CITY OF OTTAWA
REPORT NUMBER: PC2021-0327

415 LEGGET DRIVE & 2700 SOLANDT ROAD TRANSPORTATION IMPACT ASSESSMENT

DRAFT FINAL REPORT

OCTOBER 25, 2021

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PROJECT NO.: OUR REF. NO. 211-06996-00
CLIENT REF:PC2021-0327
DATE: OCTOBER 25, 2021

WSP
SUITE 300
2611 QUEENSVIEW DRIVE
OTTAWA, ON, CANADA K2B 8K2

T: +1 613 829-2800
F: +1 613 829-8299
WSP.COM

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1 SCREENING

This Transportation Impact Assessment (TIA) has been prepared to support the Site Plan Control Application for the development at 415 Legget Drive and 2700 Solandt Road in Ottawa. The TIA follows the City of Ottawa guidelines which potentially includes five steps:

1 Screening
2 Scoping
3 Forecasting
4 Analysis
5 TIA Report

The Screening Step determines the need to continue with a TIA Study. The development is assessed against three triggers: trip generation, location, and safety to identify the next step of the study. If one or more of the triggers is satisfied, the Scoping Step must be completed. If none of the triggers are satisfied, the TIA is deemed complete. If one or more triggers are satisfied, specific TIA components are required to be carried out depending on the combination of triggers (**Table 1-1**) that have been satisfied.

The proposed development at 415 Legget Drive and 2700 Solandt **satisfied the Trip Generation trigger** indicating that, as part of Steps Two through Five of the TIA process, the Design Review and Network Impact components should be completed. For reference, the completed Screening Form is provided in **Appendix B**.

Note that City of Ottawa comments and responses to those comments will be tracked in **Appendix A.**

Table 1-1. Transportation Impact Assessment (TIA) Screening Triggers

	TIA TRIGGERS SATISFIED		
Next Step of the TIA Process	**Trip Generation**	**Location**	**Safety**
Design Review and Network Impact	**Yes**	**No**	**No**

2 SCOPING

2.1 SCREENING FORM

The completed Screening Form is provided in **Appendix B**.

2.2 DESCRIPTION OF PROPOSED DEVELOPMENT

This Transportation Impact Assessment (TIA) has been prepared in support of the Site Plan Control Application for the proposed development at 415 Legget Drive and 2700 Solandt Road. The site is currently occupied by a two-storey general office building (9,600 m^2) with a large parking lot. The site area is 72,860 m^2 and is located at the northeast corner of the Legget Drive and Solandt Road intersection.

The redevelopment of the site is split into two (2) phases. Phase 1 includes the change of use from existing office and building to 2-storey warehousing occupancy. A partial removal of the second storey is proposed which will reduce the overall GFA of the building to approximately 14,350 m^2.

The proposed development of Phase 2 will include the construction of two warehouse buildings. Proposed building 'A' and Proposed Building 'B' (combined GFA of 18,580 m^2) will be constructed within the existing parking lot.

The property contains two access points along Legget Drive, and a third along Solandt Road about 150 m north of the intersection of Legget Drive and Solandt Road. All existing site accesses will remain as the access/egress points to the proposed development.

The property is currently zoned as a Business Park Industrial Zone Subzone 6 (IP-6). **Figure 2-1** illustrates the Study Area Context. The development information, as stated in the draft site plan attached as **Appendix C**, states that 152 surface level parking spaces will be provided.

The new warehouse buildings will be built with an estimated date of completion in 2022 and full occupancy in mid 2023.

Figure 2-1. Area Context Plan

2.3 EXISTING CONDITIONS

2.3.1 ROADWAYS AND PEDESTRIAN / CYCLING FACILITIES

The five existing roadways that the TIA will consider are Solandt Road, Legget Drive, March Road, Terry Fox Drive, and Carling Avenue.

March Road is designated as a Full Load truck routes, and Carling Avenue is designated as a Restricted Loads truck route as identified on the Ottawa Rural Truck Routes map (March 2021) under the jurisdiction of the City of Ottawa. The road classification for City of Ottawa roadways is defined in the City of Ottawa Official Plan, 2013, Volume 1, Section 7, Annex 1 Road Classifications and Rights-of-Way.

Solandt Road is an urban collector road that runs in an east-west alignment with a posted speed limit of 50 km/h. It has one traffic lane in each direction near the access point of the existing development. The right-of-way adjacent to the development is 24 metres. Street parking is permitted on the west side of the road. There is a sidewalk, separated from the road by a boulevard, on the west side of the road north of Legget Drive. Sidewalks are present on both sides of the road south of Legget Drive towards March Road.

Legget Drive is an urban collector road that runs in a north-south alignment with a posted speed limit of 50 km/h. In mid-block, it has one traffic lane in each direction, but adjacent to the existing access points there is a second westbound lane approaching the Legget/Solandt intersection. The right-of-way adjacent to the proposed development is 24 metres. There are sidewalks, separated by boulevards, on both sides of the road east of the Legget/Solandt intersection. West of the intersection, there is a sidewalk on the north side of the road and on-street cycling lanes on both sides of the road.

March Road is an urban arterial road that runs in a north-south alignment with a posted speed limit of 80 km/h within the study area. It has two travel lanes in each direction between Terry Fox Drive and Solandt Road. Between Carling Avenue and Solandt Road there are three northbound lanes and two southbound lanes. A physical median or varying width is present along March Road through the entire study area. The right-of-way through the study area is 44.5 metres. Sidewalks and on-street cycling lanes are present on both sides of the road throughout the study area except for a sidewalk on the south side of the road between Solandt Road and Carling Avenue.

Terry Fox Drive is an urban arterial road west of the Terry Fox/March intersection and an urban major collector road east of the Terry Fox/March intersection that runs in an east-west alignment with a posted speed limit of 60km/h. It has one travel in each direction between March Road and Legget Drive and a physical median separating the two lanes. The right-of-way through the study area is 44.5 metres. On-street cycling lanes are present on both sides of the road, while the south side of the road contains a sidewalk that is separated by a boulevard.

Carling Avenue is an urban arterial road that runs in an east-west alignment with a posted speed limit of 60 km/h. Upon approaching March Road, it has two travel lanes in each direction with a physical median separating the two directions of traffic. The right-of-way through the study area is 44.5 metres.

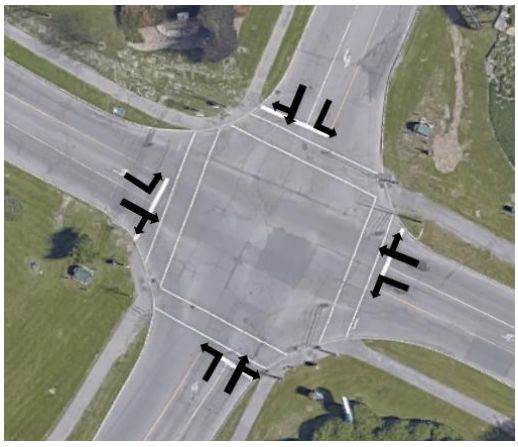
The existing pedestrian and cycling facilities providing direct connections to the proposed development are shown in **Figure 2-2**.

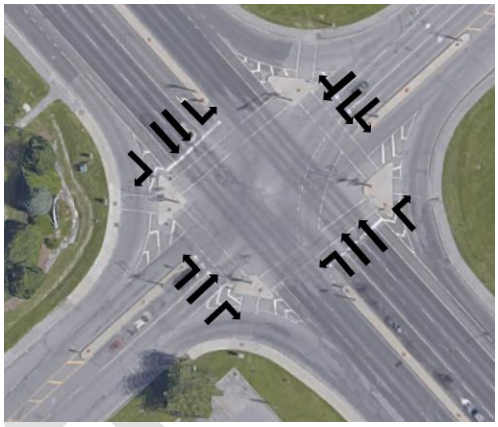
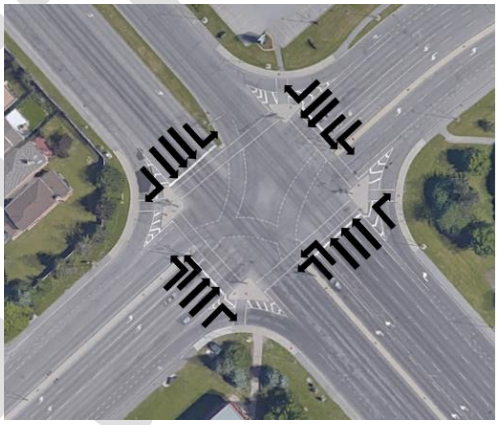
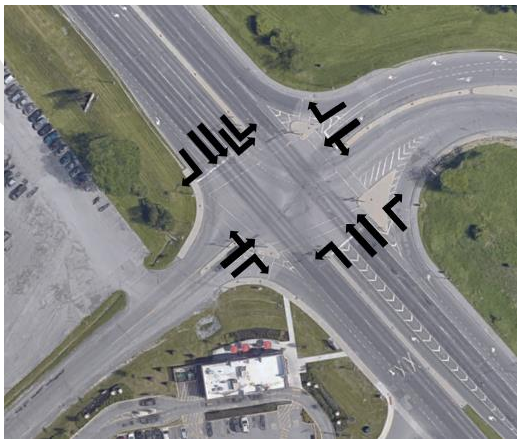
Figure 2-2: Bicycle and Pedestrian Facilities

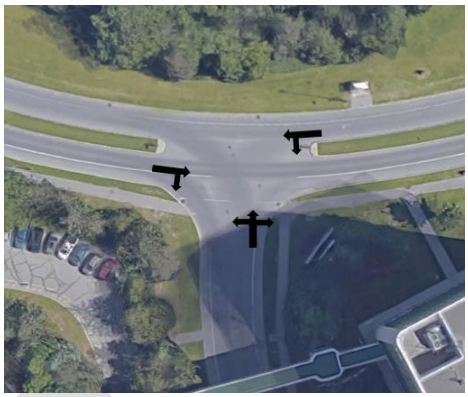
2.3.2 INTERSECTIONS

The TIA will not consider any intersections in the study area given that the trip generation trigger was not met.

