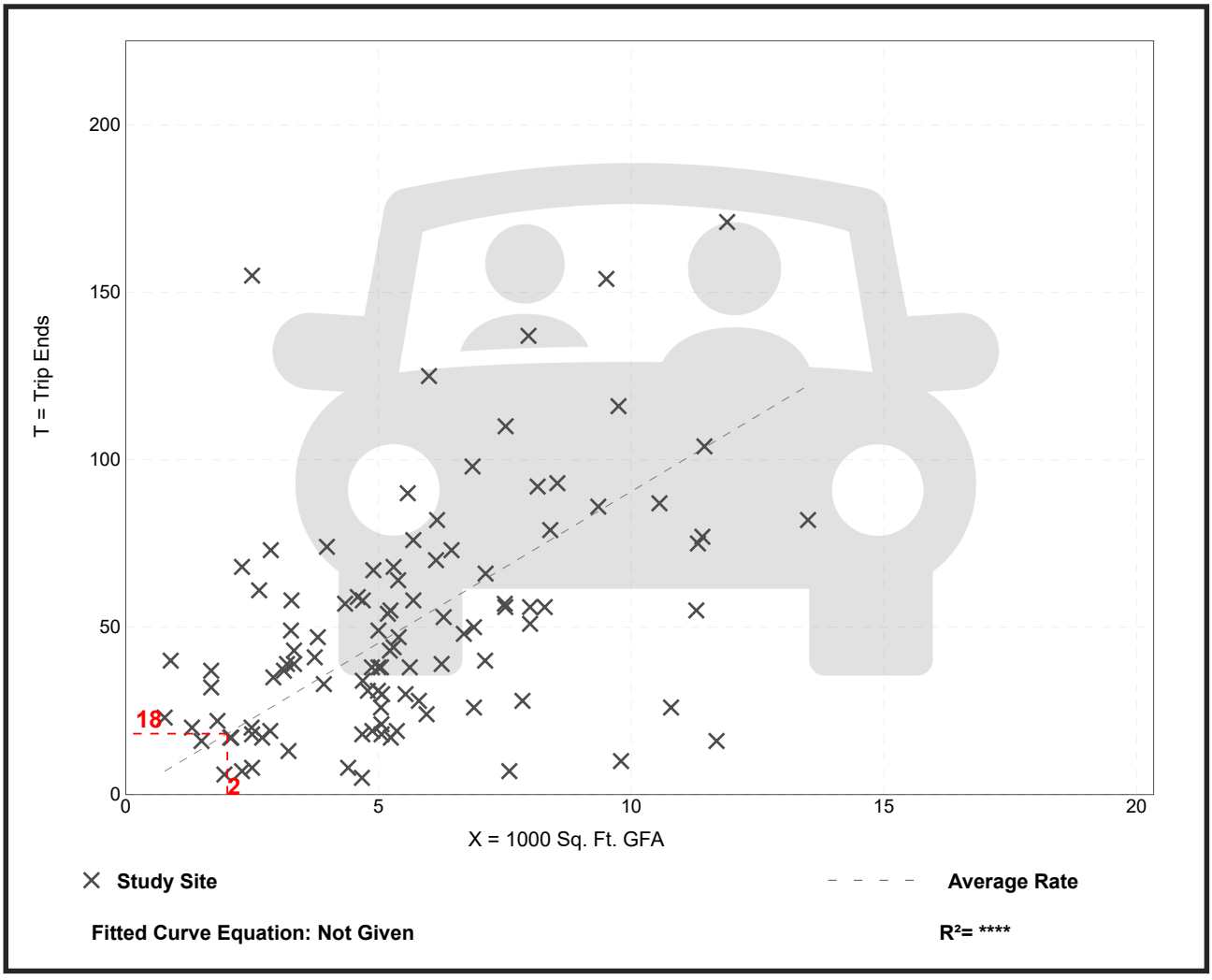
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 104
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



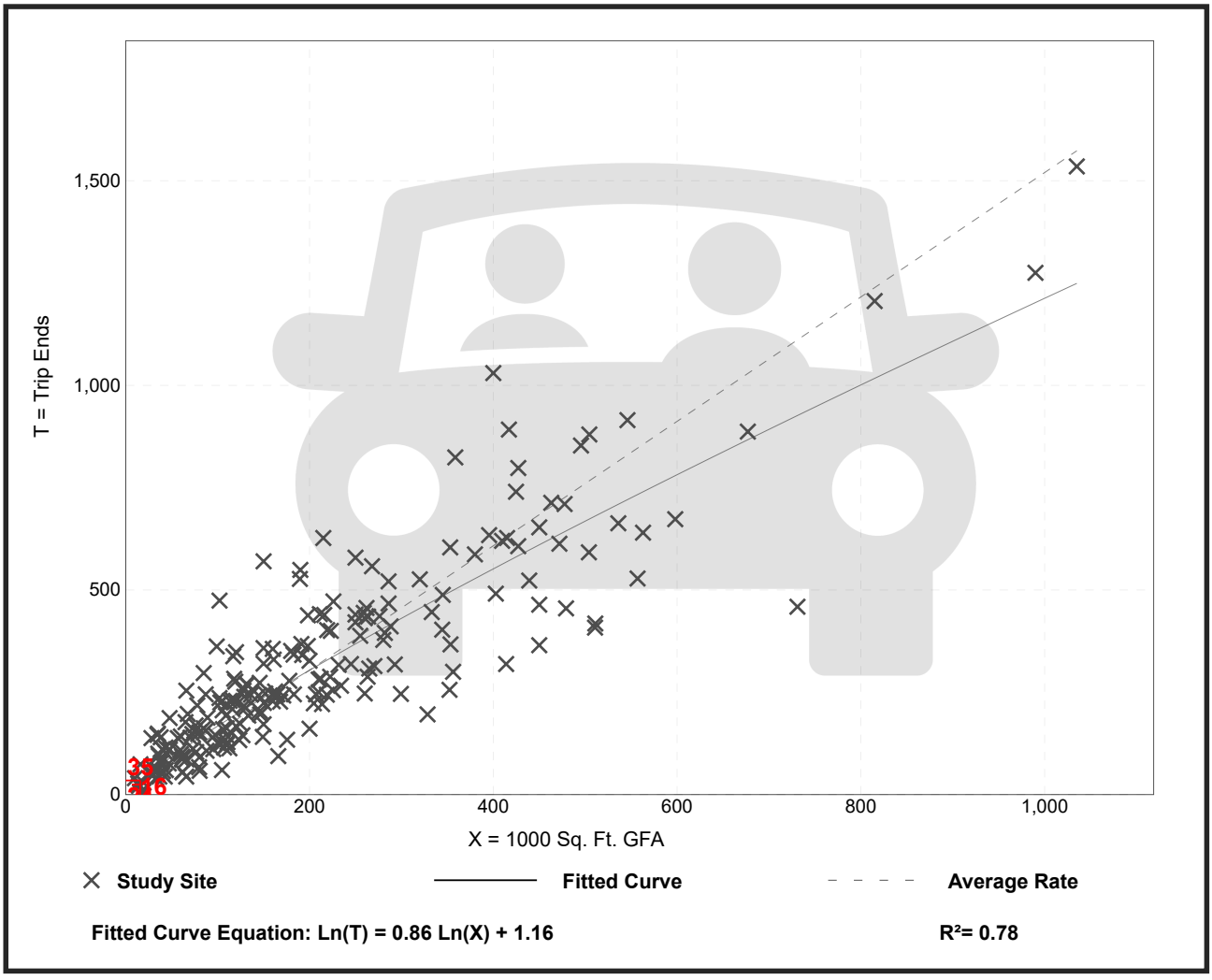
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 221
Avg. 1000 Sq. Ft. GFA: 201
Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.52	0.32 - 4.93	0.58

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.86 Ln(X) + 1.16 **R^2= 0.78**

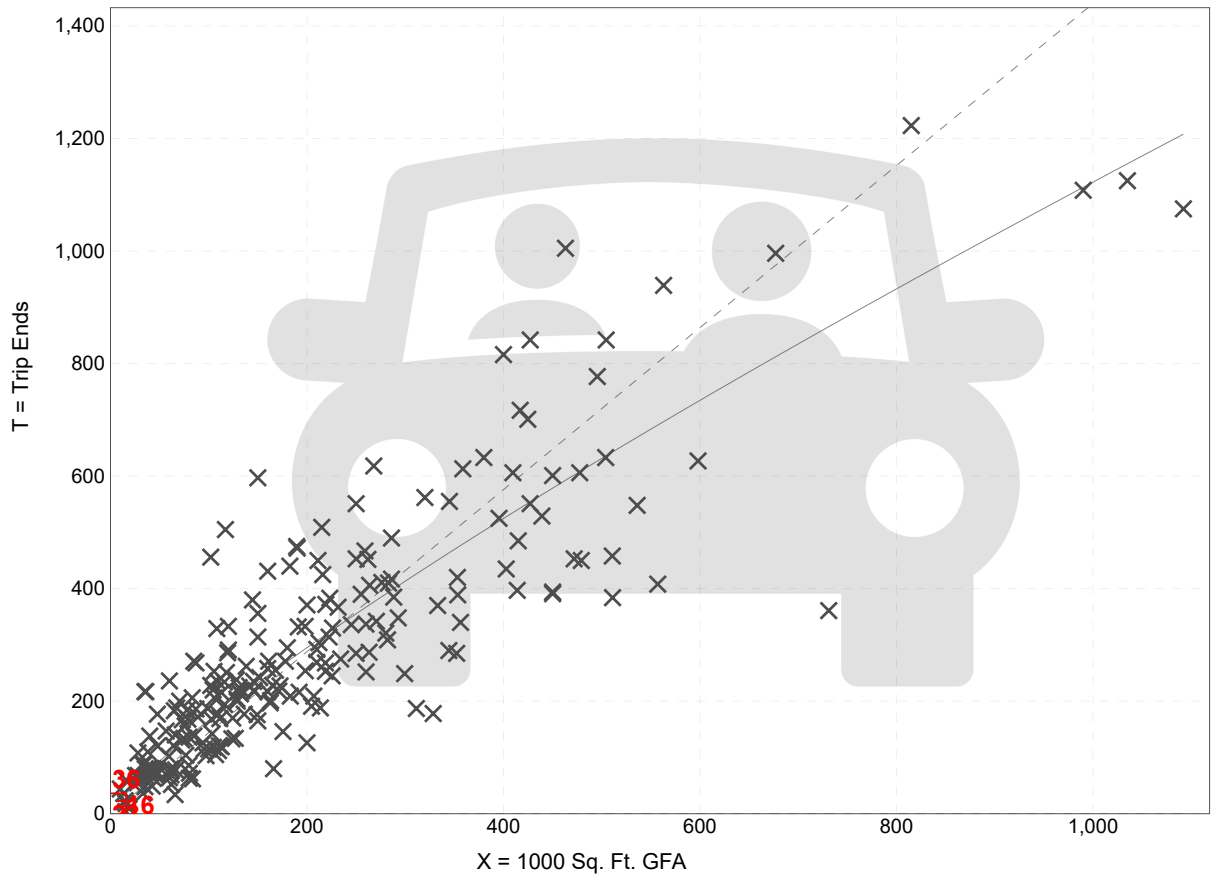
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 232
Avg. 1000 Sq. Ft. GFA: 199
Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.44	0.26 - 6.20	0.60

