

**SUBJECT**  
4401 Fallowfield Phase 2 - Transportation Impact  
Assessment Addendum  
**DATE**  
May 10, 2024

**DEPARTMENT**  
Transportation Engineering

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Reports\5.2.4 Transportation\5.2.4.5 Traffic Impact\4401  
Fallowfield Phase 2 - TIA Addendum  
**PROJECT NUMBER**  
39744

**NAME**  
Ben Pascolo-Neveu, P.Eng. – Transportation Engineer

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## Technical Memorandum – TIA Addendum

### Introduction

Arcadis was retained by DCR Phoenix to prepare a Transportation Addendum in support of a Zoning By-law Amendment (ZBLA) application for a proposed change in land use within Phase 2 of the Draft Plan of Subdivision (DPS) application for an industrial subdivision at 4401 Fallowfield Road, Ottawa, Ontario.

The proposed rezoning would expand the current Business Park Industrial zoning permissions for Phase 2 to include automobile and veterinary clinic uses.

The overall subdivision lands (i.e. Phases 1 and 2) are generally bound by O’Keefe Court to the north, Fallowfield Road to the east, Strandherd Drive to the south and Highway 416 to the west.

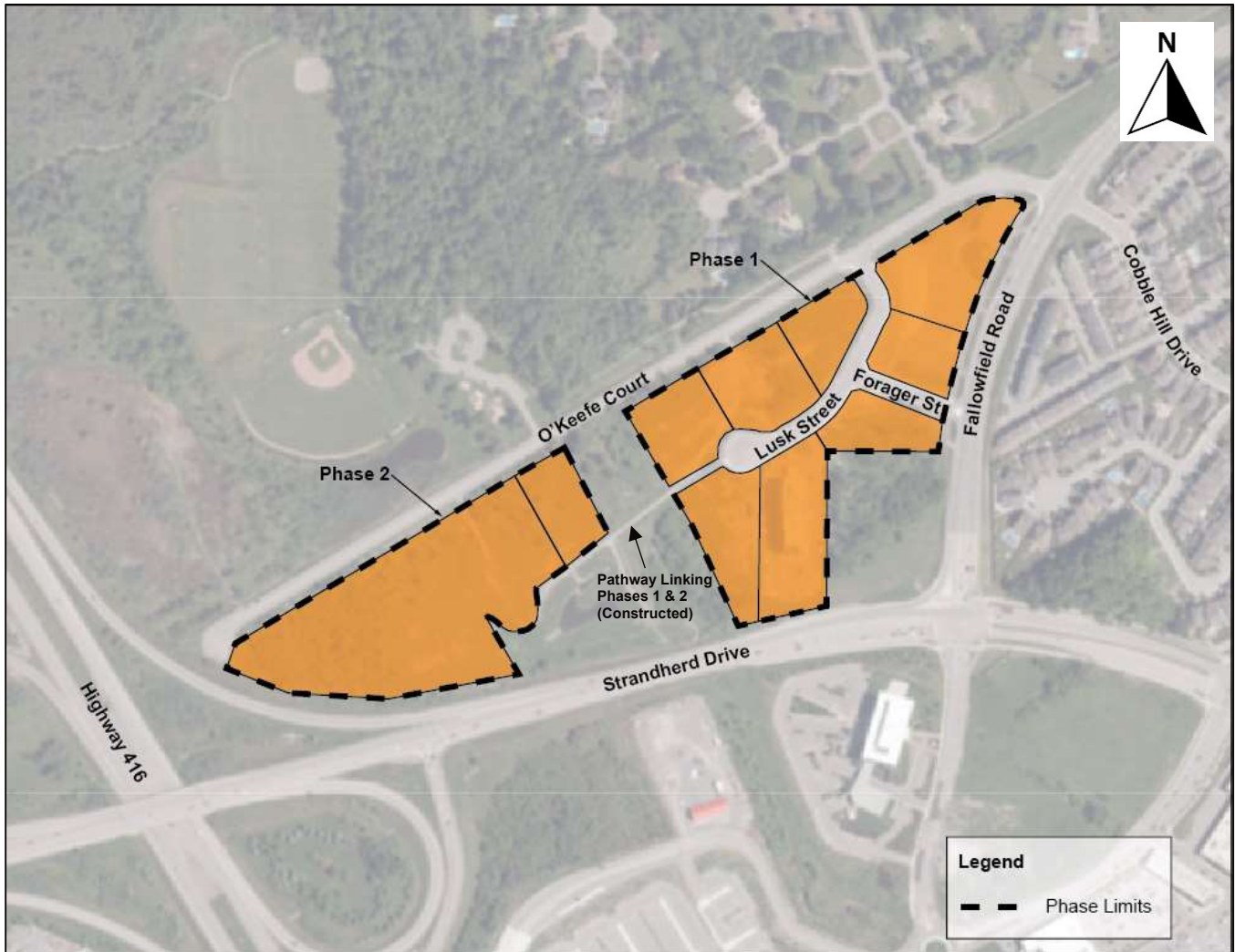
The site location and its surrounding context are illustrated in **Figure 1** below, while the proposed concept plan for Phase 2 is illustrated in **Appendix A**.