Table 2-1. Description of Study Area Intersections

INTERSECTION (DESCRIPTION)	LANE CONFIGURATION
Legget Drive/Solandt Road is a signalized intersection. North Approach: One left-turn lane and one through/right-turn lane East Approach: One left-turn lane and one through/right-turn lane South Approach: One left-turn lane and one through/right-turn lane West Approach: One left-turn lane and one through/right-turn lane Pedestrian/Bicycle: Pedestrian crossing facilities are provided on all approaches	

INTERSECTION (DESCRIPTION)	LANE CONFIGURATION
March Road/Solandt Road is a signalized intersection. North Approach: One left-turn lane, two through lanes, and one right-turn lane (yield controlled). East Approach: Two left-turn lanes, one through/right-turn lane (RT is yield controlled). South Approach: One left-turn lane, two through lanes, and one right-turn lane (yield controlled). West Approach: One left-turn lane, one through lanes, and one right-turn lane (yield controlled). Pedestrian/Bicycle: Pedestrian crossing facilities are provided on all approaches. Bicycle crossing along March Road.	
March Road/Terry Fox Drive is a signalized intersection. North Approach: Two left-turn lanes, three through lanes and one right-turn lane (yield controlled). East Approach: Two left-turn lanes, two through lanes, and one right-turn lane (yield controlled). South Approach: Two left-turn lanes, three through lanes and one right-turn lane (yield controlled). West Approach: Two left-turn lanes, two through lanes, and one right-turn lane (yield controlled). Pedestrian/Bicycle: Pedestrian and bicycle crossing facilities are provided on all approaches.	
March Road/Carling Avenue is a signalized intersection. North Approach: Two left-turn lanes, two through lanes and one right-turn lane (yield controlled) East Approach: One through/left-turn lane and one right-turn lane (yield controlled) South Approach: One left-turn lane, two through lanes and one right-turn lane (yield controlled) West Approach: One through/left-turn lane and one right-turn lane (yield controlled) Pedestrian/Bicycle: Pedestrian and bicycle crossing facilities are provided on all approaches with the exception of a bicycle crossing facility from the west approach.	

INTERSECTION (DESCRIPTION)	LANE CONFIGURATION
March Road/Carling Avenue is an unsignalized intersection with one lane in each direction. The minor road, Legget Drive, is stop-controlled. Pedestrian/Bicycle: Pedestrian and bicycle crossing facilities are provided when crossing the minor street (east/west).	

2.3.3 DRIVEWAYS

There are three existing driveway accesses to 415 Legget Drive and 2700 Solandt Road.

- One access from Legget Drive, about 25 m east of the Legget/Solandt intersection
- One access from Legget Drive, about 200 m east of the Legget/Solandt intersection
- One access from Solandt Road, about 150 m north of the Legget/Solandt intersection

2.3.4 TRANSIT FACILITIES

OC Transpo provides four transit stops in close proximity to 415 Legget Drive and 2700 Solandt Road:

- Transit Stop 6909 on Legget Drive west of Solandt Road (Bus 63, 66, 110, 166)
- Transit Stop 7987 on Legget Drive east of Solandt Road (Bus 63, 64, 110)
- Transit Stop 7991 on Legget Drive east of Solandt Road (Bus 64)
- Transit Stop 6150 on Legget Drive west of Solandt Road (Bus 66, 166)

Figure 2-3 highlights all OC Transpo bus routes on adjacent roadways in close proximity of the proposed development.

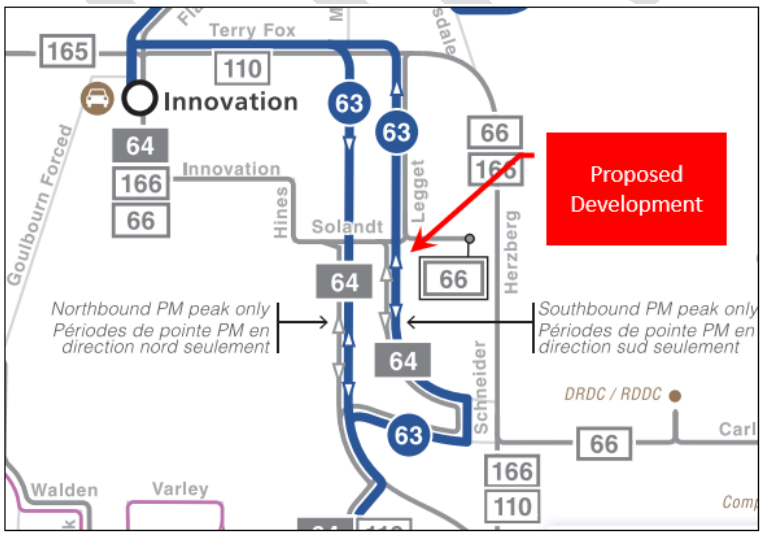


Figure 2-3: OC Transpo Bus Routes (Source : OC Transpo)

2.3.5 AREA TRAFFIC MANAGEMENT MEASURES

The existing area traffic management measures identified adjacent to the proposed development site include:

- Boulevards between the sidewalk and road along both sides of the road along Legget Drive adjacent to the proposed development access on Legget Drive
- Boulevard between the sidewalk and road along the west side of the road along Solandt Road adjacent to the proposed development access on Solandt Road

2.3.6 PEAK HOUR TRAVEL DEMANDS

The TRANS Committee was established to co-ordinate transportation planning efforts among various planning agencies located within the National Capital Region. In the most recent TRANS Trip Generation Manual, an employment mode share by district was developed. For this analysis, the employment mode share of the Kanata-Stittsville district was taken as the existing mode share A map of the district area is provided in **Appendix D**. The TRANS mode share for the Kanata-Stittsville District is summarized in **Table 2-2.**

Table 2-2. Employment Generator Mode Share – Kanata-Stittsville District

TRAVEL MODE	AM PEAK PERIOD (7:00 A.M. – 9:30 A.M.)	PM PEAK PERIOD (3:30 P.M. – 6:00 P.M.)
Auto-Driver	84%	84%
Auto-Passenger	4%	4%
Transit	8%	8%
Bicycle	1%	1%
Walk	3%	3%

Source: 2021 TRANS Trip Generation Manual

2.3.7 FIVE-YEAR COLLISION HISTORY

Using the collision history from the City of Ottawa Open Data, WSP reviewed the number and types of collisions (January 1, 2015 through December 31, 2019) at the three existing access points to 415 Legget Drive and the Legget/Solandt intersection. More recent and detailed five-year collision data will be requested from the City in support of a more thorough collision review if necessary. **Table 2-3** summarizes the five-year collision history on the boundary road.

Table 2-3. Five Year Collision History Summary

LOCATION	SUMMARY	TRENDS
Boundary Road: Solandt Road Adjacent to the Property	One collision over the five-year period.	-
Boundary Road: Legget Drive Adjacent to the Property	One collision over the five-year period.	-
Intersection: Legget Drive and Solandt Road	Four collisions over the five-year period.	-

2.4 PLANNED CONDITIONS

2.4.1 CHANGES TO THE STUDY AREA TRANSPORTATION NETWORK

Based on the City of Ottawa's Construction and Infrastructure projects, the only major project near the adjacent roads expected this year is a new sewer about a kilometre east along Legget Drive. Additionally, the City's Transportation Master Plan Affordable Transit Network has a Bus Rapid Transit (BRT) route along March Road from Highway 417 to Solandt Road. However, there is no timeline for the implementation of the route and is beyond our planning horizon.

2.4.2 OTHER STUDY AREA DEVELOPMENTS

As indicated in the City of Ottawa's Development Application Search tool, there is one development near the study area that could influence the analysis of the Transportation Impact Assessment:

— 2707 Solandt Road (D07-12-19-0172): Eight storey office building with 443 surface parking spaces (247 from existing parking lot at 2505 Solandt Road)

2.5 STUDY AREA

The limits for the Transportation Impact Assessment (TIA) study area are shown in **Figure 2-4**.