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.83 Ln(X) + 1.29 **R^2= 0.77**

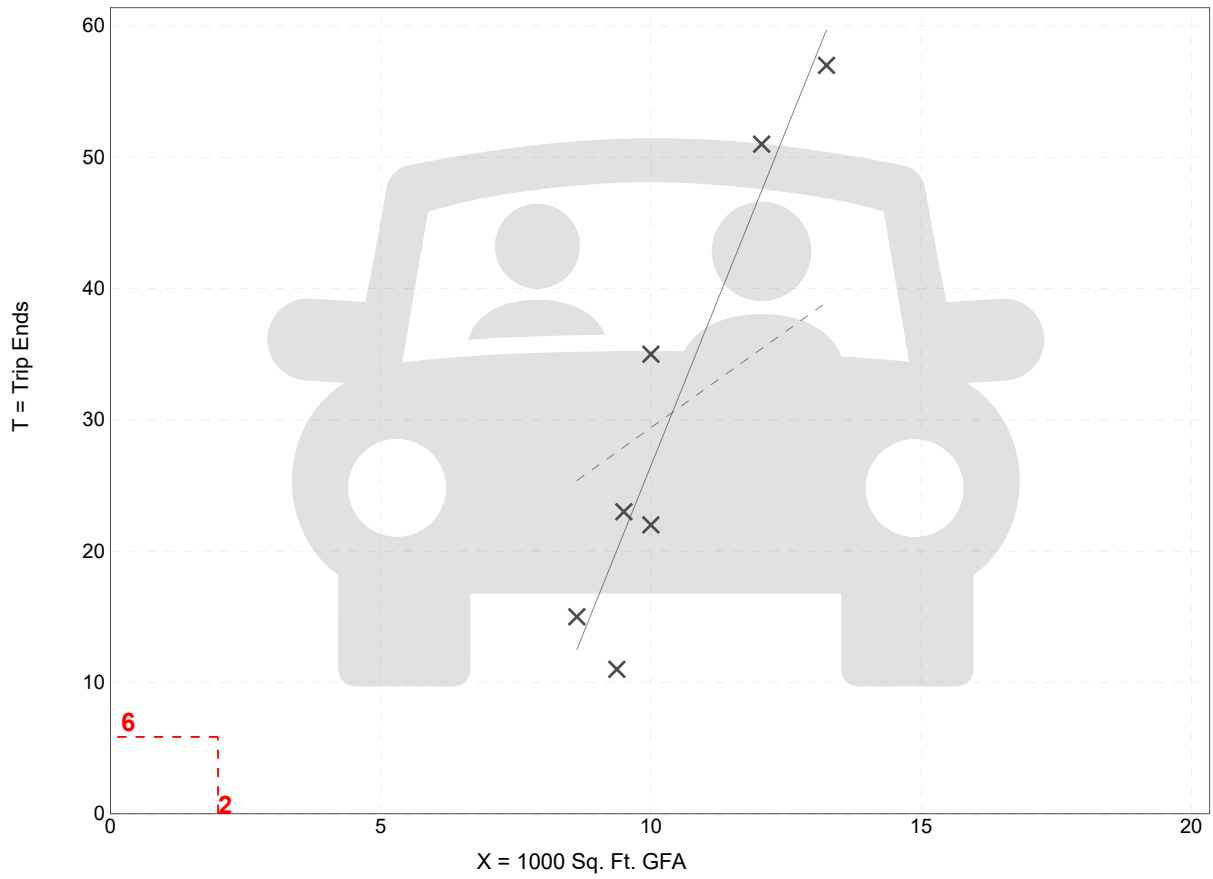
Pharmacy/Drugstore without Drive-Through Window
(880)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	7
Avg. 1000 Sq. Ft. GFA:	10
Directional Distribution:	65% entering, 35% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.94	1.17 - 4.30	1.25

Data Plot and Equation



Fitted Curve Equation: T = 10.22(X) - 75.70

R^2= 0.89

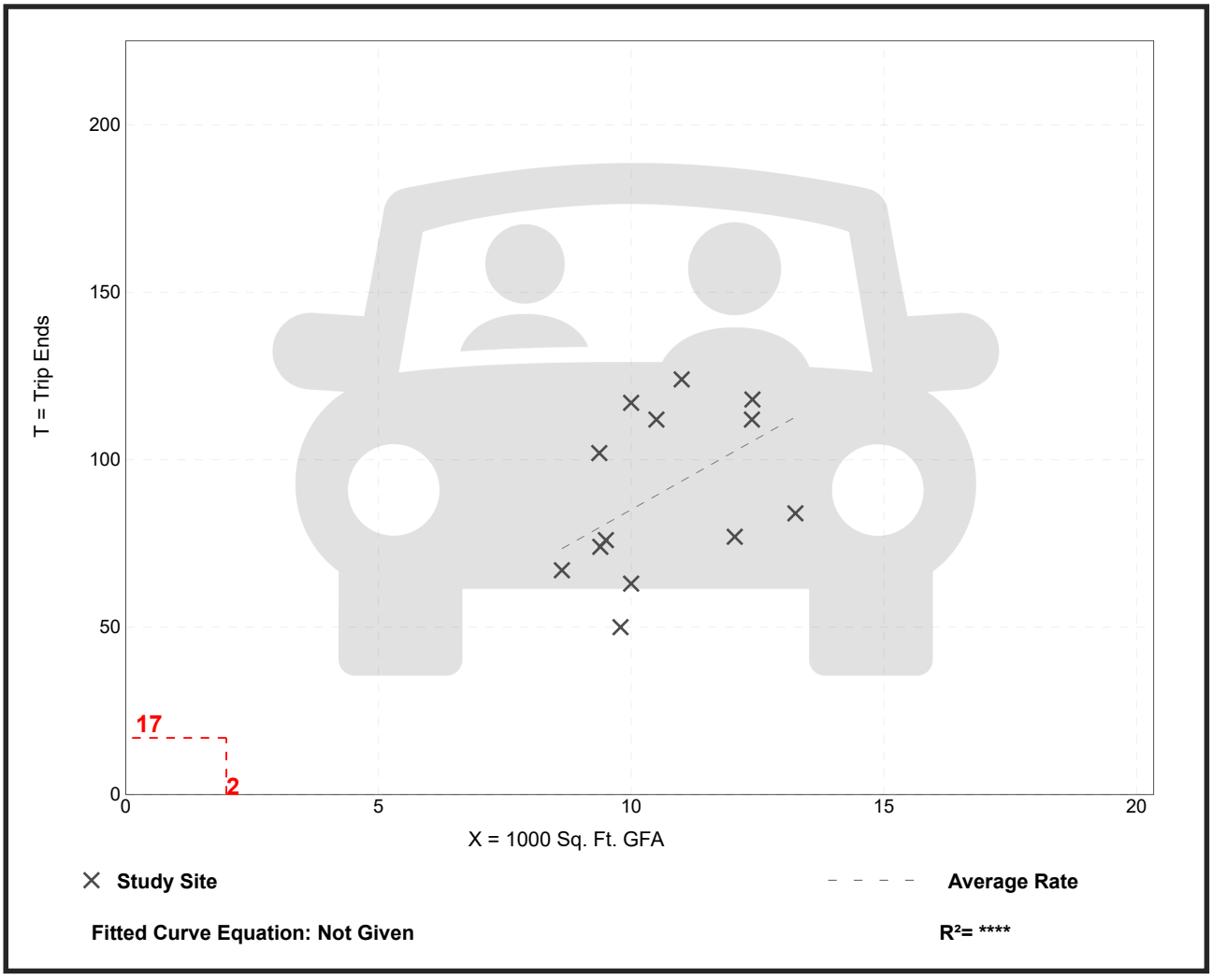
Pharmacy/Drugstore without Drive-Through Window
(880)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 13
Avg. 1000 Sq. Ft. GFA: 11
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.51	5.11 - 11.70	2.16

