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35 Years

Six-Storey Mixed-Use Building
3443 Innes Road

Transportation Impact Assessment Report

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Six-Storey Mixed-Use Building
3443 Innes Road

Transportation Impact Assessment Report

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

December 2017

Novatech File: 117077
Ref: R-2017-193

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Engineers, Planners & Landscape Architects

December 19, 2017

BY HAND

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: **Asad Yousfani**
Project Manager, Infrastructure Approvals

Dear Sir:

Reference: **Six-Storey Mixed Use Building**
3443 Innes Road
Transportation Impact Assessment Report
Novatech File No.117077

We are pleased to submit the following Transportation Impact Assessment (TIA) Report in support of Zoning and Site Plan Application for 3443 Innes Road for your review and sign-off. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

Yours truly,

NOVATECH

Lisa Bowley, P.Eng.
Project Manager | Land Development Engineering

Encl.

cc: Ryan Koolwine

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

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1.0 INTRODUCTION

The Transportation Impact Assessment (TIA) report has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for 3443 Innes Road.

The subject site has an area of 0.33 hectares and is currently occupied by a residential dwelling. The site is bound by Innes Road to the south, Pagé Road to the east, existing residential to the north and west. An aerial photo of the subject site is provided in Figure 1.

Figure 1: Aerial Photo of Subject Site

2.0 PROPOSED DEVELOPMENT

This proposed six-storey mixed use development includes:

Six ground floor commercial units with a total combined area of 499 m2
Thirty-five residential units located above the commercial units
Seventy-one parking spaces
Total building square footage: 2,944 m2 (31,689 sq. ft.)

The subject site has two proposed accesses including one full movement access to Pagé Road and a right-in, right-out (RIRO) driveway to Innes Road.

The proposed site development is anticipated to be constructed in a single phase with occupancy in 2019.

A copy of the proposed Site Plan is included in **Appendix A**.

3.0 SCREENING

3.1 Screening Form

The City of Ottawa Transportation Impact Assessment Guidelines (TIA) identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form.

The trigger for Trip Generation was reviewed based on ITE rates and our understanding of the proposed development.

Converting the ITE rates for the residential units yields 33 person trips. The number of vehicle trips for retail using the ITE rate (Land Use Code 826) is 35 vph in p.m. peak. The proposed number of retail use parking spaces is 26, which exceeds the City's zoning bylaw minimum requirement of 17 spaces. Since the ITE rates appear to overestimate the peak hour trip generation for this size of land use, we suggest assuming that a conservative 70% of these spaces will empty and fill in the peak hour. This equates to 18 peak hour vehicle trips, or 23 (18 x 1.28) person trips using the retail space, for a combined total of 56 peak hour person trips visiting the site. Therefore, the trip generation trigger, 60 person trips, is not met.

Our review of the development and the screening form indicate that both the Location and Safety triggers are met.

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

4.0 SCOPING

4.1 Existing Conditions

4.1.1 Roadways

Innes Road is an arterial roadway that runs on an east-west alignment between St. Laurent Boulevard and Dunning Road. Within the study area, Innes Road has a four-lane divided urban cross section. Innes Road is a designated truck route with a posted speed limit of 60km/h. For the subject section of Innes Road, the City of Ottawa's Official Plan identifies a requirement to protect a right-of-way width of 37.5m. A road widening will be taken across the subject site as shown on the proposed Site Plan.

Pagé Road north of Innes Road is a local roadway that runs on a north-south alignment between Innes Road and Meadowglen Drive. South of Innes, Pagé Road is a collector Road extending to

Renaud Road in the south. In the vicinity of the subject site, it has a two-lane undivided semi-urban cross-section with a sidewalk on the west side. The posted speed limit is 40km/h.

On-street parking is permitted on the both sides of Pagé Road. No trucks are permitted on Pagé Road.

In 2013, traffic calming road modification were constructed on Pagé Road. The traffic calming includes three speed humps spaced approximately 75m apart coupled with roadway narrowings. The intent of these traffic calming measure was to reduce vehicle speeds, reduce aggressive driving behaviour and improve the pedestrian environment along this section of Pagé Road.

4.1.2 Intersections

Innes Road and Pagé Road

- Signalized intersection
- Eastbound/Westbound: one through lane, one shared through/right turn lane and one left turn lane
- Northbound/Southbound: one shared through/right/left turn lane

4.1.3 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of Innes Road, and on the west side of Pagé Road.