Figure 2-4: Study Area

2.6 TIME PERIOD

The time periods identified for the traffic analysis are:

- Weekday AM Peak Hour: 8:15 a.m. to 9:15 a.m.
- Weekday PM Peak Hour: 4:30 p.m. to 5:30 p.m.

These are consistent with the AM and PM peak hours identified in the turning movement counts that were collected at the March Road/Solandt Road intersection.

2.7 HORIZON YEARS

The proposed facility is expected to be completed in one phase with a target build-out year of 2022 and full occupancy in mid 2023. In accordance with the TIA Guidelines, the following horizons will be considered for analysis

- 2023, which represents the anticipated buildout horizon,
- 2028, which represents the buildout year plus five years.

2.8 EXEMPTIONS REVIEW (REVISED WITH FORECASTING)

Based on the review of the development and network conditions, the following elements shown in **Table 2-4** qualify for an exemption from this Transportation Impact Assessment.

Table 2-4. Exemptions Summary

MODULE	ELEMENT	EXEMPTIONS
DESIGN REVIEW COMPONENT		
All Modules	All Elements	**Exempted** The development is proposing no new accesses and the travel demand forecasting completed as part of **Section 3** indicates that the development generated trips results in a reduction in future travel demand resulting from the conversion of the office space to a warehouse space. Therefore, the development will not negatively impact the surrounding road network and no further study is proposed
NETWORK IMPACT COMPONENT		
All Modules	All Elements	**Exempted** The development is proposing no new accesses and the travel demand forecasting completed as part of **Section 3** indicates that the development generated trips results in a reduction in future travel demand resulting from the conversion of the office space to a warehouse space. Therefore, the development will not negatively impact the surrounding road network and no further study is proposed..

3 FORECASTING

3.1 DEVELOPMENT GENERATED TRAFFIC

3.1.1 TRIP GENERATION

Base Trip Generation. The ITE Trip Generation Manual (10th Edition) was used to determine the base trip generation rate for *Warehousing* (Land Use Code 150):

- AM Base Rate: 0.12(X) + 25.32 vehicle trips per hour, where X is 1,000 square feet (ground floor area)
- PM Base Rate: 0.12(X) + 27.82 vehicle trips per hour, where X is 1,000 square feet (ground floor area)

Total Development-Generated Person-Trips. In accordance with the City of Ottawa's Transportation Impact Assessment Guidelines (2017), the ITE vehicle trips were multiplied by 1.28 to convert to person trips. The total development-generated person-trips (**Table 3-1**) were estimated using the projected auto trips and the trip generation multiplier.

Table 3-1. Estimated Total Development-Generated Person-Trips (Warehousing)

PEAK HOUR	GROSS FLOOR AREA (SQ/FT)	ITE TRIP RATE	PROJECTED AUTO TRIPS	ITE PERSON TRIP CONVERSION	TOTAL PERSON TRIPS
AM	200,000	0.12(X)+25.32	49	1.28	63
PM		0.12(X)+27.82	52		66

The directional distribution (**Table 3-2**) was taken from the ITE Trip Generation Manual (10th Edition) and applied to the total person trips calculated in **Table 3-1**.

Table 3-2. Directional Splits (Warehousing)

PEAK HOUR	PERSON TRIPS	% ENTER	% EXIT	ENTER	EXIT
AM	63	77%	23%	48	15
PM	66	27%	73%	18	48

Identify Existing Mode Share. The existing peak hour travel demand at a place of employment was identified in the most recent TRANS Trip Generation Manual and is shown in **Table 3-3**.

Table 3-3. Existing Employee Mode Share - Kanata-Stittsville District

PEAK HOUR	AUTO DRIVER	AUTO PASSENGER	TRANSIT	BICYCLE	WALK
AM Peak Hour	84%	4%	8%	1%	3%
PM Peak Hour	84%	4%	8%	1%	3%

Future Mode Share Targets. Given the location of the proposed development, and its proximity to nearby amenities, the future mode share targets are to remain relatively similar with the existing mode share except for an increase in bicycle mode share due to the cycling infrastructure projects to be mentioned in **Section 3.2.1**. The mode share targets are shown in **Table 3-4**.

Table 3-4: Future Travel Mode Share Targets

TRAVEL MODE	COMMUTER TARGET MODE SHARE	RATIONALE
Auto Driver	80%	Staff trips are expected to largely be in-line with the existing employment mode share apart from a slightly higher bicycle share due to proposed infrastructure near the proposed development.
Auto Passenger	4%	
Transit	8%	
Bicycle	5%	
Walk	3%	

Projected Development Trips by Mode. Based on the estimated employment mode share, the number of person trips to and from the proposed development at 415 Legget Drive and 2700 Solandt Road are shown in **Table 3-5**.

Table 3-5. Trips Generated by Mode for Proposed Development

MODE	TRIPS GENERATED	
	AM Peak Hour	PM Peak Hour
Auto Driver	50	53
Auto Passenger	3	3
Transit	5	5
Bicycle	3	3
Walk	2	2

Trip Reduction Factors. As mentioned in Section 2.2, the redevelopment of the site will include converting the existing office building to a warehouse and reducing the GFA by about 20%. As shown in **Table 3-6**, the total person trips are reduced by more than 200 trips per peak hour.

Table 3-6. Trip Reduction - Redevelopment of Existing Building

TIME PERIOD	OFFICE (193,750 FT^2)		WAREHOUSE (156,000 FT^2)		REDUCTION IN PERSON TRIPS
	ITE Trip Rate	Total Person Trips	ITE Trip Rate	Total Person Trips	
AM Peak Hour	0.94(X)+26.49	268	0.12(X)+25.32	56	212
PM Peak Hour	LN(T)=0.95ln(X)+0.36	273	0.12(X)27.82	60	213

Accounting for the trip reduction in **Table 3-6** and the development-generated trips in **Table 3-1**, the proposed development is expected to generate 149 and 147 fewer person-trips during the AM and PM peak hour, respectively than existing conditions.

3.1.2 TRIP DISTRIBUTION

Currently, there are three vehicle accesses to the development: two on Legget Drive and one on Solandt Road. However, it is anticipated that the south access will be the primary access for employees since it provides direct access to the parking lot, while the north access would be used by visitors and short-stay delivery vehicles circulating passed the front of the building. The trip distribution for the proposed development is presented in **Table 3-7**.

Table 3-7. Trip Distribution

	DIRECTIONAL SPLIT (%)			
DIRECTION	**AM Peak Hour – Inbound**	**AM Peak Hour – Outbound**	**PM Peak Hour – Inbound**	**PM Peak Hour – Outbound**
North	24%	24%	23%	28%
West	0%	0%	0%	0%
East	8%	33%	19%	11%
South	68%	43%	58%	61%

3.1.3 TRIP ASSIGNMENT

Trips were assigned to the adjacent transportation network and have been based upon a good understanding of existing travel patterns identified from a review of intersection turning movement counts, including those at the following locations:

- Carling Avenue/March Road/Station Road.
- March Road/Solandt Road.
- March Road/Terry Fox Drive
- Legget Drive/Solandt Road
- Legget Drive/Terry Fox Drive

The distribution of development-generated vehicle trips at 415 Legget Drive and 2700 Solandt Road is shown in **Figure 3-1**.

Figure 3-1. Vehicle Trips Generated by Development

3.2 BACKGROUND NETWORK TRAFFIC

3.2.1 CHANGES TO THE BACKGROUND TRANSPORTATION NETWORK

The addition of bike lanes on Legget Drive south of the Legget/Solandt intersection and on Solandt Road west of the Legget/Solandt intersection are categorized as a Phase 2 (P2-8) project in the Ottawa Cycling Plan (2013) are to be implemented between 2020 and 2025. Additionally, as part of the Ultimate Cycling Network an extension of a major east-west pathway that will cross Legget Drive, about 150 m north of the Legget/Solandt intersection has been proposed (no schedule for implementation).

There are no proposed pedestrian improvement projects per the Ottawa Pedestrian Plan (2013).

3.2.2 GENERAL BACKGROUND GROWTH RATES

A 2.6% background growth rate was calculated based on turning movement counts from 2015 and 2020 captured by the City of Ottawa at the Carling/March/Station intersection. The 2020 traffic counts were obtained in advance of the COVID-19 pandemic when travel patterns changed substantially. Additionally, the historical Travel Trends Greenbelt cordon auto person trip growth rate has previously been calculated at 2.2% for the AM peak hour and 2.3% for the PM peak hour.

For this analysis, a background growth rate of 2.5% was applied to the arterial roads, which is marginally less than the pre-pandemic growth rate experienced along the nearby arterial roads and marginally higher than the pre-pandemic growth rate across the wider Greenbelt cordon.

3.2.3 OTHER AREA DEVELOPMENTS

As noted in **Section 2.4.2**, there is one active development application near the proposed development at 415 Legget Drive and 2700 Solandt Road. The trips generated from this development at 2707 Solandt Road (D07-12-19-0172) will be added to the future background volumes. See **Appendix E** for the estimated vehicle trips generated as presented in its TIA prepared by Novatech in 2020.