Data Plot and Equation



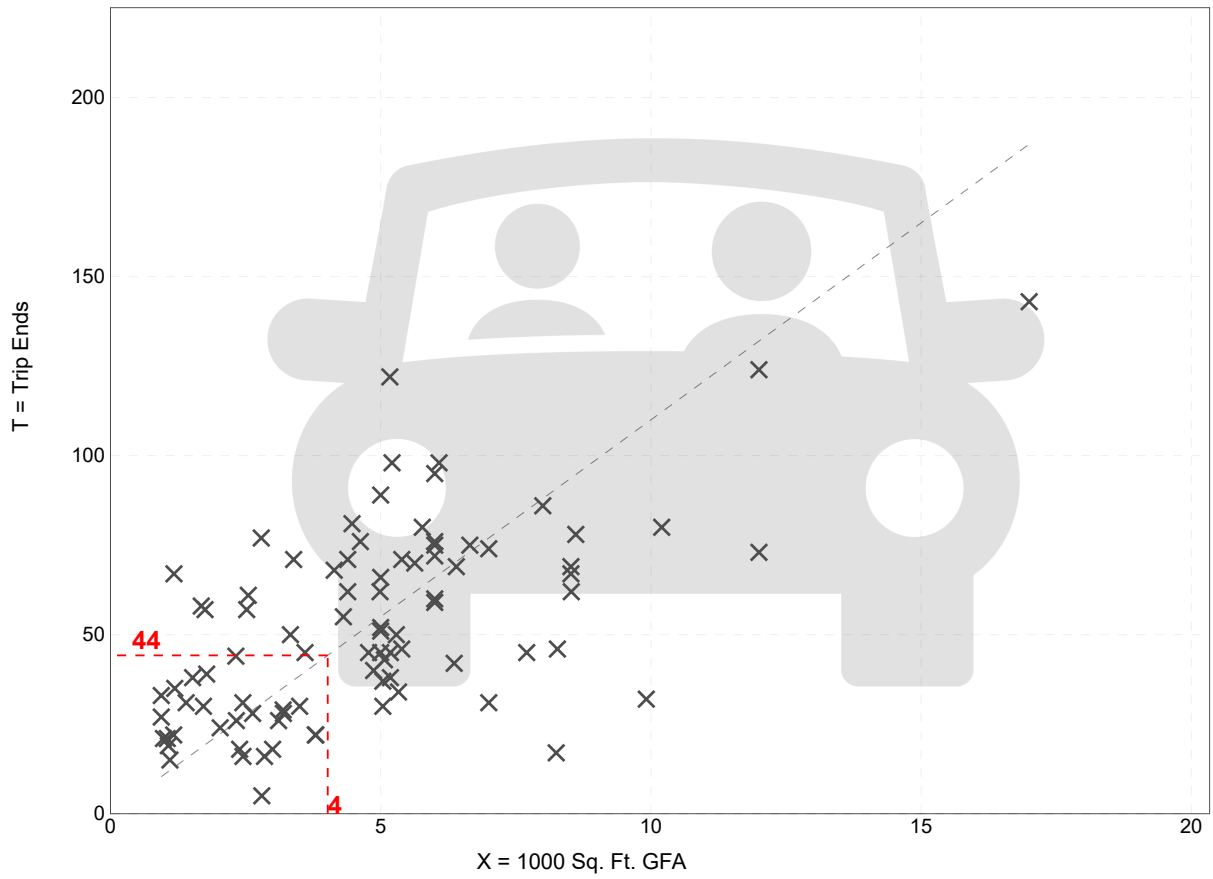
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 89
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.00	1.79 - 57.02	6.08

Data Plot and Equation



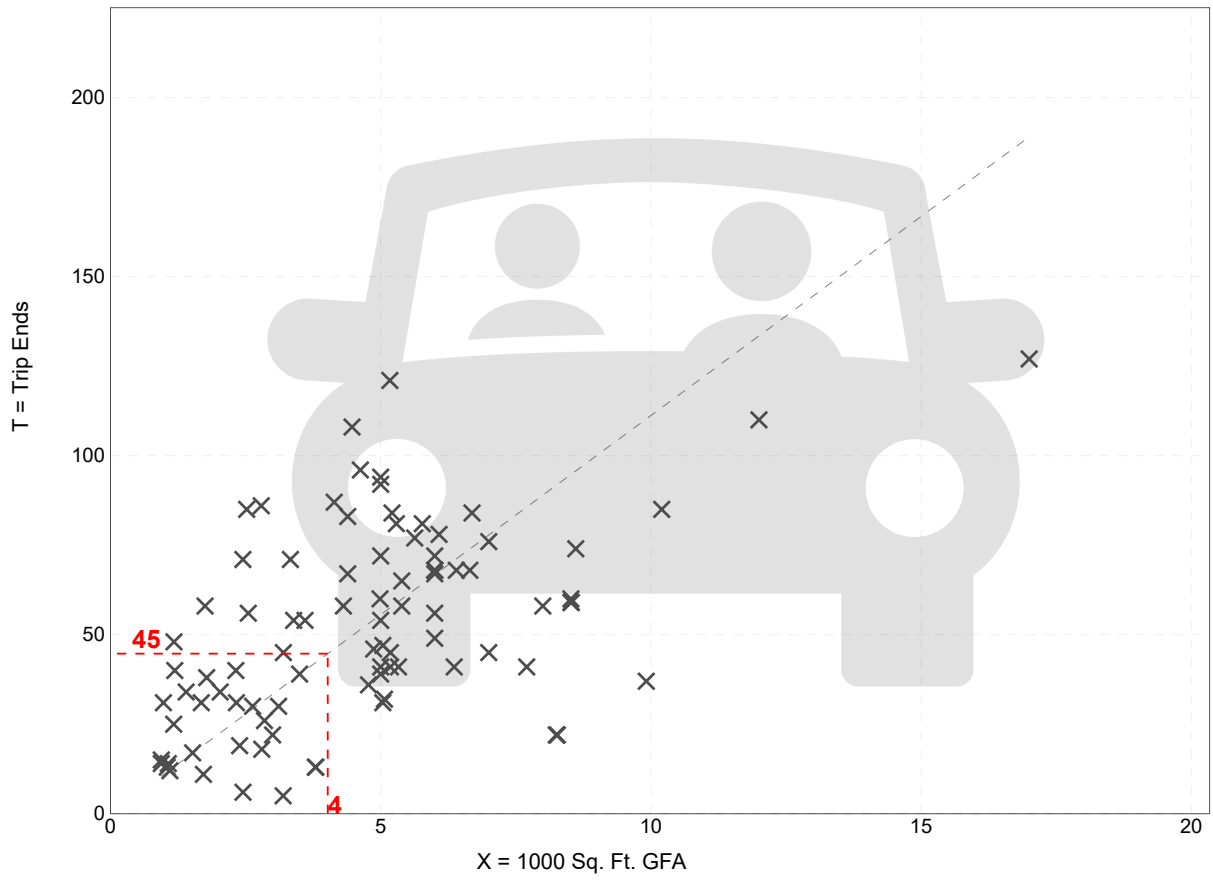
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 90
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.12	1.56 - 40.85	6.28

Data Plot and Equation



Appendix H – TDM Checklists

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

Legend

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

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐ N/A
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑ Sidewalks around building
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☐
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☑
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☑
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☑

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑ curb depression provided to facilitate access to internal drive aisle
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑ racks to be secured and anchored
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ N/A
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐ N/A
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐ N/A
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☑ Pick-up/drop-off at main entrance
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑ Parking meets and does not exceed Zoning By-law requirements
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

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

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances	☑ under consideration
	2.2	**Bicycle skills training**	
		Commuter travel	
BETTER ★	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
	2.3	**Valet bike parking**	
		Visitor travel	
BETTER	2.3.1	Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