The submission of an addendum to the ‘Highway 416 Lands Community Transportation Study’ (IBI, 2015) in lieu of a full TIA update was agreed to by the City Transportation Project Manager, Neeti Paudel, through email correspondence dated August 28, 2023. This reduced scope study was consented to on the basis that the overall site-generated traffic impacts and transportation-related infrastructure improvements within the vicinity of the subject lands have been documented as part of the 2015 CTS and have been revisited through numerous more recent TIAs in support of Site Plan Control applications for individual property parcels within the 4401 Fallowfield Road subdivision.

The following items are discussed in this TIA Addendum:

1. Background Review
2. Proposed Land Use Changes
3. Trip Generation Comparison
4. Network Impact Review
5. Concept Plan Review

Figure 1 Site Location



## Background Review

This section highlights all of the changes to the transportation and active networks which have occurred since the submission of the original CTS in 2015, as compared to the recent studies completed in the area. Overall, any transportation-related infrastructure improvements are not anticipated to have a significant impact on mode share choice or trip generation characteristics of the subject lands beyond the baseline assumptions carried forward from the 2015 TIA.

## Road Network

There have been no new roadway projects of significance identified within the immediate vicinity of the site beyond those noted in the 2015 CTS. In the broader area, Strandherd Drive is presently being widened from two to four lanes between Maravista Drive and Jockvale Road which was listed as a Phase 2 project (2020-2024) in the 2013 TMP and therefore was considered in the 2015 CTS.

## Pedestrian and Cycling Facilities

As discussed in the previous studies, including the 140 Lusk Street TIA (Arcadis IBI Group, 2023), Fallowfield Road was reconstructed to incorporate a multi-use path (MUP) on the west side from Forager Street to O’Keefe Court and a MUP along the north side of O’Keefe Court from Lytle Park to Cedarview Road with a sidewalk connection between these facilities along Forager Street. It should be noted as well that a pathway connection was constructed west from the turn-around circle on Lusk Street through the stormwater management lands and will establish a direct active transportation link between Phases 1 and 2.

Uni-directional cycle tracks have been provided along Strandherd Drive from Fallowfield Road to Maravista Drive with cross-rides, two-stage left-turn bike boxes and bicycle signals at major intersections along the segment. A bike pocket exists on the southbound approach of the Fallowfield & O’Keefe/Cobble Hill intersection which connects to the MUP along Fallowfield Road.

## Transit Facilities and Service

There are four (4) transit routes which provide service within a 1km walking distance from the Phase 2 lands:

- **Route #99** – Provides service from Hurdman Station to Barrhaven Centre, with select routes operating further west within the Citigate development during the morning and evening hours.
- **Route #110** – Offers all-day service operating on approximate 30-minute headways on weekdays from Fallowfield Station to Innovation Station, as well as at select times during the morning and late afternoon/evening periods on weekends.
- **Route #170** – Accommodates all-day service from Barrhaven Centre to Fallowfield Station during the weekday peak periods, operating on 30-minute headways.
- **Route #272** – Operates on weekday peak period service between the Cobble Hill residential subdivision from Fallowfield Road to Tunney’s Pasture Station with roughly 10-minute headways.

Route #272 is served by bus stops located an approximate 750-metre walking distance to the east and within closest proximity to the subject site, while Routes #99, #110 and #170 are served by bus stops located approximately 1km from the site within the Citigate development to the south.