The background traffic volumes for 2023 and 2028 are provided in **Figure 3-2 and Figure 3-3.**

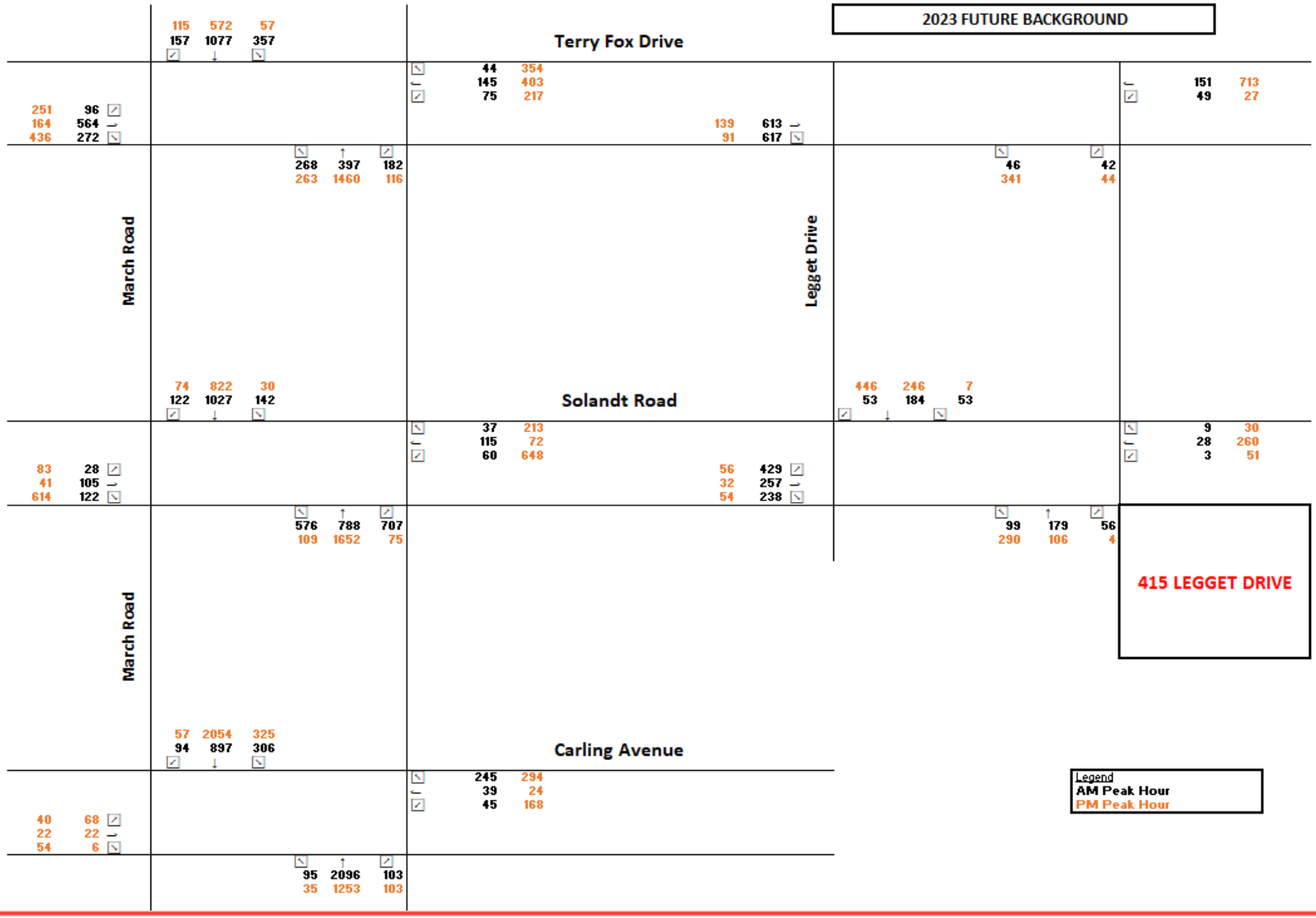


Figure 3-2. 2023 Future Background Volumes

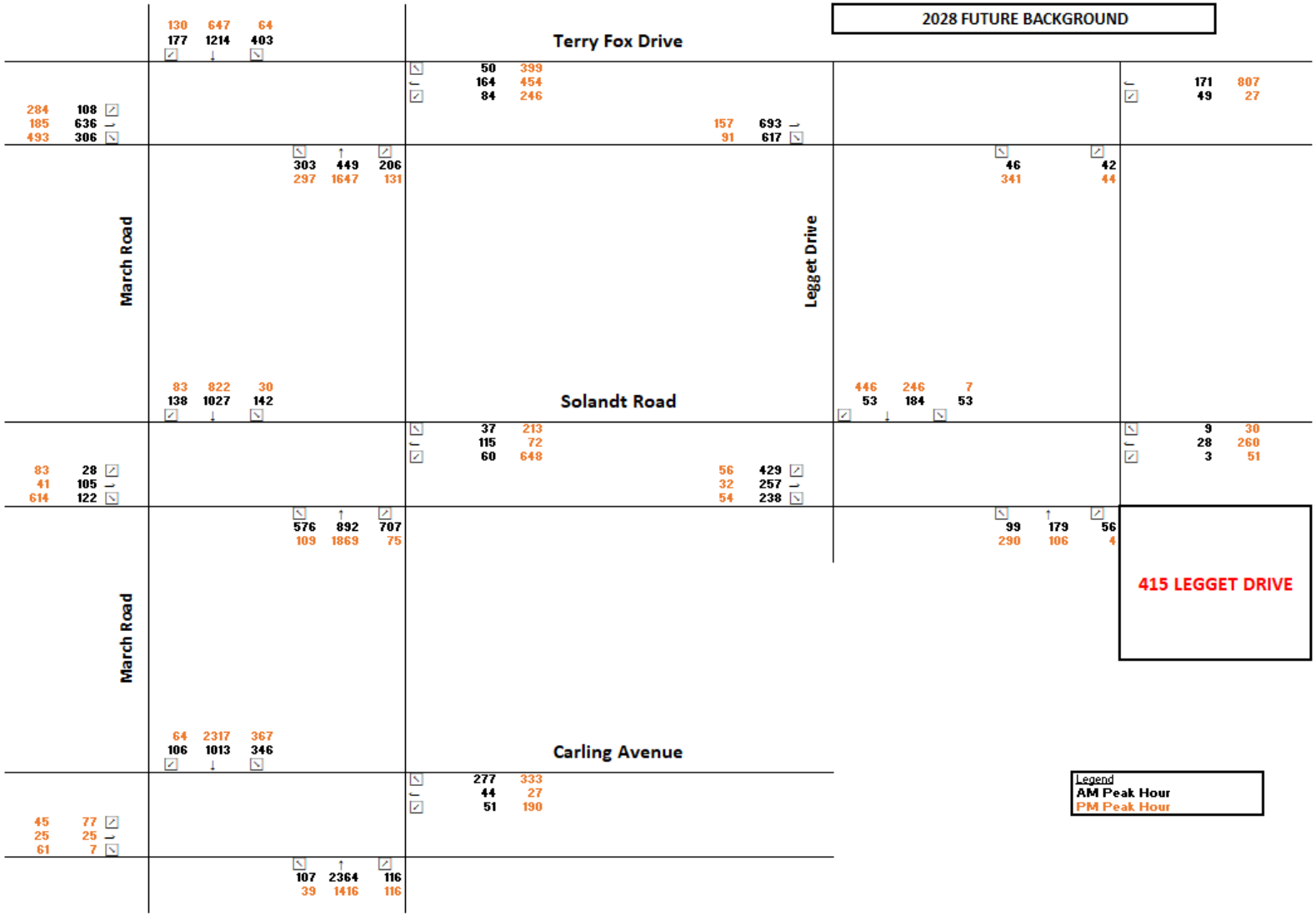


Figure 3-3. 2028 Future Background Volumes

3.3 DEMAND RATIONALIZATION

3.3.1 DESCRIPTION OF CAPACITY ISSUES

The total traffic volumes for the 2023 and 2028 planning horizons were estimated by adding trips generated by the proposed development to the background traffic and other area developments. The estimated total traffic volumes are shown in **Figure 3-4 and Figure 3-5**.

3.3.2 ADJUSTMENTS TO DEVELOPMENT GENERATED DEMANDS

The development-generated trips resulted in a negative future travel demand through the conversion of the existing office space to a future warehouse / storage space. As a result, there are no proposed adjustments to development generated demands.

3.3.3 ADJUSTMENTS TO BACKGROUND NETWORK DEVELOPMENT

There are no proposed adjustments to background network demands.

3.4 SUMMARY OF IMPROVEMENTS INDICATED AND MODIFICATION OPTIONS

The proposed development at 415 Legget Drive and 2700 Solandt Road does not include new driveway accesses and the travel demand forecasting completed as part of this Section indicates that the development generated trips results in a reduction in future travel demand resulting from the conversion of the office space to a warehouse space. Therefore, the development will not negatively impact the surrounding road network and no further study is proposed.