Innes Road and Pagé Road are classified as spine cycling routes. Bike lanes are provided eastbound and westbound along Innes Road. Pagé Road north of Innes Road is a suggested cycling route equipped with shared use travel lanes.

4.1.4 Transit

The nearest bus stops include OC Transpo bus stops #1194 and #7735 at the northwest and southeast corners of Innes Road and Pagé Road which serve route 94 and two special school routes (612 and 648). OC Transpo Bus stop locations are shown in Figure 2.

OC Transpo route 94 is a transitway route that travels between the Millennium transit station in Orleans trough downtown to Riverview transit station in Barrhaven. This route operates every 15 minutes on weekdays between 6:00am and 9:00pm. This bus route operates seven days a week.

Figure 2: OC Transpo Bus Stop Locations

4.1.5 Existing Traffic Volumes

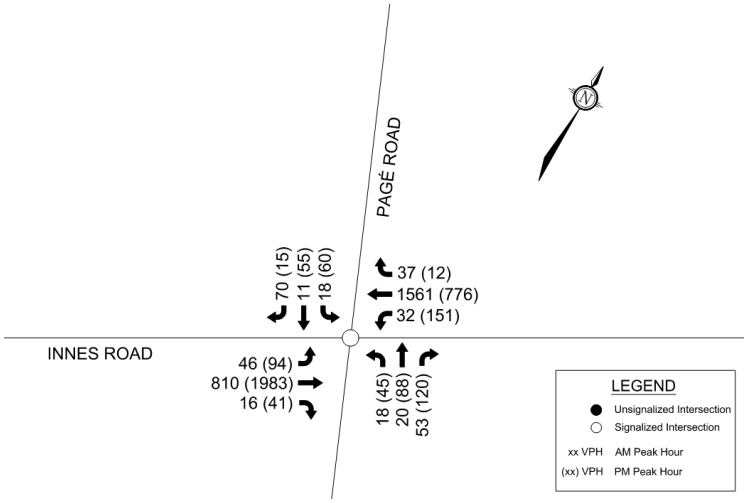
Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist and vehicular traffic volumes at Innes Road and Pagé Road. The traffic count was completed on the following date:

- Innes Road and Pagé Road July 28, 2015

The retirement residence at the southeast corner of the intersection was construction in 2014 and is reflected in the City's 2015 count.

Peak hour summary sheets of the above traffic count are included in **Appendix C**. Existing weekday AM and PM peak hour traffic volumes are shown in **Figure 3**.

Figure 3: Existing Traffic Volumes



4.1.6 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections. Copies of the collision summary reports are included in **Appendix D**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following table summarizes the number of collisions at Innes Road and Pagé Road between January 1, 2012 to January 1, 2017.

Table 1: Reported Collisions

Intersection	Number of Reported Collisions
Innes Road and Pagé Road	28

A total of 28 collisions were reported at the Innes Road/Pagé Road intersection over the last five years. Fourteen of the reported collisions were rear-end impacts, six were turning movement impacts, four were angle impacts, two were sideswipe impacts, and two were single vehicle/other impacts. Eight of the collisions caused personal injuries, but none caused fatalities. No patterns of six or more collision types were noted in any one movement.

The roads are generally flat and have clear sight lines at this intersection.

The two-single vehicle impacts at the intersection involved pedestrians with non-fatal injuries both of these accidents involved a northbound vehicle turning left.

4.2 Planned Conditions

Innes Road and the Brian Coburn Extension are identified as Transit Priority Corridors with isolated measures in the Affordable Rapid Transit and Transit Priority network; the Blackburn Hamlet Bypass Extension (BHBPE) is identified as Transit Priority Corridor with continuous lanes in the Affordable Rapid Transit and Transit Priority network.

The City of Ottawa's 2013 TMP identifies the extension of Brian Coburn a new two-lane road between Navan and Mer Bleue as a Phase 1 project with completion in 2019. As part of the Brian Coburn extension, Pagé Road has become discontinuous at the Hydro corridor (north of the extension).

A Phase 2 project for completion between 2020 and 2025 includes construction on the BHBPE of four lanes between Innes Road and Navan Road.
The BHBPE and Brian Coburn Extension will provide a major parallel arterial route south of the Innes Road corridor and may provide some relief to the east-west through volumes on Innes Road.

4.3 Other Developments

The Innes Road Development Corporation has submitted a Plan of Subdivision application for 3490 Innes Road to the City of Ottawa. The Transportation Impact Study prepared by Parsons (dated December 2016) indicates 534 residential units will be developed in two phases between 2020 and 2024. The development includes a proposed signalized intersection on Innes Road approximately 220m east of Pagé Road.