## Adjacent Developments

Buildout years for the identified adjacent developments have been updated based on new information and assumptions and have been integrated into the analysis of the recent studies within Phase 1 of the subdivision, as well as the traffic generation for this TIA Addendum. No additional developments compared to the original 2015 study have been identified within the surrounding context area of the site.

## Proposed Land Use Changes

As the 4401 Fallowfield Road subdivision is a commercial subdivision, each parcel is sold off to individual owners for development. Consequently, at the time that the Draft Plan of Subdivision application was submitted the specific land uses that would occupy each parcel was unknown. The 2015 TIA estimated the trip generation of the majority of the subdivision using the “750: Office Park” land use from ITE. This land use may include general office buildings, as well as support services such as banks, restaurants, and gas stations. The 2015 TIA also assumed that two of the parcels would be developed into hotels.

Since the Draft Plan of Subdivision application was approved, several Site Plan Control (SPC) applications have been submitted in support of proposed developments within Phase 1 of the subdivision. As such, the specific land uses that will occupy several properties within Phase 1 are now known. For the two parcels with no SPC applications filed, it is assumed that they will be occupied by the types of buildings that are typically found within office parks. The current planning application is proposing that Phase 2 of the subdivision be occupied by two automobile dealership and a veterinary clinic.

**Table 1** below compares the land uses assumed in 2015 TIA with the latest plans for the subdivision.

Table 1 Land Use Comparison

Phase	Application	Parcel	Land Use	Size
1 & 2	2015 Draft Plan of Subdivision Application	4401 Fallowfield - Entire Site <sup>1</sup>	Office Park	~46,096 m <sup>2</sup> GFA (10 buildings)
			Hotel	148 employees (2 buildings)
1	Site Plan Control (SPC) applications – Submitted to City	100 Lusk St <sup>2</sup>	General Office	~1,895 m <sup>2</sup> GFA
		115 Lusk St <sup>3</sup>	Quality Restaurant	~193 m <sup>2</sup> GFA
			Medical Office	~3,124 m <sup>2</sup> GFA
		125 Lusk St <sup>4</sup>	Hotel	102 rooms
		135 Lusk St <sup>5</sup>	Hotel	99 rooms
	140 Lusk St <sup>6</sup>	Hotel	95 rooms	
	Ongoing Site Plan Control (SPC) application	120 Lusk St <sup>7</sup>	Quality Restaurant	~208 m <sup>2</sup> GFA
		Medical Office	~560 m <sup>2</sup> GFA	
	No SPC application	75 & 95 & Lusk St <sup>8</sup>	Office Park	~9,219 m <sup>2</sup> GFA
2	Proposed Zoning By-law Amendment application	Proposed Concept Plan – Phase 2 Only	Automobile Dealership	~8,572 m <sup>2</sup> GFA
			Veterinary Clinic	~1,157 m <sup>2</sup> GFA

Notes:

GFA stands for 'Gross Floor Area'

<sup>1</sup> Source: 4401 Fallowfield Road – Highway 416 Lands Community Transportation Study (IBI, January 2015)

<sup>2</sup> Source: 100 Lusk Street TIA (Stantec, May 2020)

<sup>3</sup> Source: 115 Lusk Street TIA (IBI, January 2021)

<sup>4</sup> Source: 125 Lusk Street TIA (Hampton Inn & Suites) (IBI, July 2018)

<sup>5</sup> Source: 135 Lusk Street TIA (IBI, October 2021)