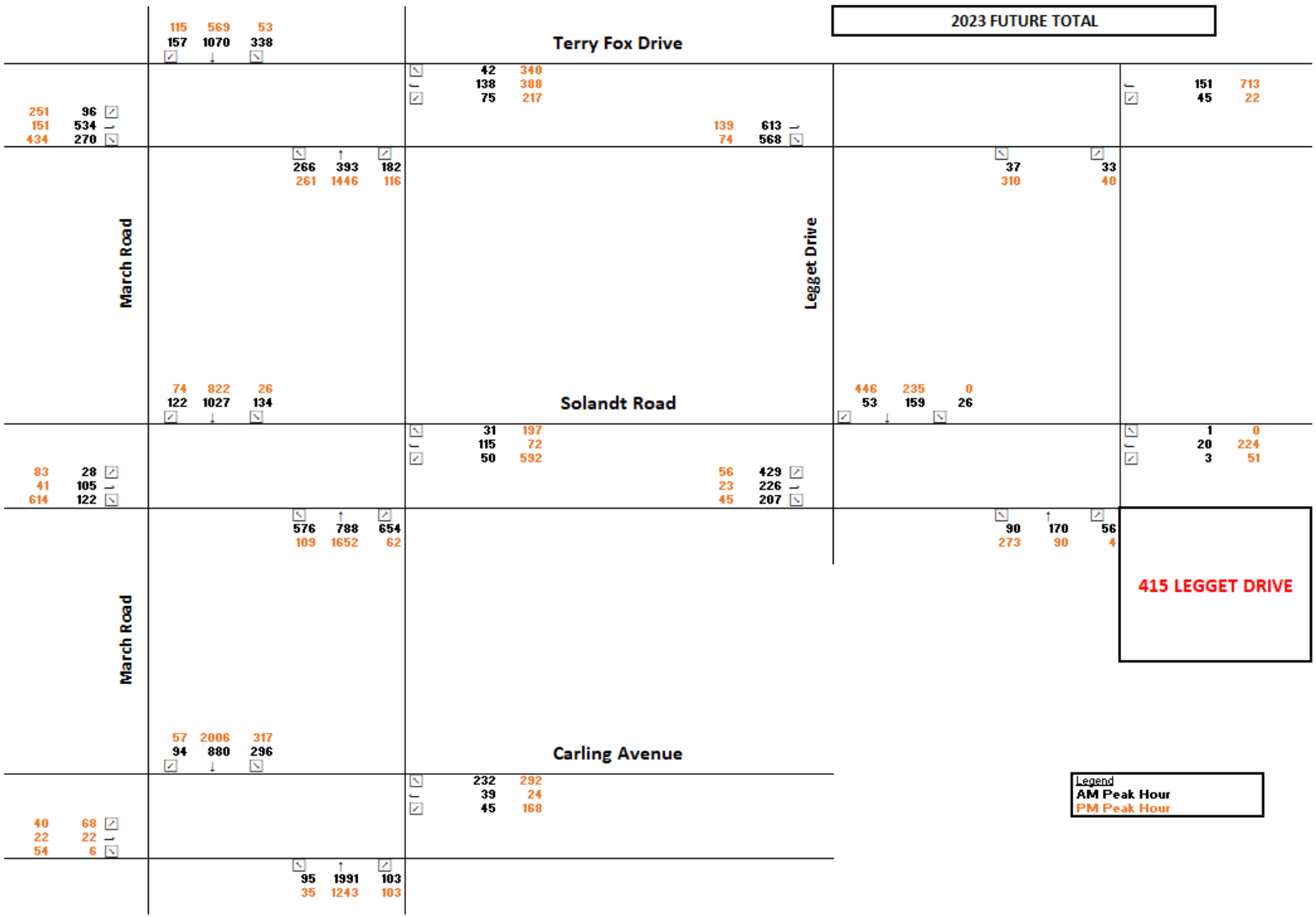


Figure 3-4. 2023 Future Total Volumes

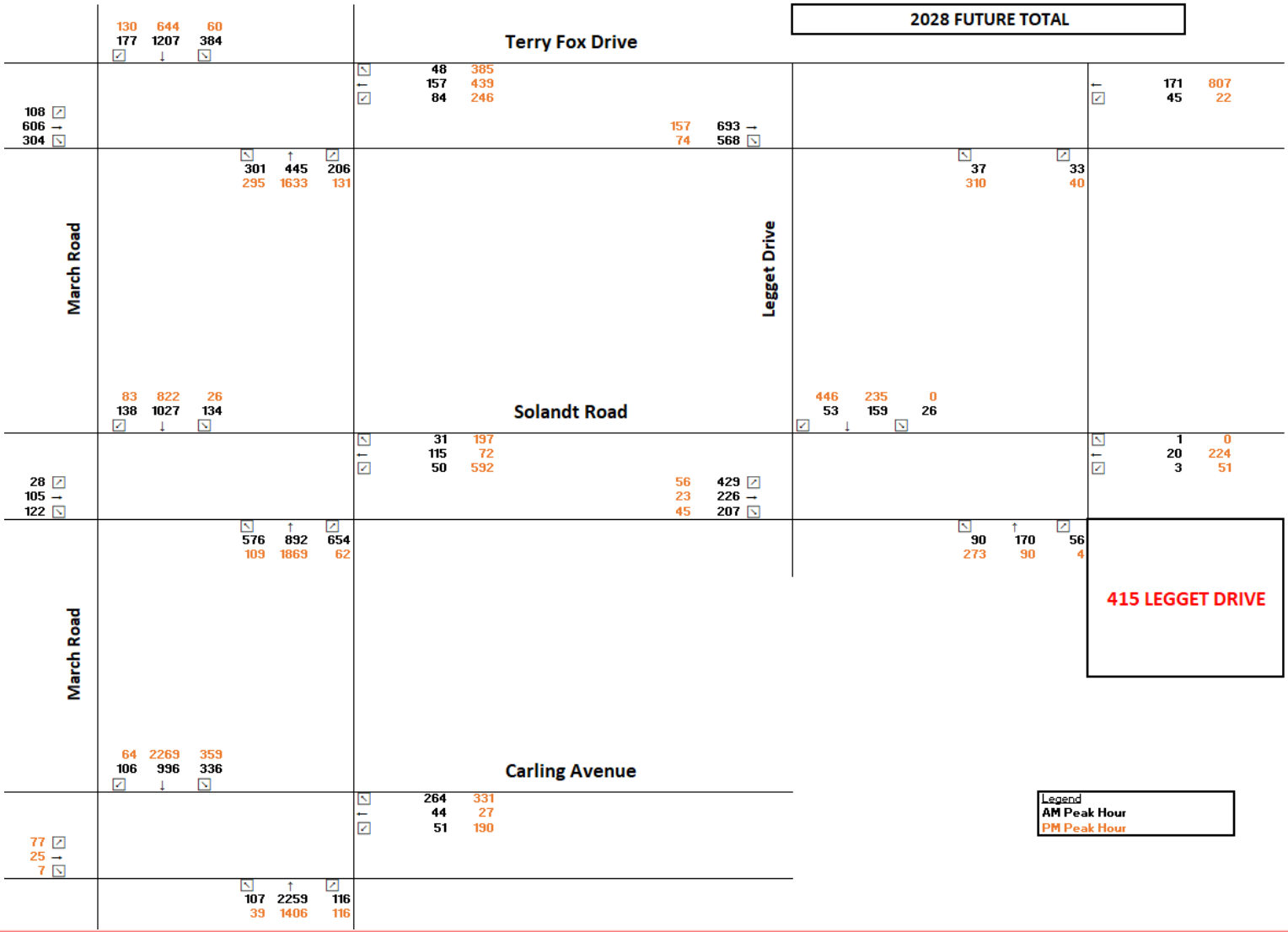


Figure 3-5. 2028 Future Total Volumes

APPENDIX

A CIRCULATION COMMENT / RESPONSE

APPENDIX

B SCREENING FORM

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	415 Legget Drive
Description of Location	Located on the north side of Legget Drive east of Solandt Road
Land Use Classification	Industrial
Development Size (units)	N/A
Development Size (m^2)	17,800 (total building area of two new warehouse/storage buildings)
Number of Accesses and Locations	No vehicle accesses proposed
Phase of Development	Phase 2
Buildout Year	N/A

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

2. Trip Generation 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

** 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.*

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

Two proposed buildings >5,000 m^2

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?		X
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		X

**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).*

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		X
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)?		X
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		X
Does the development include a drive-thru facility?		X