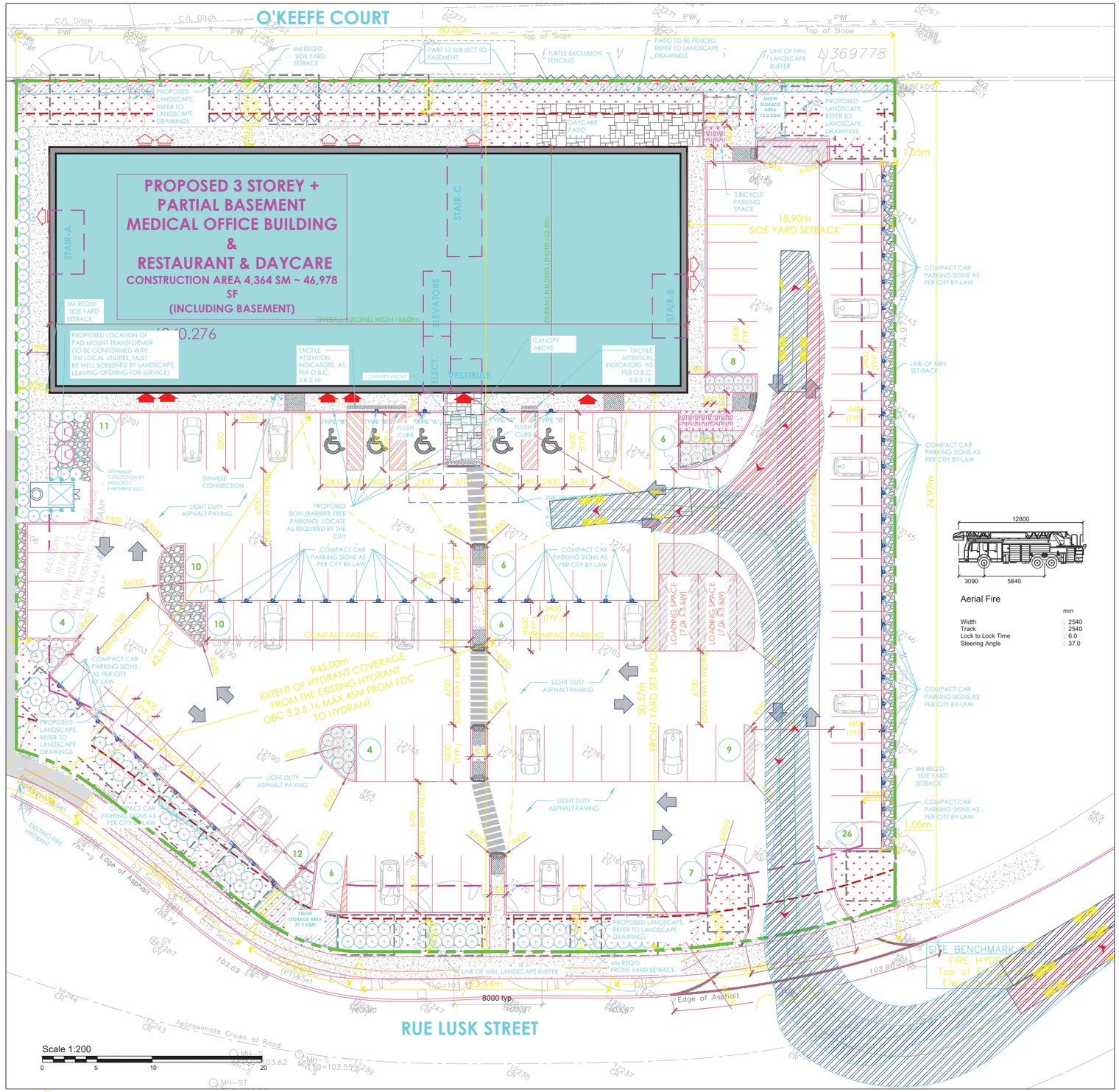
			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☑ under consideration
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☐
BETTER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

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

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

Appendix I – Swept Path Analyses

2 VM1 KEY PLAN N.T.S



2 VM1 SITE PLAN 1:200

1 VM1 SITE STAT N.T.S

SITE PLAN LEGEND

PROPERTY LINE	RECESSED EXTERIOR LIGHT FIXTURE @ SOFFIT & PROTE COCHERE -REFER TO ELECTRICAL DWGS
BUILDING SETBACK LINE	NEW HEAVY DUTY ASPHALT PAVING (REMAINDER OF THE SITE TO RECEIVE LIGHT DUTY ASPHALT PAVING)
LANDSCAPE BUFFER	DECORATIVE NON-SLIP SURFACE PAVING UNDER PORTE COCHERE (REFER TO LANDSCAPE DWGS)
CURB DEPRESSION	LANDSCAPED AREA
ENTRY/ EXIT ACCESS POINTS	POURED CONCRETE PAD AT LOADING AREA & WASTE COLLECTION
EXISTING TOWN HYDRANT	STEEL BOLLARD (REFER TO DETAIL XX.X)
PROPOSED LOCATION OF NEW FIRE HYDRANT W/ STEEL BOLLARDS -REFER TO CIVIL DWGS	PARKING COUNT
FIRE DEPARTMENT CONNECTION	PROPOSED GRADING (REFER TO CIVIL DWGS)
HOSE BIB (REFER TO MECHANICAL DWGS)	CONDENSING UNIT ON 4" CONCRETE PAD (REFER TO MECH DWGS)
PAD MOUNTED HYDRO TRANSFORMER W/ STEEL BOLLARDS	SNOW STORAGE AREA (OWNER TO TAKE NECESSARY PRECAUTIONS W/ SNOW REMOVAL COMPANY)
DOUBLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL DWGS	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE W/ ELECTRICAL OUTLET -REFER TO ELECTRICAL DWGS	

CREDIT NOTES:

THIS SITEPLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE SURVEY FOR THIS PROPERTY. MATAJ ARCHITECTS ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY, OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.

LEGAL LAND DESCRIPTION:

Block 2
REGISTERED PLAN 4M-1634
CITY OF OTTAWA

CREDIT NOTES:

TOPO SURVEYORS INFO:

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850
PHONE: (519) 742-8371
Email: Nepean@aovltd.com

SITE PLAN- GENERAL NOTES

1. ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AN DBOULEVARD AREAS DISTURBED BY THE CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE TOWN
2. A MINIMUM SETBACK OF 1.0m FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR/OWNER TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/ OWNER
3. THE CONTRACTOR/ OWNER IS RESPONSIBLE FOR ALL UTILITY LOCATES AND DAMAGE/ DISTURBANCE DURING CONSTRUCTION.
4. ALL BARRIER-FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C. 3.8.
5. THE OWNER/ CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND BARRIER-FREE SIGNS AS SET OUT IN THE TOWN BY-LAWS AND DESIGN CRITERIA
6. ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE
7. ALL DOWNSPOUTS TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM
8. ALL CONDENSING UNITS TO BE SCREENED ON THE GROUND FLOOR
9. SEPARATE PERMITS ARE REQUIRED FOR ANY SIGNAGE ON THE PROPERTY
10. WHERE POSSIBLE TREES ARE TO BE PROTECTED FROM CONSTRUCTION.

PROPOSED SITE PLAN

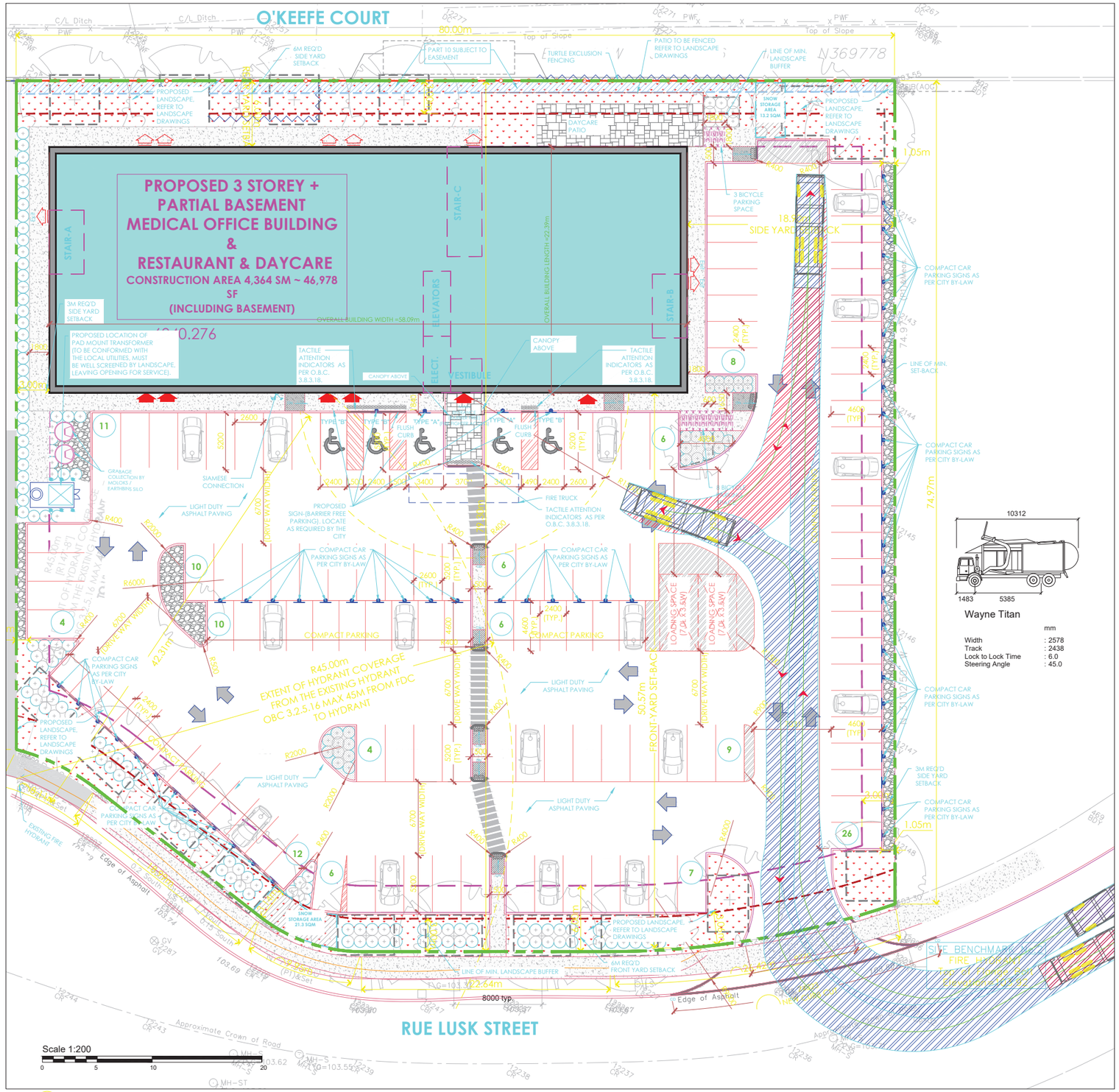
D.A.