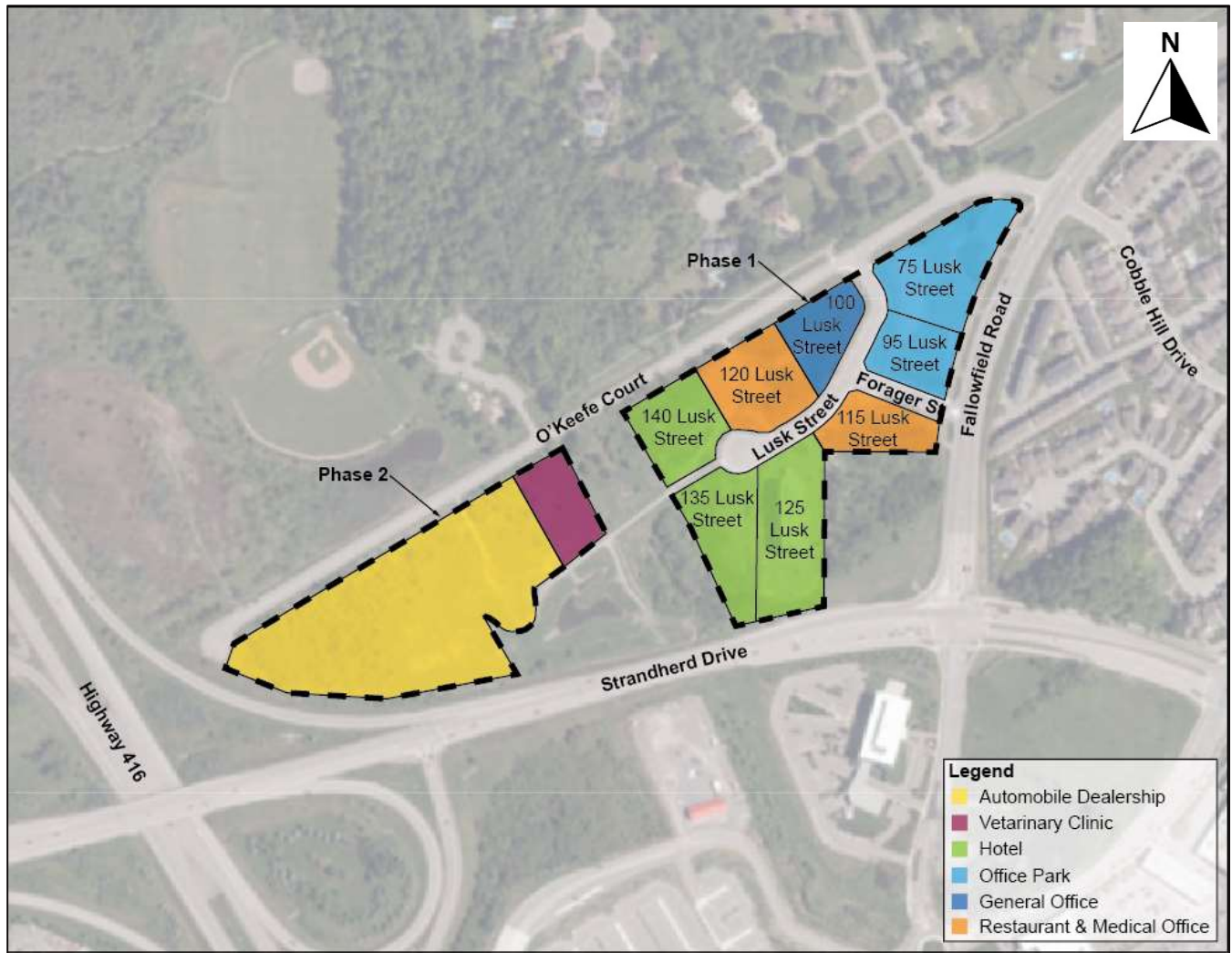
<sup>6</sup> Source: 140 Lusk Street TIA Addendum #1 (Arcadis IBI, September 2023)

<sup>7</sup> Source: 120 Lusk Street TIA Step 1,2 & 3 (Arcadis IBI, June 2023)

<sup>8</sup> Building sizes based on average office park building size from 4401 Fallowfield Road – Highway 416 Lands Community Transportation Study (IBI, January 2015)

**Figure 2** below illustrates the land uses that are proposed for each parcel within this industrial subdivision.

Figure 2 Proposed Land Uses



## Trip Generation Comparison

### Trip Generation Update

The vehicle-trip generation of 100, 115, 120, 125, 135 and 140 Lusk Street was based on the TIAs prepared in support of the SPC applications for these developments.

The person-trip generation of the remaining lands was estimated based on data from the Transportation Engineers (ITE) Trip Generation Manual (11th Edition) and converted to person-trips through the application of a 1.28 vehicle-to-person-trip conversion factor. Mode share targets were established based on the local mode share data for employment and commercial land uses in the South Nepean Traffic Assessment Zone (TAZ) from the 2020 TRANS Trip Generation Manual Summary Report. The mode share targets were adjusted to yield a maximum non-auto mode share of 15%, in accordance with the Conditions of Approval for 4401 Fallowfield Road.