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

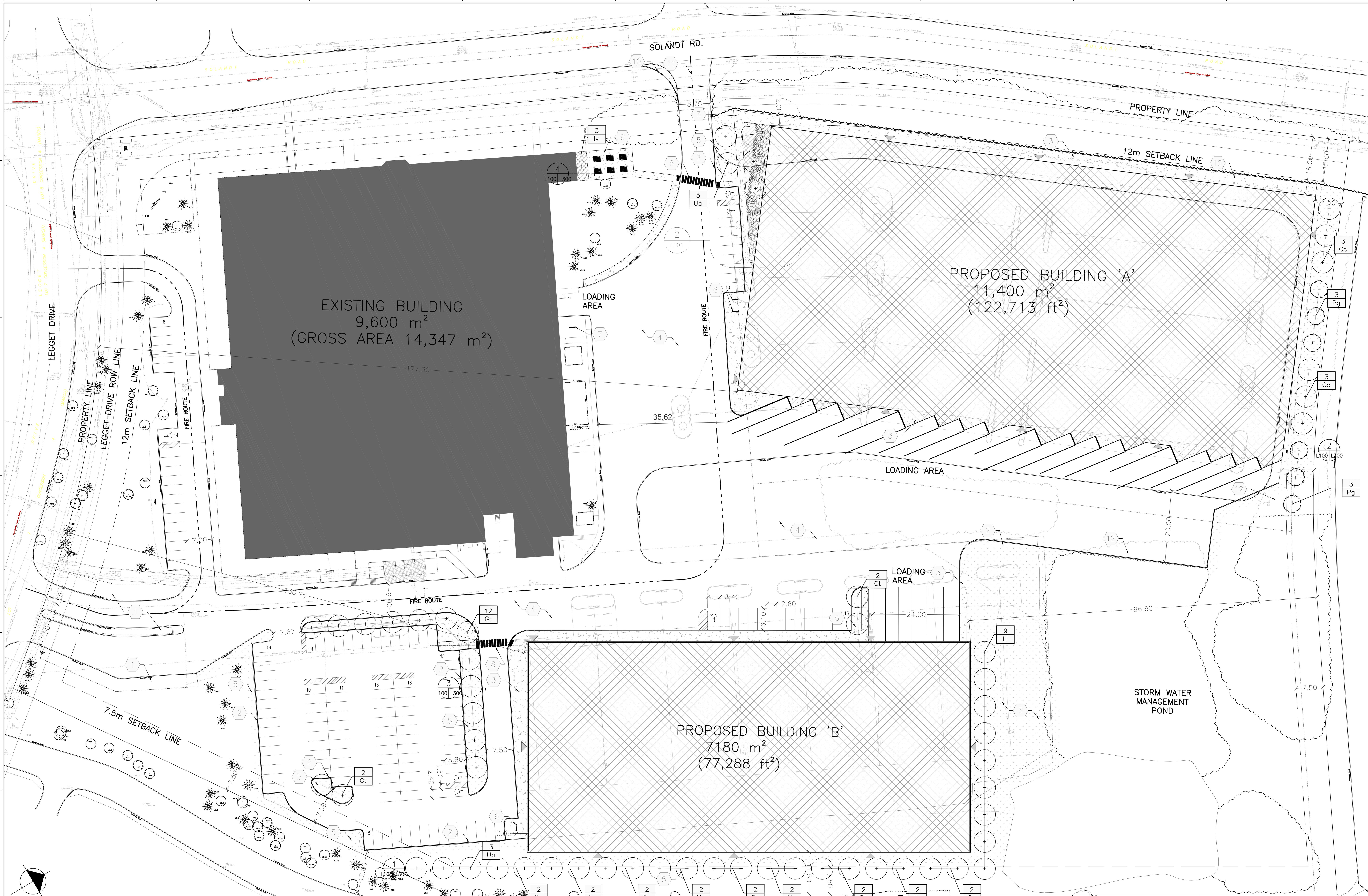
5. Summary

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

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX

C SITE PLAN



1 SITE PLAN LEGGET DRIVE
L100 1:400

SITE INFORMATION:

LEGAL DESCRIPTION:
PART BLOCKS 33 AND 34, PLAN 4M–280, BEING PARTS 7, 8, AND 9 ON PLAN 4R29533

EASEMENTS:
LT256203; SUBJECT TO AN EASEMENT OVER PART 8, PLAN 4R29533 AS IN LT240531; CITY OTTAWA, PINs 04517–1998 AND 04517–200

MUNICIPAL ADDRESS:
415 LEGGET DRIVE / 2700 SOLANDT ROAD, OTTAWA, ONT

SITE AREA:
72,859.8m^2 (784,282 FT^2)

BUILDING AREA:
EXISTING: 9,600m^2 (103,337 FT^2)
PROPOSED: 18,580m^2 (200,000 FT^2)

MAX. BUILDING HEIGHT (IP):
22m (72'–2$\frac{1}{8}$")

ZONING INFORMATION:

ZONING:
BUSINESS PARK INDUSTRIAL ZONE (IP–6)

PROPOSED LOT COVERAGE:
39% (MAX. ALLOWABLE 45%)

BUILDING 'A' SETBACKS:
MIN. FRONT YARD: 187.56m (REQ. 12m)
MIN. EXT SIDE YARD: 12m (REQ. 12m)
MIN. REAR YARD: 8.96m (REQ. 7.5m)

BUILDING 'B' SETBACKS:
MIN. FRONT YARD: 129.87m (REQ. 12m)
MIN. INT SIDE YARD: 12m (REQ. 7.5m)
MIN. REAR YARD: 93.14m (REQ. 7.5m)

PARKING REQUIREMENTS:

1. WAREHOUSE:
0.8 PER 100m^2 FOR THE FIRST 5000m^2 GROSS FLOOR AREA, 0.4 PER 100m^2 ABOVE 5000m^2 GROSS FLOOR AREA
= 152 SPACES

2. ACCESSIBLE PARKING REQ.:
3 TYPE A
3 TYPE B

TOTAL PARKING PROVIDED:
152 SPACES PROVIDED (152 REQ.)
18 LOADING SPACES PROVIDED

BICYCLE PARKING:
1 STALL PER 2000m^2 GROSS FLOOR AREA
20 SPACES PROVIDED (15 REQ.)

PLANTING NOTES:

1. LOCATION OF ALL PLANTS MATERIAL TO BE MARKED OUT ON SITE AND APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO PLANTING
2. TREE SPACING, UNLESS OTHERWISE NOTED:
   - DECIDUOUS TREES: 6.0m MIN.
   - CONIFEROUS TREES: 3.0m MIN.
3. SHRUB SPACING, UNLESS OTHERWISE NOTED:
   - SMALL DECIDUOUS: 600mm O.C.
   - LARGE DECIDUOUS: 900mm O.C.
   - CONIFEROUS: 750mm O.C.
   - GRASSES: 450mm O.C.
4. ALL PLANT MATERIAL TO BE BEST QUALITY, REVIEWED ON SITE BY LANDSCAPE ARCHITECT PRIOR TO PLANTING. UNACCEPTABLE PLANTS TO BE REPLACED AND NEW PLANTS APPROVED PRIOR TO PLANTING. REPLACEMENTS ARE AT CONTRACTOR'S OWN COST.
5. ALL PLANTING EXCAVATIONS ARE TO BE REVIEWED AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLACEMENT OF DRAINAGE COURSE, FILTER FABRIC AND/OR SOIL.
6. SHRUB BEDS AT PARKING AREA TO HAVE PLANTS SET BACK SO THAT THERE IS A 450mm WIDE MULCH EDGE CURB WITH FULL GROWTH OF PLANTS.

PROPOSED PLANT LIST:

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SPACING (mm) (75%)	SIZE	COMMENTS
TREES - DECIDUOUS						TREES TO BE BALL & BURLAP. SOURCED IN SAME GROWING ZONE. ALL TREES SHOULD HAVE 5 TO 7 MAIN BRANCHES WITH DOMINANT LEADER BRANCH AND WITHOUT DEFECT. **MIN ROOT ZONE VOLUME PER TREE: 30 CU. M.**
Ll	9	Larix laricina	Tamarack	as shown	65mm Cal. B&B	
Cc	16	Carpinus caroliniana	Ironwood	as shown	50mm Cal. B&B	
Gt	16	Gleditsia triacanthos 'Draves'	Street Keeper Honeylocust	as shown	65mm Cal. B&B	
Ua	16	Ulmus americana 'Brandon'	Brandon Elm	as shown	65mm Cal. B&B	
TREES - CONIFEROUS						TREES TO BE BALL & BURLAP. SOURCED IN SAME GROWING ZONE. ALL TREES SHOULD HAVE DENSE GROWTH AND WITHOUT DEFECT. **MIN ROOT ZONE VOLUME PER TREE: 30 CU. M.**
Pg	6	Picea glauca	White Spruce	as shown	180 cm height min. B&B	
SHRUBS - DECIDUOUS						SHRUBS TO BE IN POTS. SOURCED IN SAME GROWING ZONE. ALL SHRUBS SHOULD HAVE DENSE GROWTH, WELL ROOTED AND WITHOUT DEFECT. **MIN ROOT ZONE VOLUME PER SHRUB: 5 CU. M**
Iv	3	Ilex verticillata	Winterberry	as shown	2 gal.	
Ea	36	Euonymus alatus 'Odom'	Burning Bush	900	2 gal.	
SHRUBS - CONIFEROUS						SHRUBS TO BE IN POTS. SOURCED IN SAME GROWING ZONE. ALL SHRUBS SHOULD HAVE DENSE GROWTH, WELL ROOTED AND WITHOUT DEFECT. **MIN ROOT ZONE VOLUME PER SHRUB: 5 CU. M**
Js	21	Juniperus sabina 'Arcadia'	Arcadian Juniper	1800	2 gal.	
PERENNIAL GRASSES						PERENNIALS TO BE IN POTS. SOURCED IN SAME GROWING ZONE. ALL PERENNIALS SHOULD HAVE DENSE GROWTH, WELL ROOTED AND WITHOUT DEFECT.
Ep	84	Euphorbia polychroma 'Bonfire'	Bonfire Cushion Spurge	450	1 gal.	
Cg	48	Calamagrotis x acutiflora 'Overdam'	Veriegated Reed Grass	600	2 gal.	