AS SHOWN 2024.05.16

ASP-3

ARCHITECTURAL - SPA

2 VM1 KEY PLAN N.T.S



2 VM1 SITE PLAN 1:200

2 VM1 SITE STAT N.T.S

SITE PLAN LEGEND

PROPERTY LINE	RECESSED EXTERIOR LIGHT FIXTURE @ SOFFIT & PROTE COCHERE -REFER TO ELECTRICAL DWGS
BUILDING SETBACK LINE	NEW HEAVY DUTY ASPHALT PAVING (REMAINDER OF THE SITE TO RECEIVE LIGHT DUTY ASPHALT PAVING)
LANDSCAPE BUFFER	DECORATIVE NON-SLIP SURFACE PAVING UNDER PORTE COCHERE (REFER TO LANDSCAPE DWGS)
CURB DEPRESSION	LANDSCAPED AREA
ENTRY/ EXIT ACCESS POINTS	POURED CONCRETE PAD AT LOADING AREA & WASTE COLLECTION
EXISTING TOWN HYDRANT	STEEL BOLLARD (REFER TO DETAIL XX.X)
PROPOSED LOCATION OF NEW FIRE HYDRANT W/ STEEL BOLLARDS -REFER TO CIVIL DWGS	PARKING COUNT
FIRE DEPARTMENT CONNECTION	PROPOSED GRADING (REFER TO CIVIL DWGS)
HOSE BIB (REFER TO MECHANICAL DWGS)	CONDENSING UNIT ON 4" CONCRETE PAD (REFER TO MECH DWGS)
PAD MOUNTED HYDRO TRANSFORMER W/ STEEL BOLLARDS	SNOW STORAGE AREA (OWNER TO TAKE NECESSARY PRECAUTIONS W/ SNOW REMOVAL COMPANY)
DOUBLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL DWGS	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE W/ ELECTRICAL OUTLET -REFER TO ELECTRICAL DWGS	

CREDIT NOTES:

THIS SITEPLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE SURVEY FOR THIS PROPERTY. MATAJ ARCHITECTS ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY, OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.

LEGAL LAND DESCRIPTION:

Block 2
REGISTERED PLAN 4M-1634
CITY OF OTTAWA

CREDIT NOTES:

TOPO SURVEYORS INFO:

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850
PHONE: (519) 742-8371
Email: Nepean@aovltd.com

SITE PLAN- GENERAL NOTES

1 ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AN DBOULEVARD AREAS DISTURBED BY THE CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE TOWN	5 THE OWNER/ CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND BARRIER-FREE SIGNS AS SET OUT IN THE TOWN BY-LAWS AND DESIGN CRITERIA
2 A MINIMUM SETBACK OF 1.0m FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR/OWNER TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/ OWNER	6 ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE
3 THE CONTRACTOR/ OWNER IS RESPONSIBLE FOR ALL UTILITY LOCATES AND DAMAGE/ DISTURBANCE DURING CONSTRUCTION.	7 ALL DOWNSPOUTS TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM
4 ALL BARRIER-FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C. 3.8.	8 ALL CONDENSING UNITS TO BE SCREENED ON THE GROUND FLOOR
	9 SEPARATE PERMITS ARE REQUIRED FOR ANY SIGNAGE ON THE PROPERTY
	10 WHERE POSSIBLE TREES ARE TO BE PROTECTED FROM CONSTRUCTION.

PROPOSED SITE PLAN

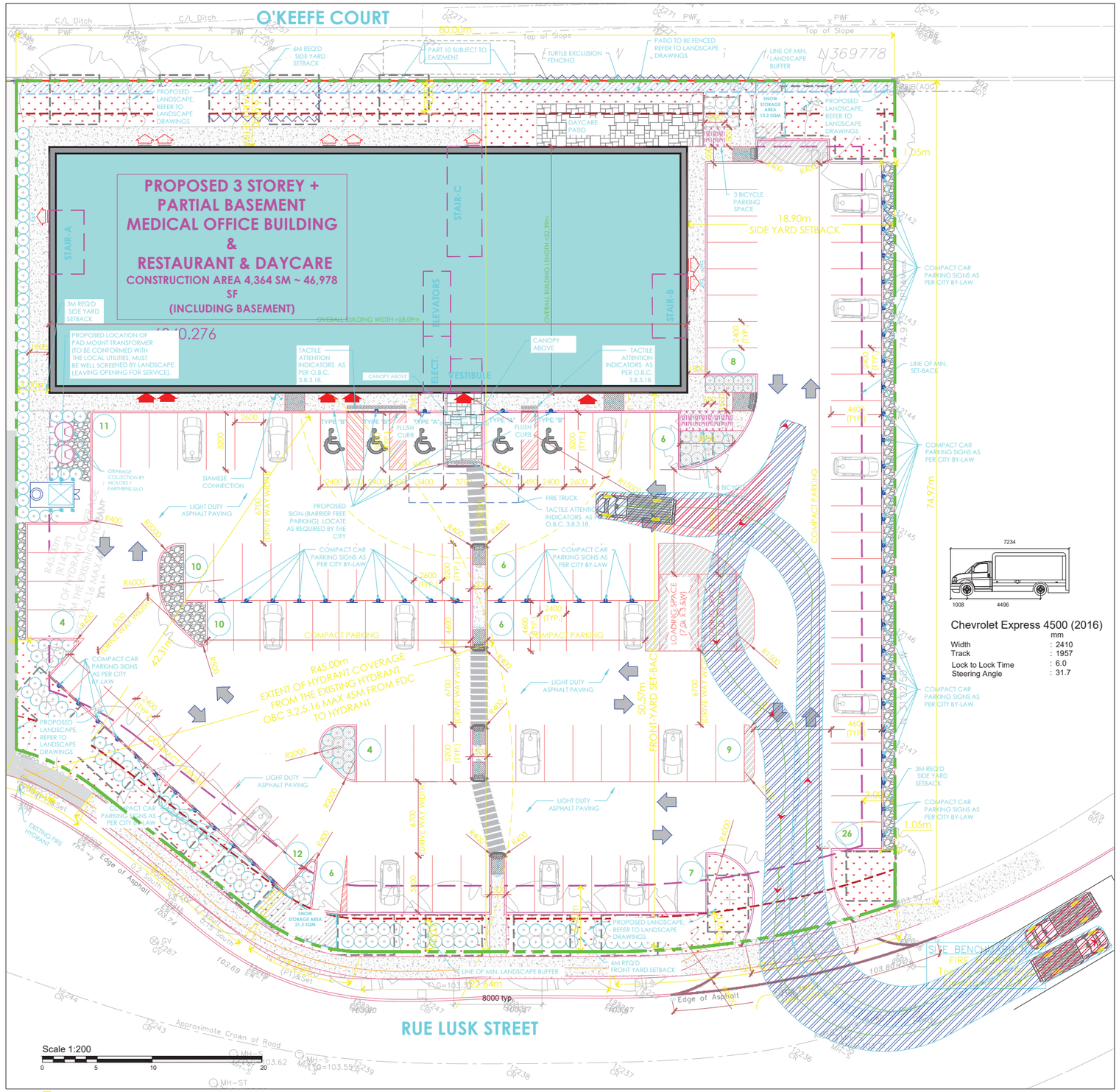
D.A.

AS SHOWN 2024.05.16

ASP-3

ARCHITECTURAL - SPA

2 VM1 KEY PLAN N.T.S



2 VM1 SITE PLAN 1:200

1 VM1 SITE STAT N.T.S

SITE PLAN LEGEND

PROPERTY LINE	RECESSED EXTERIOR LIGHT FIXTURE @ SOFFIT & PROTE COCHERE -REFER TO ELECTRICAL DWGS
BUILDING SETBACK LINE	NEW HEAVY DUTY ASPHALT PAVING (REMAINDER OF THE SITE TO RECEIVE LIGHT DUTY ASPHALT PAVING)
LANDSCAPE BUFFER	DECORATIVE NON-SLIP SURFACE PAVING UNDER PORTE COCHERE (REFER TO LANDSCAPE DWGS)
CURB DEPRESSION	LANDSCAPED AREA
ENTRY/ EXIT ACCESS POINTS	POURED CONCRETE PAD AT LOADING AREA & WASTE COLLECTION
EXISTING TOWN HYDRANT	STEEL BOLLARD (REFER TO DETAIL XX.X)
PROPOSED LOCATION OF NEW FIRE HYDRANT W/ STEEL BOLLARDS -REFER TO CIVIL DWGS	PARKING COUNT
FIRE DEPARTMENT CONNECTION	PROPOSED GRADING (REFER TO CIVIL DWGS)
HOSE BIB (REFER TO MECHANICAL DWGS)	CONDENSING UNIT ON 4" CONCRETE PAD (REFER TO MECH DWGS)
PAD MOUNTED HYDRO TRANSFORMER W/ STEEL BOLLARDS	SNOW STORAGE AREA (OWNER TO TAKE NECESSARY PRECAUTIONS W/ SNOW REMOVAL COMPANY)
DOUBLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL DWGS	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE W/ ELECTRICAL OUTLET -REFER TO ELECTRICAL DWGS	

CREDIT NOTES:

THIS SITEPLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE SURVEY FOR THIS PROPERTY. MATAJ ARCHITECTS ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY, OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.

LEGAL LAND DESCRIPTION:

Block 2
REGISTERED PLAN 4M-1634
CITY OF OTTAWA

CREDIT NOTES:

TOPO SURVEYORS INFO:

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850
PHONE: (519) 742-8371
Email: Nepean@aovltd.com

SITE PLAN- GENERAL NOTES

1	ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AN DBOULEVARD AREAS DISTURBED BY THE CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE TOWN	5	THE OWNER/ CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND BARRIER-FREE SIGNS AS SET OUT IN THE TOWN BY-LAWS AND DESIGN CRITERIA
2	A MINIMUM SETBACK OF 1.0m FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR/OWNER TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/ OWNER	6	ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE
3	THE CONTRACTOR/ OWNER IS RESPONSIBLE FOR ALL UTILITY LOCATES AND DAMAGE/ DISTURBANCE DURING CONSTRUCTION.	7	ALL DOWNSPOUTS TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM
4	ALL BARRIER-FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C. 3.8.	8	ALL CONDENSING UNITS TO BE SCREENED ON THE GROUND FLOOR
		9	SEPARATE PERMITS ARE REQUIRED FOR ANY SIGNAGE ON THE PROPERTY
		10	WHERE POSSIBLE TREES ARE TO BE PROTECTED FROM CONSTRUCTION.