## Baseline Vehicle Trips

Baseline vehicle-trips associated with the remaining lands without an ongoing or SPC application 'deemed complete' by City staff were determined using appropriate peak hour trip generation rates from the ITE Trip Generation Manual, 11<sup>th</sup> Edition. The baseline trip generation results have been summarized in **Table 2** below.

Table 2 Baseline Vehicle Trips

Land Use (ITE Code)	Size	Period	Baseline Vehicle Trips (vehicles/hour)		
			In	Out	Total
Office Park (750)	~9,219 m <sup>2</sup> GFA	AM	256	31	287
		PM	20	126	146
Automobile Sales - New (840)	~8,572 m <sup>2</sup> GFA	AM	125	47	172
		PM	75	113	188
Animal Hospital/Veterinary Clinic (640)	~1,157 m <sup>2</sup> GFA	AM	32	16	48
		PM	21	31	52
<b>Total</b>		<b>AM</b>	<b>413</b>	<b>94</b>	<b>507</b>
		<b>PM</b>	<b>116</b>	<b>270</b>	<b>386</b>

## Person Trip Generation

As outlined in the TIA Guidelines, baseline vehicle-trips have been converted to person-trips through the application of a 1.28 vehicle-to-person-trip conversion factor. The resulting person-trip estimates are summarized in **Table 3** below.

Table 3 Person-Trip Generation

Land Use (ITE Code)	Size	Period	Person Trips (persons/hour)		
			In	Out	Total
Office Park (750)	~9,219 m <sup>2</sup> GFA	AM	328	40	368
		PM	26	161	187
Automobile Sales - New (840)	~8,565 m <sup>2</sup> GFA	AM	160	60	220
		PM	96	145	241
Animal Hospital/Veterinary Clinic (640)	~1,157 m <sup>2</sup> GFA	AM	41	21	62
		PM	27	40	67
<b>Total</b>		<b>AM</b>	<b>529</b>	<b>121</b>	<b>650</b>
		<b>PM</b>	<b>149</b>	<b>346</b>	<b>495</b>

## Mode Share Targets

Mode share targets were developed for the remaining lands based on the existing mode share distribution for employment and commercial land uses within the South Nepean TAZ. The mode share distribution for employment land uses has been adjusted to yield a maximum non-auto mode share target of 15%, in accordance with the Conditions of Approval for 4401 Fallowfield Road.

Given that the automobile dealership and veterinary clinic are located at the end of O’Keeffe Court, far from transit and with limited pedestrian/cycling connections, it has been conservatively assumed that all person trips to these land uses will be auto driver or auto passenger trips. Considering the nature of these land uses and the location of this site, this is a reasonable assumption.

The auto occupancy proportions were maintained from the employment and commercial uses when developing the Office Park and Automobile Dealership and Veterinary Clinic mode share targets, respectively.

**Table 4** below summarizes the existing mode share distribution within the South Nepean TAZ as well as the mode share targets established for the site.

Table 4 Mode Share Targets

Travel Mode	Existing Mode Share Distribution 2020 TRANS – South Nepean TAZ		Mode Share Targets	
	Employment	Commercial <sup>1</sup>	Office Park (Remaining Phase 1)	Automobile Dealership and Veterinary Clinic (Phase 2)
Auto Driver	80%	68%	76%	77%
Auto Passenger	10%	21%	9%	23%
Transit	5%	1%	8%	0%
Bike	1%	0%	2%	0%
Walk	4%	10%	5%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>1</sup> Average of AM and PM mode share distribution.

## Person Trips per Mode

The mode share targets from **Table 4** were applied to the corresponding person-trip estimates from **Table 3** in order to estimate the number of person-trips per travel mode. The results are summarized below in **Table 5** below.

Table 5 Person-Trips per Travel Mode

Travel Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Auto Driver	404	93	497	114	265	379
Auto Passenger	76	22	98	31	57	88
Transit	26	3	29	2	13	15
Bike	7	1	8	1	3	4
Walk	16	2	18	1	8	9
<b>Total</b>	<b>529</b>	<b>121</b>	<b>650</b>	<b>149</b>	<b>346</b>	<b>495</b>

## Summary and Comparison

**Table 6** summarizes the total updated trip generation for the subdivision and compares it to the trip generation estimates from the 2015 TIA. As part of the Conditions of Approval for 4401 Fallowfield Road, the subdivision as a whole cannot exceed a maximum two-way vehicle trip generation of 739 two-way vehicles per hour during either the weekday morning and afternoon peak hour periods. As such, **Table 6** below demonstrates whether or not the limit is exceeded.