KEYNOTES:

1. EXISTING PLANTING BED
2. CONCRETE CURB
3. CONCRETE SIDEWALK
4. ASPHALT PAVEMENT
5. SODDED AREA
6. PROPOSED BICYCLE RACKS
7. EXISTING BICYCLE RACKS
8. PAINTED CROSSWALK
9. RELOCATE EXISTING PICNIC TABLES, SUPPLY NEW AS REQUIRED
10. MODIFIED EXISTING APPROACH TO ACCOMMODATE 12m TURN RADIUS
11. FIRE ACCESS ROUTE
12. REMOVAL OF EXISTING PLANTING

LAYOUT NOTES:

1. CONTRACTOR TO CONFIRM ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO CONTRACTOR ADMINISTRATOR PRIOR TO CONSTRUCTION
2. LAYOUT TO BE APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO ANY CONSTRUCTION OR REMOVALS
3. ALL DIMENSIONS ARE IN METRIC UNLESS OTHERWISE NOTED
4. CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATIONS, REMOVALS, DISPOSALS AND ROUGH GRADING AS REQUIRED TO CONSTRUCTION ALL WORKS AS SHOWN ON ALL PLANS, DETAILS AND SPECIFICATIONS
5. LOCATION OF ALL UTILITIES SHOWN FOR ILLUSTRATION ONLY. CONTRACTOR MUST CONTACT ALL UTILITIES REGARDING RULES FOR WORKING IN THE AREA OF THE UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR MUST CONFIRM LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION
6. ALL EXISTING ROADS, SIDEWALKS, CURBS, FENCING, PAVING, SODDED AREAS, AND APPROACHES, ETC. TO REMAIN TO BE PROTECTED DURING CONSTRUCTION TO CONTRACT ADMINISTRATOR'S APPROVAL AT THE CONTRACTORS OWN COSTS.
7. ALL EXISTING TREES, SHRUB BEDS, MULCH BEDS, AND SOD TO REMAIN TO BE PROTECTED DURING CONSTRUCTION. AREAS DAMAGED DURING CONSTRUCTION TO BE REPAIRED TO CONTRACT ADMINISTRATOR'S APPROVAL AT THE CONTRACTORS OWN COST.
8. USE SPECIFIED BACKFILL IN ALL TRENCHES RUNNING BELOW ALL STRUCTURES, PAVING, WALKWAYS, ETC.
9. FILL ALL HOLES AND LOW AREAS TO DESIGN SUBGRADE WITH COMPACTED FILL (SUITABLE TO SURFACE FINISH), FOR SODDED/PLANTED AREAS USE COMPACTED CLEAN EARTH FILL SUITABLE FOR PLANT GROWTH. FOR PAVED AREAS USE COMPACTED GRANULAR BASE.
10. ALL TREES WITHIN OR IMMEDIATELY ADJACENT TO AREA OF WORK TO BE PROTECTED TO CITY OF OTTAWA TREE PROTECTION STANDARDS.

LEGEND:

- TOPSOIL AND SOD
- PLANT BED
- CONCRETE SIDEWALK
- PROPERTY LINE
- EXISTING CURB
- NEW CURB
- FIRE ACCESS ROUTE
- ACCESSIBLE PARKING STALL
- NEW DECIDUOUS TREE
- NEW CONIFEROUS TREE
- EXISTING TREE TO REMAIN. TREES TO REMAIN ARE TO BE PROTECTED TO CITY OF OTTAWA STANDARDS
- PROPOSED DECIDUOUS SHRUB
- PROPOSED CONIFEROUS SHRUB
- PROPOSED PERENNIAL GRASS
- TACTILE WALKING SURFACE INDICATOR (TWSI)
- EXIT DOOR LOCATIONS
- A1 / A101 | A501 — DETAIL CALLOUT

PLANT KEY
/ Ps
– PLANT QUANTITY
– PLANT SPECIES

ARCHITECTURE | 49
1345 ROSEMOUNT AVENUE
CORNWALL, ONTARIO, CANADA K6J 3E5
PHONE: 613-933-5604 | FAX: 613-936-0335 | WWW.ARCHITECTURE49.COM

CONSULTANT - SUB CONSULTANT:

CONSULTANT - SUB CONSULTANT:

SEAL:

CLIENT:

CLIENT REF. #:

PROJECT:
ACCESS STORAGE LEGGET DRIVE

KEY PLAN:

ISSUED FOR - REVISION:

IS	RE	DATE	DESCRIPTION
1	0	OCT 25, 2021	ISSUED FOR SITE PLAN APPROVAL

PROJECT NO: 219-00058-03
DATE: OCTOBER 25, 2021
ORIGINAL SCALE: As indicated
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm
DESIGNED BY: AH
DRAWN BY: AH / NR / SG
CHECKED BY: AH
DISCIPLINE: LANDSCAPE
TITLE: PROPOSED SITE PLAN
SHEET NUMBER: L100
SHEET #: OF
ISSUE:
DATE OF:
REV #

APPENDIX

D TRANS O-D SURVEY

Kanata - Stittsville

Demographic Characteristics

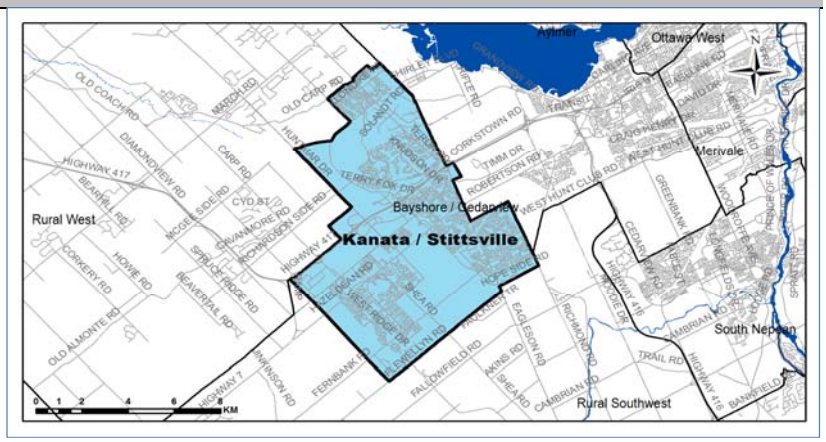
Population	105,210	Actively Travelled	83,460
Employed Population	49,640	Number of Vehicles	64,540
Households	38,010	Area (km^2)	82.6

Occupation

Status (age 5+)	Male	Female	Total
Full Time Employed	24,670	19,590	44,260
Part Time Employed	1,540	3,840	5,380
Student	13,630	13,410	27,040
Retiree	6,480	8,350	14,820
Unemployed	850	940	1,790
Homemaker	160	3,310	3,470
Other	350	1,010	1,360
Total:	47,690	50,440	98,120

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	5,940	6,920	12,860
Licensed Drivers	36,280	36,790	73,070
Telecommuters	200	380	580
Trips made by residents	135,300	143,330	278,630

Selected Indicators	
Daily Trips per Person (age 5+)	2.84
Vehicles per Person	0.61
Number of Persons per Household	2.77
Daily Trips per Household	7.33
Vehicles per Household	1.70
Workers per Household	1.31
Population Density (Pop/km2)	1270

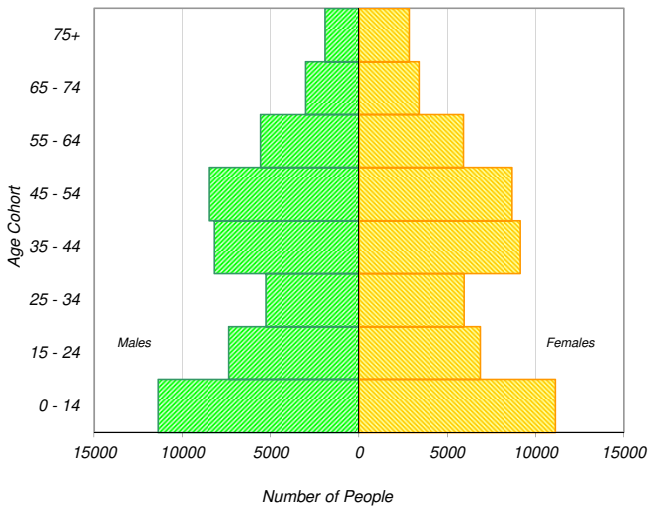


Household Size		
1 person	5,810	15%
2 persons	11,660	31%
3 persons	7,490	20%
4 persons	8,890	23%
5+ persons	4,160	11%
Total:	38,010	100%