4.4 Study Area and Time Periods

The study area for this report will include the boundary streets of Innes Road and Pagé Road, and the proposed site accesses. The site accessed include one full movement access to Pagé Road and a right-in, right-out driveway on Innes Road.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The proposed site is anticipated to be constructed with full occupancy in 2019.

4.5 Exemptions Review

As the trip generation trigger was not met, the Transportation Demand Management (Module 4.5), Neighbourhood Traffic Management (Module 4.6), Transit (Module 4.7), Network Concept (Module 4.8) and Network Intersections (Module 4.9) are not required for analysis. The following modules are included in the TIA report:

- Module 4.1 – Development Design
- Module 4.2 – Parking
- Module 4.3 – Boundary Street Design
- Module 4.4 – Access Intersections Design

5.0 DEVELOPMENT GENERATED TRAFFIC

5.1 Trip Generation

5.1.1 Trip Generation Rates

Site generated traffic has been estimated using the vehicle trip rates identified in the ITE Trip Generation Manual (9th Edition) for Residential Condominium/Townhouse (Land Use Code 230).

The ITE Trip Generation Manual appears to overestimate peak hour trip generation for Specialty Retail with a small footprint. Therefore, the trip generation rates for the retail space has been based on first principles. The proposed number of retail use parking spaces is 26, which exceeds the City's Zoning Bylaw minimum requirement of 17 spaces. A conservative 70% of these spaces will be assumed to empty and fill in the peak hour. This corresponds to 18 vehicles in each of the AM and PM peak hours.

The number of vehicle trips generated by the proposed development during the weekday a.m. and p.m. peak hours is summarized in **Table 2**.

Table 2: Trip Generation

Land Use	Land Use Code	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Residential	230	4	18	22	17	9	26
Retail	Based on Parking	9	9	18	9	9	18

The ITE vehicle trips have been converted to person trips using a factor of 1.28, consistent with the TIA guidelines. Person trips generated by the proposed site are shown in **Table 3**.

Table 3: Projected Site-Generated Person Trips

Land Use	AM Peak			PM Peak		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Residential	5	23	28	22	11	33
Retail	11	12	23	11	12	23
Total	**16**	**35**	**51**	**33**	**23**	**56**

5.1.2 Mode Shares

The number of auto and non-auto trips that the site will generate has been estimated by categorizing the person trips by modal share. The modal shares are based on observed percentages in the 2011 TRANS O-D Survey Report that are specific to the region referred to as the Orleans district. The modal share values applied to the trips generated by the proposed development are based on all observed trips within the Orleans district, including those with an origin or destination beyond that area. A full breakdown of the projected person trips by modal share and arrival/departure is shown **Table 4**.

Table 4: Site-Generated Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Total Person Trips		**16**	**35**	**51**	**33**	**23**	**56**
Auto Driver	55%	9	19	28	18	13	31
Auto Passenger	10%	2	4	6	4	2	6
Transit	30%	4	11	15	10	7	17
Non-Auto	5%	1	1	2	1	1	2

5.2 Trip Distribution

The distribution of site generated traffic is based on the existing traffic patterns and the location of the subject site with respect to major area roadways.

The trip distribution assumptions are summarized as follows:

- 30% to/from the east via Innes Road
- 70% to/from the west via Innes Road

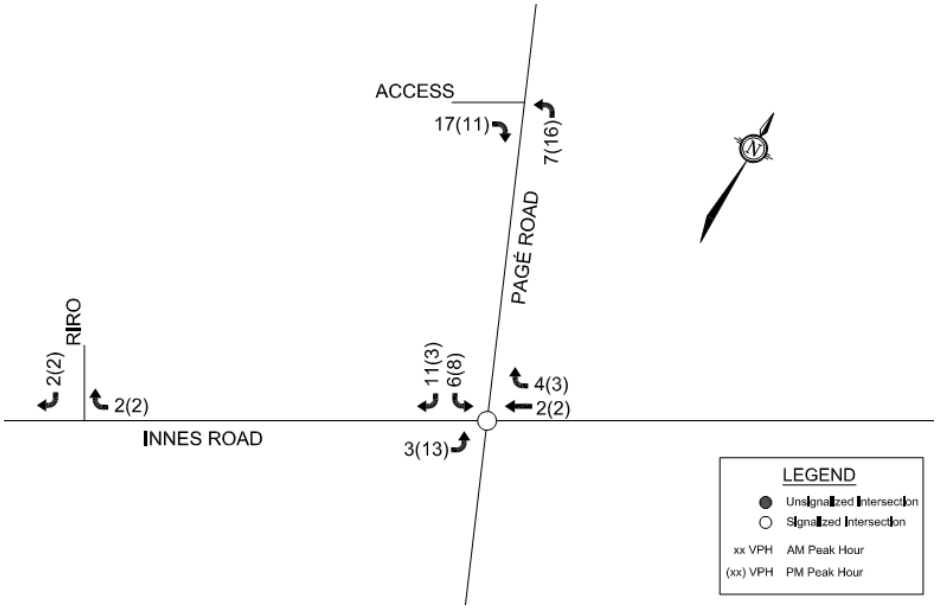
5.3 Trip Assignment

The proposed Site Plan (**Appendix A**) indicates the layout of the proposed site. Access to the underground parking garage entrance intended for building residents is located at the rear of the building. Due to this configuration, it is assumed that all site generated trips for the residential component would access the site from Pagé Road.

The building is surrounded by surface parking on the south and east sides. These parking spaces are intended to service the building's retail component. The site generated trips for the retail component has been assigned to the two accesses based on the trip distribution assumptions above.

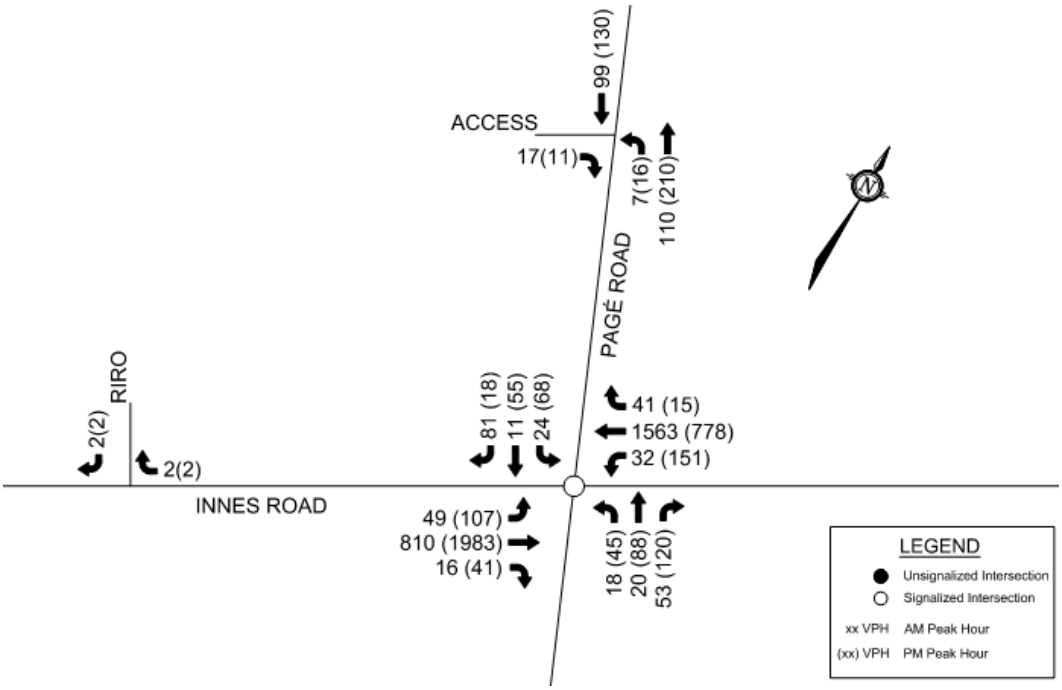
Site generated traffic volumes are shown in **Figure 4** for the weekday a.m. and p.m. peak hours.

Figure 4: Site Generated Traffic Volumes



Total traffic volumes have been calculated by adding the site traffic to existing traffic as shown in **Figure 5** for the weekday a.m. and p.m. peak hours.

Figure 5: Total Traffic Volumes



6.0 ANALYSIS

6.1 Development Design

6.1.1. Design for Sustainable Modes

The proposed Site Plan (**Appendix A**) shows the layout of the proposed site.

A walkway is proposed connecting the building entrances to the existing sidewalk at the northwest corner of Inner Road and Pagé Road. Sidewalk locations and bus stop locations adjacent to the subject site were previously described in Section 4.1, Existing Conditions. Walking distances to the adjacent bus stops is approximately 50m and 80m. Depressed sidewalk would be maintained across the proposed site accesses.