Table 6 Trip Generation Summary and Comparison

Application	Portion of Site	Two-Way Vehicle Trips per Hour	
		AM Peak Hour	PM Peak Hour
2015 Draft Plan of Subdivision Application	Entire Site	739	670
SPC applications filed with City or in progress	100, 115, 120, 125, 135 and 140 Lusk Street <sup>1</sup>	274	346
No SPC applications yet (Phase 1) & Proposed Rezoning (Phase 2)	Remaining Phase 1	497	379
<b>Total</b>		<b>771</b>	<b>725</b>
% of Limit (739 vehs/hour)		104% (32 additional two-way vehicular trips)	98% (14 less two-way vehicular trips)

<sup>1</sup> Trip generation based on the TIAs prepared for each site.

As demonstrated in **Table 6** above, the proposed change in land use for Phase 2 is anticipated to result in a minimal net increase in two-way vehicle-trips relative to the trip generation estimates from the 2015 TIA, reaching up to 104% (or 32 additional two-way vehicular trips) of the trip generation limit outlined in the Conditions of Approval for 4401 Fallowfield Road during the critical weekday morning peak hour period.



## Network Impact Review

With consideration that the overall vehicle-trip generation of the site is marginally higher than what was projected as part of the 2015 TIA and the impact of approximately 32 more two-way vehicle trips per hour is anticipated to be minimal when dispersed over the adjacent transportation network, there is no need to undertake an update to the intersection capacity analysis to assess the impact of the proposed land use changes.

## Concept Plan Review

### Design for sustainable Modes

The proposed development is located an approximate 750-metre walking distance from existing bus stops on the east side of Fallowfield & O’Keefe Court/Cobble Hill, assuming that transit users cross Fallowfield Road at Strandherd Drive. 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 700m, however a bus stop at this location has now been deferred until after the signalization of this intersection.

### Circulation and Access

The internal drive aisle generally provides at least 6.7 metres of clear width throughout the site, as indicated on the concept plan presented in **Appendix A**, and is therefore in compliance with the Zoning By-law. Any required swept path analysis will be undertaken as part of a future potential Site Plan Control application.

### Parking Supply

Based on the size of the proposed development, a minimum of 179 vehicle parking spaces are required to meet the minimum Zoning By-law (2008-250) requirements. The proposed development concept plan indicates that 283 vehicle parking spaces will be provided, therefore the parking supply is within the permissible range. These parking statistics do not include the area set aside for the future veterinary clinic. It is assumed that the required parking rates will be adhered to once the concept plan for that area is completed.

### Location and Design of Access

The proposed development will provide two (2) new two-way access driveways on O’Keefe Court. The new vehicular connections are 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 driveways will be 6.7m wide. ✓
- **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. For every additional 90m of frontage in excess of 150 metres, one (1) additional two-way private approach or two (2) additional one-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 O’Keefe Court is approximately 350m and therefore the two (2) proposed two-way private approaches are 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 driveways are located approximately 167m and 165m from the western and eastern property boundaries, respectively. Given that the site access driveways are located near the terminus of a local road that ends in a cul-de-sac which promotes reduced operating speeds and that there are no existing vehicular access driveways immediately to the north, the position of both site access driveways is deemed to be acceptable. ✓

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 O’Keefe Court, occasional queue spillback is not likely to result in traffic operational issues.

## Conclusion

A review of roadway and active transportation network changes was undertaken to summarize the potential impacts to site-generated travel demands since the 2015 TIA. The overall impacts of any transportation-related infrastructure changes within the vicinity of the subject site on mode share and overall travel patterns were determined to be negligible.