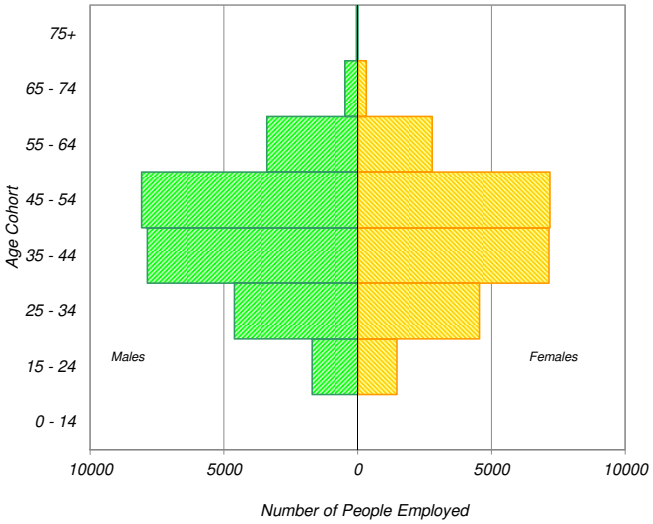
Households by Vehicle Availability		
0 vehicles	1,050	3%
1 vehicle	14,090	37%
2 vehicles	19,110	50%
3 vehicles	3,000	8%
4+ vehicles	770	2%
Total:	38,010	100%

Households by Dwelling Type		
Single-detached	21,610	57%
Semi-detached	3,890	10%
Townhouse	10,550	28%
Apartment/Condo	1,960	5%
Total:	38,010	100%

Population



Employed Population

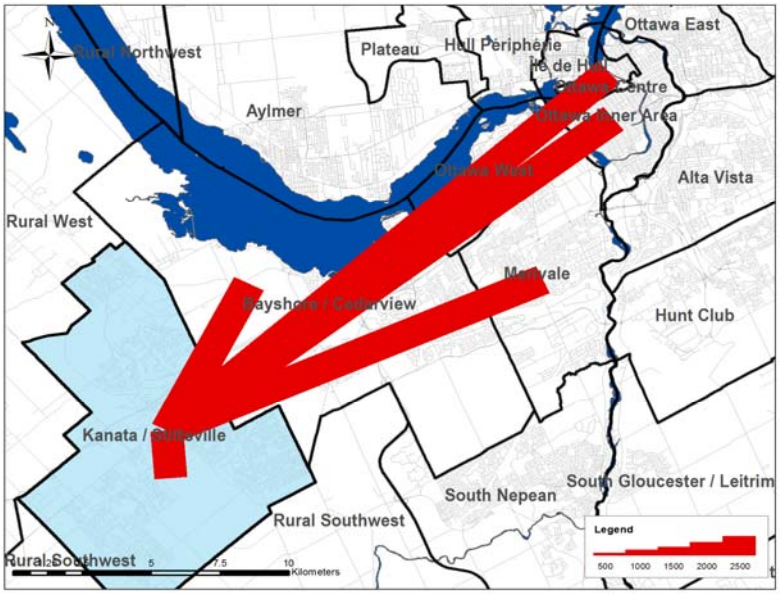


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Destinations of Trips from Kanata - Stittsville

AM Peak Period



Summary of Trips to and from Kanata - Stittsville

AM Peak Period (6:30 - 8:59)	Destinations of Trips From		Origins of Trips To	
Districts	District	% Total	District	% Total
Ottawa Centre	4,560	8%	140	0%
Ottawa Inner Area	3,350	6%	970	2%
Ottawa East	660	1%	260	1%
Beacon Hill	280	0%	170	0%
Alta Vista	1,810	3%	660	1%
Hunt Club	490	1%	420	1%
Merivale	3,410	6%	1,200	3%
Ottawa West	2,020	4%	840	2%
Bayshore / Cedarview	5,010	9%	2,420	5%
Orléans	290	1%	500	1%
Rural East	100	0%	30	0%
Rural Southeast	50	0%	260	1%
South Gloucester / Leitrim	60	0%	140	0%
South Nepean	690	1%	1,800	4%
Rural Southwest	1,130	2%	1,850	4%
Kanata / Stittsvile	30,360	54%	30,360	66%
Rural West	1,050	2%	3,250	7%
Île de Hull	670	1%	30	0%
Hull Périphérie	160	0%	30	0%
Plateau	100	0%	230	0%
Aylmer	0	0%	190	0%
Rural Northwest	20	0%	60	0%
Pointe Gatineau	20	0%	80	0%
Gatineau Est	0	0%	60	0%
Rural Northeast	30	0%	50	0%
Buckingham / Masson-Angers	30	0%	10	0%
Ontario Sub-Total:	55,320	98%	45,270	98%
Québec Sub-Total:	1,030	2%	740	2%
Total:	56,350	100%	46,010	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	27,180	29%	17,020	18%	14,550	9%
School	7,070	7%	2,500	3%	15,110	9%
Shopping	6,070	6%	9,150	10%	22,480	14%
Leisure	8,450	9%	10,590	11%	17,090	11%
Medical	2,520	3%	1,170	1%	2,660	2%
Pick-up / drive passenger	6,570	7%	5,470	6%	15,190	9%
Return Home	33,610	35%	45,620	48%	65,770	41%
Other	3,560	4%	3,590	4%	8,440	5%
Total:	95,030	100%	95,110	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	18,030	69%	11,020	70%	7,430	24%
School	4,890	19%	2,280	15%	11,740	39%
Shopping	170	1%	320	2%	760	3%
Leisure	340	1%	400	3%	780	3%
Medical	330	1%	230	1%	350	1%
Pick-up / drive passenger	1,260	5%	580	4%	4,760	16%
Return Home	290	1%	380	2%	1,980	7%
Other	670	3%	430	3%	2,560	8%
Total:	25,980	100%	15,640	100%	30,360	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	390	2%	350	1%	930	2%
School	370	2%	0	0%	90	0%
Shopping	1,030	5%	1,910	7%	5,100	14%
Leisure	2,140	11%	3,080	11%	4,130	11%
Medical	230	1%	180	1%	400	1%
Pick-up / drive passenger	1,980	10%	1,980	7%	3,410	9%
Return Home	12,130	64%	20,550	71%	21,560	58%
Other	680	4%	860	3%	1,850	5%
Total:	18,950	100%	28,910	100%	37,470	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	351,430		46%
AM Peak Period	71,980	20%	42%
PM Peak Period	85,330	24%	44%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	63,470	67%	63,830	67%	92,190	57%
Auto Passenger	15,220	16%	14,920	16%	31,880	20%
Transit	12,200	13%	12,270	13%	4,050	3%
Bicycle	360	0%	410	0%	960	1%
Walk	40	0%	50	0%	21,080	13%
Other	3,730	4%	3,660	4%	11,130	7%
Total:	95,020	100%	95,140	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	15,360	59%	11,530	74%	13,630	45%
Auto Passenger	2,450	9%	1,160	7%	5,050	17%
Transit	6,230	24%	1,290	8%	1,210	4%
Bicycle	30	0%	80	1%	220	1%
Walk	0	0%	40	0%	5,730	19%
Other	1,900	7%	1,560	10%	4,510	15%
Total:	25,970	100%	15,660	100%	30,350	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	13,850	73%	17,660	61%	21,240	57%
Auto Passenger	3,240	17%	4,270	15%	8,570	23%
Transit	1,270	7%	5,980	21%	670	2%
Bicycle	40	0%	100	0%	260	1%
Walk	40	0%	0	0%	4,570	12%
Other	520	3%	910	3%	2,160	6%
Total:	18,960	100%	28,920	100%	37,470	100%

Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.24	1.23	1.35
AM Peak Period	1.16	1.10	1.37
PM Peak Period	1.23	1.24	1.40

Transit Modal Split	From District	To District	Within District
24 Hours	13%	13%	3%
AM Peak Period	26%	9%	6%
PM Peak Period	7%	21%	2%

APPENDIX

E 2707 SOLANDT TIA

NOVATECH

Engineers, Planners & Landscape Architects

Engineering

- Land / Site Development
- Municipal Infrastructure
- Environmental / Water Resources
- Traffic / Transportation
- Structural
- Recreational

Planning

- Land / Site Development
- Planning Application Management
- Municipal Planning Documents & Studies
- Expert Witness (OMB)
- Wireless Industry

Landscape Architecture

- Urban Design & Streetscapes
- Open Space, Parks & Recreation Planning
- Community & Residential Developments
- Commercial & Institutional Sites
- Environmental Restoration

36 Years

Proposed Office Building
2707 Solandt Road, Ottawa
Transportation Impact Assessment

Engineering excellence. Planning precision. Inspired landscapes.

Figure 6: Site-Generated Traffic