PROPOSED SITE PLAN

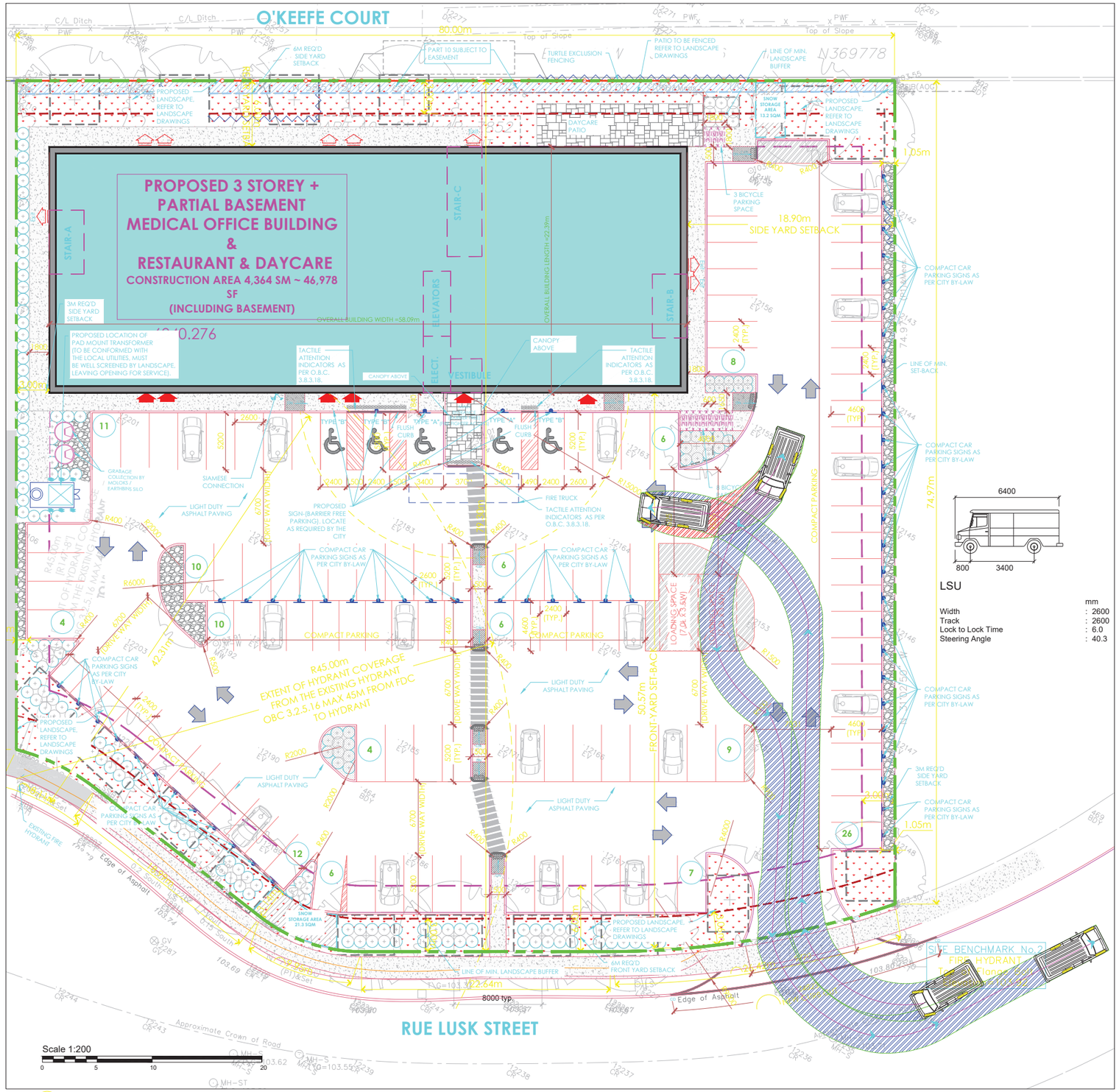
D.A.

AS SHOWN 2024.05.16

ASP-3

ARCHITECTURAL - SPA

2 VM3 KEY PLAN N.T.S



2 VM3 SITE PLAN 1:200

1 VM3 SITE STAT N.T.S

SITE PLAN LEGEND

PROPERTY LINE	RECESSED EXTERIOR LIGHT FIXTURE @ SOFFIT & PROTE COCHERE -REFER TO ELECTRICAL DWGS
BUILDING SETBACK LINE	NEW HEAVY DUTY ASPHALT PAVING (REMAINDER OF THE SITE TO RECEIVE LIGHT DUTY ASPHALT PAVING)
LANDSCAPE BUFFER	DECORATIVE NON-SLIP SURFACE PAVING UNDER PORTE COCHERE (REFER TO LANDSCAPE DWGS)
CURB DEPRESSION	LANDSCAPED AREA
ENTRY/ EXIT ACCESS POINTS	POURED CONCRETE PAD AT LOADING AREA & WASTE COLLECTION
EXISTING TOWN HYDRANT	STEEL BOLLARD (REFER TO DETAIL XX.X)
PROPOSED LOCATION OF NEW FIRE HYDRANT W/ STEEL BOLLARDS -REFER TO CIVIL DWGS	PARKING COUNT
FIRE DEPARTMENT CONNECTION	PROPOSED GRADING (REFER TO CIVIL DWGS)
HOSE BIB (REFER TO MECHANICAL DWGS)	CONDENSING UNIT ON 4" CONCRETE PAD (REFER TO MECH DWGS)
PAD MOUNTED HYDRO TRANSFORMER W/ STEEL BOLLARDS	SNOW STORAGE AREA (OWNER TO TAKE NECESSARY PRECAUTIONS W/ SNOW REMOVAL COMPANY)
DOUBLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE -REFER TO ELECTRICAL DWGS	
SINGLE HEADED LIGHT FIXTURE ON CONCRETE BASE W/ ELECTRICAL OUTLET -REFER TO ELECTRICAL DWGS	

CREDIT NOTES:

THIS SITEPLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE SURVEY FOR THIS PROPERTY. MATAJ ARCHITECTS ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY, OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.

LEGAL LAND DESCRIPTION:

Block 2
REGISTERED PLAN 4M-1634
CITY OF OTTAWA

CREDIT NOTES:

TOPO SURVEYORS INFO:

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850
PHONE: (519) 742-8371
Email: Nepean@aovltd.com

SITE PLAN- GENERAL NOTES

1 ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AN DBOULEVARD AREAS DISTURBED BY THE CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE TOWN	5 THE OWNER/ CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND BARRIER-FREE SIGNS AS SET OUT IN THE TOWN BY-LAWS AND DESIGN CRITERIA
2 A MINIMUM SETBACK OF 1.0m FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR/OWNER TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/ OWNER	6 ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE
3 THE CONTRACTOR/ OWNER IS RESPONSIBLE FOR ALL UTILITY LOCATES AND DAMAGE/ DISTURBANCE DURING CONSTRUCTION.	7 ALL DOWNSPOUTS TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM
4 ALL BARRIER-FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C. 3.8.	8 ALL CONDENSING UNITS TO BE SCREENED ON THE GROUND FLOOR
	9 SEPARATE PERMITS ARE REQUIRED FOR ANY SIGNAGE ON THE PROPERTY
	10 WHERE POSSIBLE TREES ARE TO BE PROTECTED FROM CONSTRUCTION.

PROPOSED SITE PLAN

D.A.

AS SHOWN 2024.05.16

ASP-3

ARCHITECTURAL - SPA

Appendix J – MMLOS Analysis

Multi-Modal Level of Service - Segments Form

Consultant	**Arcadis**	**Project**	**143412 120 Lusk**
Scenario	**Existing and Future Conditions**	**Date**	**2023-06-15**
Comments			

SEGMENTS		Segment	O'Keefe Court	Lusk Street (south side)	Lusk Street (north side)	Fallowfield	Section	Section	Section	Section	Section
			1	2	3	4	5	6	7	8	9
Pedestrian	Sidewalk Width Boulevard Width	-	no sidewalk n/a	≥ 2 m 0.5 - 2 m	no sidewalk n/a	≥ 2 m > 2 m					
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000	> 3000	> 3001					
	Operating Speed On-Street Parking		> 50 to 60 km/h no	> 50 to 60 km/h no	> 60 km/h no	> 60 km/h no					
	Exposure to Traffic PLoS		**F**	**A**	**F**	**D**	-	-	-	-	-
	Effective Sidewalk Width				2.0 m	3.0 m					
	Pedestrian Volume										
	Crowding PLoS		-	-	-	-	-	-	-	-	-
	Level of Service		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**D**	Mixed Traffic	Mixed Traffic	Physically Separated	Physically Separated					
	Number of Travel Lanes		≤ 2 (no centreline)	≤ 2 (no centreline)							
	Operating Speed		≥ 50 to 60 km/h	≥ 50 to 60 km/h							
	# of Lanes & Operating Speed LoS		**D**	**D**	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width										
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-
	Bike Lane Blockages										
	Blockage LoS		-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	< 1.8 m refuge							
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	≤ 3 lanes							
	Sidestreet Operating Speed		>40 to 50 km/h	>40 to 50 km/h							
	Unsignalized Crossing - Lowest LoS		**B**	**B**	**A**	**A**	-	-	-	-	-
	Level of Service		**D**	**D**	**A**	**A**	**-**	**-**	**-**	**-**	**-**
Transit	Facility Type	**D**				Mixed Traffic					
	Friction or Ratio Transit:Posted Speed					Vt/Vp ≥ 0.8					
	Level of Service		**-**	**-**	**-**	**D**	**-**	**-**	**-**	**-**	**-**
Truck	Truck Lane Width	**B**	> 3.7 m	> 3.7 m	> 3.7 m	> 3.7 m					
	Travel Lanes per Direction		1	1	1	1					
	Level of Service		**B**	**B**	**B**	**B**	**-**	**-**	**-**	**-**	**-**