In terms of planning progress within the overall subdivision lands since 2015, the vast majority of Phase 1 property parcels have now been subjected to the City’s Site Plan Control application process. The cumulative trip generation of these Phase 1 developments, along with the impacts associated with the rezoning of Phase 2 lands to include auto dealership and veterinarian clinic permissions were considered in the re-assembly of overall site-generated traffic volumes during each weekday peak hour period. The overall site-generated travel demand for Phases 1 and 2 of the subdivision indicated a net increase of just 32 two-way vehicular trips during the critical weekday peak hour period in comparison with 2015 TIA site-generated travel demands. Dispersed across the adjacent transportation network, these additional site-generated traffic impacts are anticipated to result in negligible downstream impacts.

A review of the Phase 2 concept plan indicated its conformance with the Private Approach By-law (2003-447) in terms of site access count, placement and spacing, and the parking supply was found to align with the requirements prescribed in the Zoning By-law (2008-250).

**As such, the overall conclusions and recommendations of the 2015 TIA would remain valid with the rezoning of the Phase 2 lands to include two auto dealerships and veterinarian clinic land use.**



Ben Pascolo-Neveu, P.Eng. - Transportation Engineer

# Appendix A – Proposed Concept Plan



**SITE INFORMATION**

<b>ZONING</b>			
Actual Zone:	IP		
<b>SITE AREA</b>			
Total Site Area:	33,985m <sup>2</sup>	3.40 Ha	
<b>PARKING RATES</b>			
Car sales/service area:	2.0 per 100 m <sup>2</sup> of GFA		
<b>HEIGHT</b>			
Maximum:	ZBL 24-36-48m	OP N/A	SP N/A
<b>SETBACKS</b>			
	F.Y.	C.S.Y.	S.Y.
	6.0 m	6.0 m	3.0 m
			R.Y. 6.0 m

**DEVELOPMENT STATISTICS**

<b>TOTAL BUILDING AREA</b>		Automobile D.
Proposed buildings (A+B):	9,524m <sup>2</sup>	
<b>GFA*</b>		Automobile D.
Proposed buildings (A+B):	8,572m <sup>2</sup>	
<small>*assumes an 90% efficiency</small>		
<b>PARKING</b>		Required: Provided:
Vehicles:	171	283
<b>Total:</b>	<b>171</b>	<b>283</b>
<b>PARKLAND DEDICATION</b>		Required: Provided:
	680m <sup>2</sup>	2%
	Cash-in-Lieu	
<b>NOTES</b>		

- Assumes typical Automobile Store floor height of 12m.
- \*GFA: as defined in City of Ottawa Zoning Bylaw means the total area of each floor whether located above, at or below grade, measured from the interiors of outside walls, but excluding areas dedicated for uses such as mechanical and electrical rooms, common hallways, corridors, staircases and elevators, interior amenities, bicycle storage and parking. Assume 90% efficiency for Automobile Dealership service buildings. Areas are approximate.
- The base plan (lot lines, existing roads and surrounding areas) is based on the City's Open Data and aerial images. The site area is approximate and all dimensions need to be confirmed by a legal survey.
- This concept is part of a development concept report and should be interpreted as per findings and descriptions of such report. This concept may require minor variances for setback reduction, parking, heights, etc.

**O'KEEFE COURT  
OTTAWA  
Concept Plan**



**LEGEND**

- PROPOSED BUILDING
  - LANDSCAPING
  - AMENITIES
  - EXISTING WOODED AREA
  - SURROUNDING OPEN SPACE / PARK
  - 14m MTO BUFFER FROM THE HIGHWAY
  - WATERBODY
  - 30m BUFFER FROM WATER COURSE/CREEK
  - 3m DRAINAGE EASEMENT
  - SUBJECT PROPERTY BOUNDARY
  - PROPERTY BOUNDARY
  - SETBACKS
  - BUILDING ENTRANCE
  - TREES
- Scale: 0 5m 10m 20m 35m 50m

6	REVISE CONCEPT PLAN	2024.01.31	TS
5	REVISE CONCEPT PLAN	2023.08.24	GV
4	REVISE CONCEPT PLAN	2023.07.24	GV
3	REVISE CONCEPT PLAN	2023.04.05	GV
2	CONCEPT PLAN	2023.03.20	GV
1	BASE PLAN	2023.03.15	GV
No.	REVISION	DATE	BY

CLIENT  
**PHOENIX HOMES**

**FOTENN**  
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DESIGNED	GV
REVIEWED	TS
DATE	2023.03.15

**P1**