Multi-Modal Level of Service - Intersections Form

Consultant	Arcadis	Project	143412 120 Lusk St
Scenario	Future Conditions	Date	2025-10-14
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		Fallowfield & O'Keefe / Cobble Hill				Intersection B				Intersection C			
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	7	6	5	3								
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m								
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive								
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control								
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed								
	Ped Signal Leading Interval?	Yes	Yes	Yes	Yes								
	Right Turn Channel	No Channel	No Channel	No Channel	No Channel								
	Corner Radius	10-15m	10-15m	10-15m	10-15m								
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings								
	PETSI Score	**6**	**22**	**39**	**72**								
	Ped. Exposure to Traffic LoS	**F**	**F**	**E**	**C**	-	-	-	-	-	-	-	-
	Cycle Length	75	75	75	75								
	Effective Walk Time	22	22	7	7								
	Average Pedestrian Delay	**19**	**19**	**31**	**31**								
	Pedestrian Delay LoS	**B**	**B**	**D**	**D**	-	-	-	-	-	-	-	-
	Level of Service	**F**	**F**	**E**	**D**	-	-	-	-	-	-	-	-
		F				**-**				**-**			
	Approach From	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Pocket Bike Lane	Mixed Traffic	Mixed Traffic	Mixed Traffic								
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>	≤ 50 m Introduced right turn lane	> 50 m										
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h										
	Cyclist Through Movement	**B**	**F**			-	-	-	-	-	-	-	-
	Separated or Mixed Traffic	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	-	-	-	-	-	-	-	-
	Left Turn Approach	1 lane crossed	2-stage, LT box	No lane crossed	One lane crossed								
	Operating Speed	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h								
	Left Turning Cyclist	**D**	**A**	**C**	**E**	-	-	-	-	-	-	-	-
	Level of Service	**D**	**F**	**C**	**E**	-	-	-	-	-	-	-	-
		F				**-**				**-**			
Transit	Average Signal Delay	≤ 20 sec	≤ 30 sec	≤ 20 sec	≤ 30 sec								
	Level of Service	**C**	**D**	**C**	**D**	-	-	-	-	-	-	-	-
		D				**-**				**-**			
Truck	Effective Corner Radius	10 - 15 m	< 10 m	< 10 m	10 - 15 m								
	Number of Receiving Lanes on Departure from Intersection	1	1	≥ 2	1								
	Level of Service	**E**	**F**	**D**	**E**	-	-	-	-	-	-	-	-
		F				**-**				**-**			
Auto	Volume to Capacity Ratio												
	Level of Service	**-**				**-**				**-**			

Appendix K – Intersection Control Warrants

IBI

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: 120 Lusk Street **Date:** October 13, 2025

Project #: 143412

Location: Fallowfield Road (Major Roadway) at O'Keefe Court/Cobble Hill Drive (Minor Roadway)

Orientation: North/South East/West

Municipality: Ottawa **Scenario:** Future (2027) Background Traffic

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	600	**900**	1905 100%	952 100%	952 100%	952 100%	2166 100%	1083 100%	1083 100%	1083 100%	100%
B. Vehicle volume along minor roads	120	170	120	**170**	290 100%	145 85%	145 85%	145 85%	398 100%	199 100%	199 100%	199 100%	94%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	600	**900**	1615 100%	807 90%	807 90%	807 90%	1768 100%	884 98%	884 98%	884 98%	95%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	196 100%	60 86%	60 86%	60 86%	175 100%	87 100%	87 100%	87 100%	95%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	YES	YES
Justification 2 - Delay to Cross Traffic	YES	

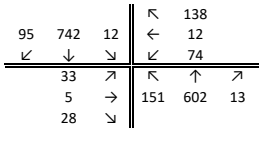
Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	**1080**	1018	94%	84%
	B. Vehicle volume along minor roads (Average Hour)	120	170	144	**204**	172	84%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	**1080**	846	78%	78%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	75	83%	

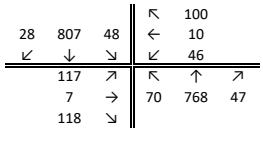
Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

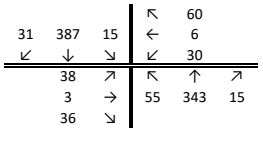
AM Peak Hour Volumes



PM Peak Hour Volumes



Average Hourly Volumes (AHV)



Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00 AM	151	602	13	12	742	95	33	5	28	74	12	138	1
8:00 AM	76	301	7	6	371	48	17	3	14	37	6	69	1
9:00 AM	76	301	7	6	371	48	17	3	14	37	6	69	1
10:00 AM	76	301	7	6	371	48	17	3	14	37	6	69	1
3:00 PM	70	768	47	48	807	28	117	7	118	46	10	100	2
4:00 PM	35	384	24	24	404	14	58	4	59	23	5	50	1
5:00 PM	35	384	24	24	404	14	58	4	59	23	5	50	1
6:00 PM	35	384	24	24	404	14	58	4	59	23	5	50	1

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

2+ Lanes per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

4-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: **Based on Justification 3, the intersection meets the minimum warrants for traffic control signals.**

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

IBI

OTM BOOK 12* - TRAFFIC SIGNAL WARRANT

Project: 120 Lusk Street **Date:** October 13, 2025

Project #: 143412

Location: Fallowfield Road (Major Roadway) at O'Keefe Court/Cobble Hill Drive (Minor Roadway)

Orientation: North/South East/West

Municipality: Ottawa **Scenario:** Future (2027) Total Traffic

Justification 1 - Minimum Vehicle Volume

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, all approaches	480	720	600	**900**	2115 100%	1058 100%	1058 100%	1058 100%	2336 100%	1168 100%	1168 100%	1168 100%	100%
B. Vehicle volume along minor roads	120	170	120	**170**	421 100%	210 100%	210 100%	210 100%	517 100%	259 100%	259 100%	259 100%	100%

Justification 2 - Delay to Cross Traffic

WARRANT	MINIMUM REQUIREMENT				COMPLIANCE								SECTIONAL PERCENT
	FREE FLOW	RESTR. FLOW	ADJUST. FREE FLOW	ADJUST. RESTR. FLOW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	
A. Vehicle volumes, along artery	480	720	600	**900**	1695 100%	847 94%	847 94%	847 94%	1819 100%	910 100%	910 100%	910 100%	98%
B. Combined vehicle and pedestrian volume crossing artery from minor roads	50	70	50	**70**	278 100%	89 100%	89 100%	89 100%	236 100%	118 100%	118 100%	118 100%	100%

Justification 3 - Volume/Delay Combination

JUSTIFICATION	SATISFIED TO 80% OR MORE?	BOTH SATISFIED TO 80% OR MORE?
Justification 1 - Minimum Vehicular Volume	YES	YES
Justification 2 - Delay to Cross Traffic	YES	

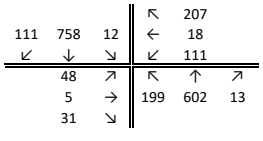
Justification 7 - Projected Volumes

WARRANT	DESCRIPTION	MINIMUM REQUIREMENT				COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	ADJUSTED FREE FLOW	ADJUSTED RESTRICTED FLOW	SECTIONAL AHV	SECTIONAL %	ENTIRE %
1. MINIMUM VEHICULAR VOLUME	A. Vehicle volumes, all approaches (Average Hour)	480	720	720	**1080**	1113	100%	100%
	B. Vehicle volume along minor roads (Average Hour)	120	170	144	**204**	235	100%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volumes, along artery (Average Hour)	480	720	720	**1080**	878	81%	81%
	B. Combined vehicle and pedestrian volume crossing artery from minor roads (Average Hour)	50	75	60	**90**	103	100%	

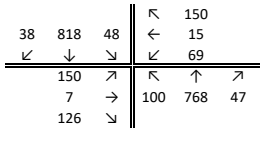
Projected Traffic Volumes:

Average Hourly Volume (AHV) Equation: AHV = (amPHV + pmPHV)/4

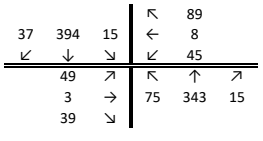
AM Peak Hour Volumes



PM Peak Hour Volumes



Average Hourly Volumes (AHV)



Eight Hour Traffic Volumes:**

Hour	Major Road						Minor Road						Ped*
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00 AM	199	602	13	12	758	111	48	5	31	111	18	207	1
8:00 AM	100	301	7	6	379	56	24	3	16	56	9	104	1
9:00 AM	100	301	7	6	379	56	24	3	16	56	9	104	1
10:00 AM	100	301	7	6	379	56	24	3	16	56	9	104	1
3:00 PM	100	768	47	48	818	38	150	7	126	69	15	150	2
4:00 PM	50	384	24	24	409	19	75	4	63	35	8	75	1
5:00 PM	50	384	24	24	409	19	75	4	63	35	8	75	1
6:00 PM	50	384	24	24	409	19	75	4	63	35	8	75	1

** Number of pedestrians crossing the major road*
*** These are projected 8-hour traffic volumes.*

Notes:

1. Vehicle volume warrant (1A) and (2A) for intersections of roadways having two or more moving lanes in one direction should be 25% higher than the values given above.

2+ Lanes per Direction

2. Warrant values for free flow apply when the 85th percentile speed of artery traffic equals or exceeds 70 km/h or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000. Warrant values for restricted flow apply to large urban communities when the 85th percentile speed of artery traffic does not exceed 70 km/h.

Restricted Flow

3. The lowest sectional percentage governs the entire warrant.

4. For "T" intersections the warrant values for the minor road should be increased by 50% (Warrant 1B only).

4-legged Intersection

5. All flow values for Justification 1 and 2 are to be increased by 20% in the case of new intersections, Justification 3 is to only be used for existing intersections and all flow values for Warrant 1 and Warrant 2 of Justification 7 are to be increased by 20% for existing intersections and by 50% in the case of new intersections.

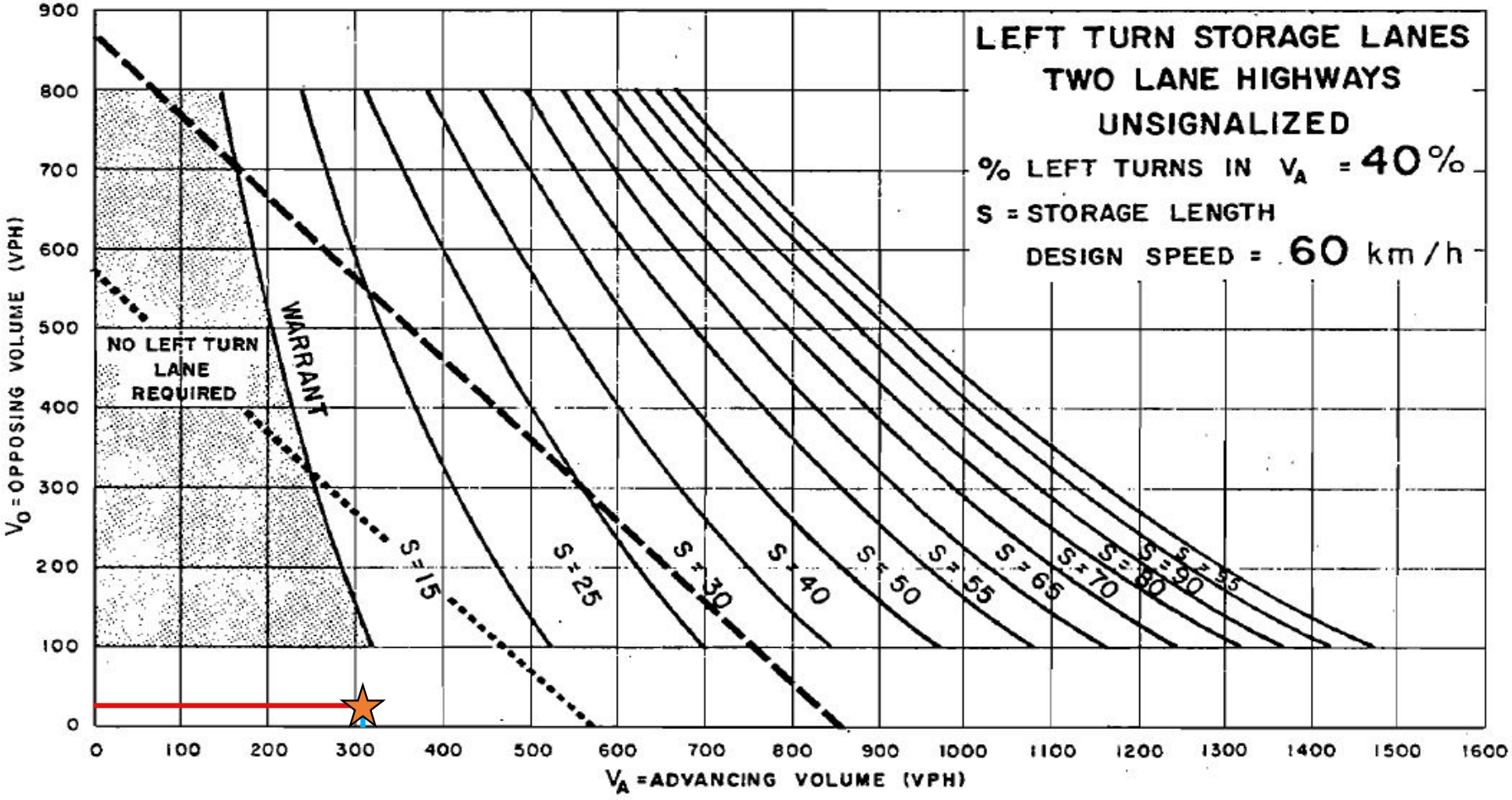
Existing Intersection

6. The crossing volumes are defined as the sum of:
   (a) Left-turns from both minor road approaches.
   (b) The heaviest through volume from the minor road.
   (c) 50% of the heavier left turn movement from major road when both of the following are met:
      (i) the left-turn volume >120 vph
      (ii) the left-turn volume plus the opposing volume >720 vph
   (d) Pedestrians crossing the main road.

CONCLUSION: **Based on Justification 1, 3 & 7, the intersection meets the minimum warrants for traffic control signals.**

* "Ontario Traffic Manual, Book 12 (March 2012)", Ontario Ministry of Transportation.

Appendix L – Auxiliary Lane Analyses



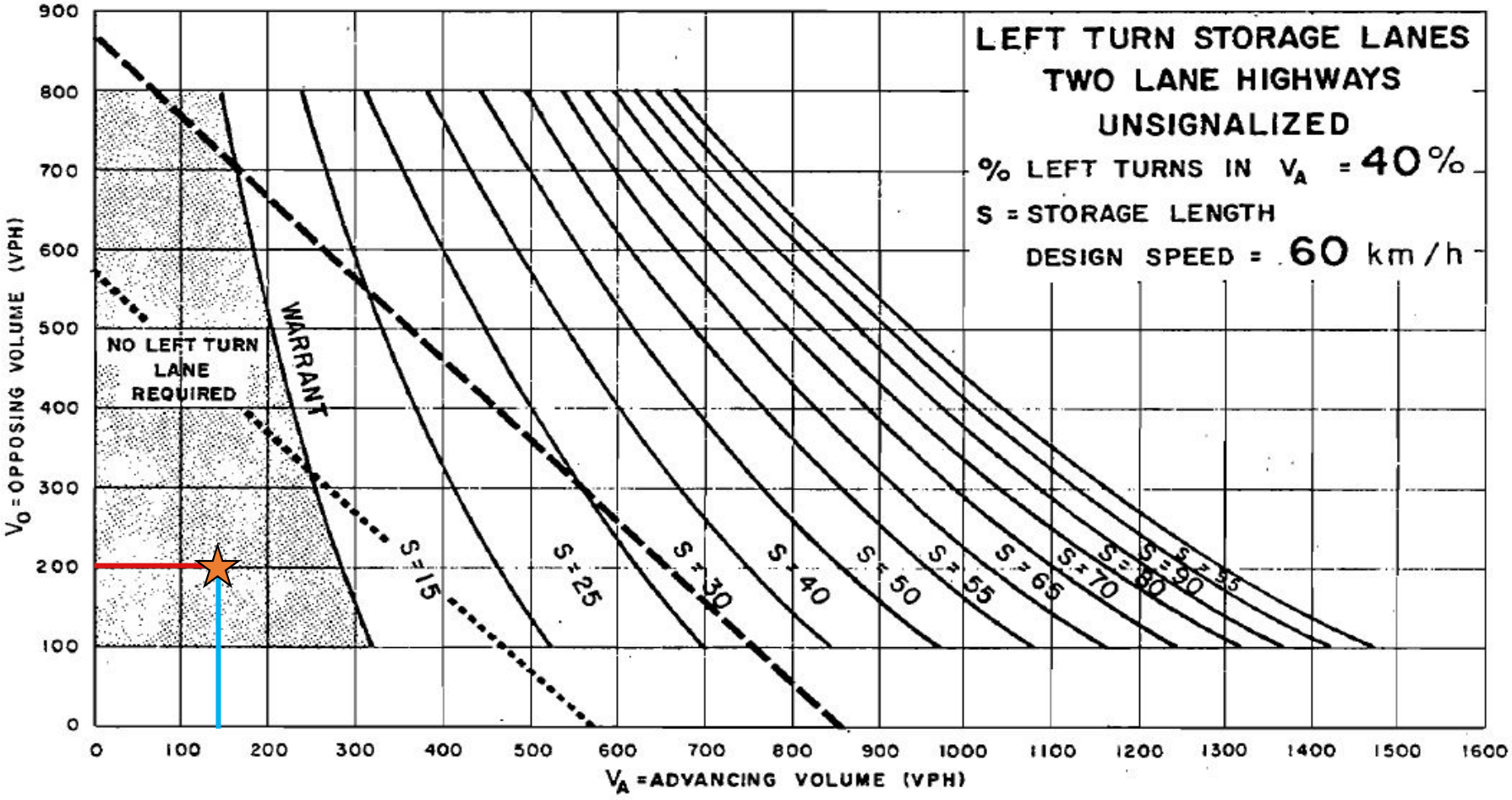
TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

Opposing Volume

Advancing Volume

O'Keefe Court & Lusk Street | Westbound Left-Turn | AM Peak Hour



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

Opposing Volume

Advancing Volume

O'Keefe Court & Lusk Street | Westbound Left-Turn | PM Peak Hour