Bicycle parking for the residential units will be available on the surface with additional secure underground parking spaces in the garage. The number of bicycle parking spaces to be provided is reviewed in the subsequent parking section.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist has been conducted. A copy of the TDM checklist is included in **Appendix E**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

6.1.2 Circulation and Access

The garbage enclosures are located on the west side of the building.

The proposed fire route is in front of the building between the full movement access on Pagé Road and the RIRO access on Innes Road.

Due to the size of the commercial development, no loading spaces are required under the zoning by-law.

6.2 Parking

6.2.1 Parking Supply

The City of Ottawa Zoning By-law identifies a minimum requirement of vehicle and bicycle parking spaces. The site is located in Area C of Schedule 1A to the City's Zoning By-law. **Table 5** summarizes these requirements:

Table 5: Parking Supply

Use	Zoning by-law (minimum requirement)		Parking Provided	
	Vehicle Parking	Bicycle Parking	Vehicle Parking	Bicycle Parking
Residential	1.0/unit; 35	0.5/unit;18	38	18
Visitor	0.2/res unit; 7	-	7	-
Retail	3.4/100m^2; 18	-	26	-
Total	**60**	**18**	**71**	**18**

A total of 71 on-site parking spaces will be provided, satisfying the minimum requirements of the Zoning By-law. Thirty-four above-ground parking spaces and 37 underground parking spaces will be provided. The proposed bike parking will meet the minimum requirement of the by-law, with 10 underground bike parking spaces and 2-3 surface bike racks (4 spaces each) as shown on the Site Plan drawing.

Visitor parking will be available on the surface at the rear of the building.

The City of Ottawa Traffic and Parking By-law identifies a minimum requirement of one accessible vehicle parking space for any public parking area with 20-99 spaces. Two accessible spaces will be provided above ground and one space will be provided in the underground parking level. Therefore, the number of accessible parking spaces satisfies the by-law.

6.3 Boundary Street Design

6.3.1 Existing MMLOS Analysis

The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the LOS of each roadway segment for each mode of transportation. Schedule B of the City of Ottawa's Official Plan indicates all roadway segments are located in the General Urban Policy Area.

Figure 5, **6** and **7** show the existing pedestrian, bicycle and transit measures along the boundary streets, Innes Road and Pagé Road.

Figure 5: Existing Boundary Streets – Innes Road

Google Streetview

Figure 6: Existing Boundary Streets – Pagé Road

Google Streetview

Figure 7: Existing Boundary Streets – Northwest corner of Innes Road and Pagé Road

Google Streetview

Pedestrian Level of Service

The intent of the PLOS tool, as described in the MMLOS Guidelines, is to evaluate the level of pedestrian comfort, safety and convenience. Exhibit 4 of the MMLOS Guidelines was used to evaluate the existing segment PLOS within the project limits.

Exhibit 22 of the MMLOS Guidelines suggests that the minimum desirable PLOS target for the General Urban Area is LOS C for arterials (Innes) and local roads (Pagé).

The results of the segment PLOS analysis are shown in the following table:

Table 6: PLOS Segment Analysis

Segment	Vehicular Operation Speed	Sidewalk Width	Boulevard Width	Motor Vehicle Voume (AADT)	Presence of on-street Parking	Segment PLOS
Innes Road	60km/h	2.0	0.5 to 2	>3000	No	**D**
Pagé Road	40km/h	2.0	0	>3000	Yes	B

The existing conditions along this segment of Innes Road exceeds the desirable PLOS. Decreasing traffic volumes, adding on-street parking or increasing the boulevard width on Innes Road could improve the PLOS along Innes Road. As noted in the Planned Conditions section, it is anticipated that the Blackburn Hamlet Bypass Extension and Brian Coburn Extension may provide some relief to the east-west through traffic.

Bicycle Level of Service

The intent of the BLOS tool, as described in the MMLOS Guidelines, is to evaluate roadway segments for the level of traffic stress experienced by cyclists using the corridor. Exhibit 11 of the MMLOS Guidelines has been used to evaluate the existing segment BLOS within the boundary limits.

Exhibit 22 of the MMLOS Guidelines suggests that the minimum desirable BLOS target for Innes Road and Pagé Road is LOS C.

The results of the segment BLOS analysis are shown in the following table:

Table 7: BLOS Segment Analysis

Segment	Road Class/ Route Type	Type of Bikeway	Travel Lanes	Vehicular Operation Speed	Segment BLOS
Innes Road	Arterial; Spine Route	Bike Lane – not adjacent to parking lane	4 travel lanes, raised median	60km/h	C
Pagé Road	Local; Spine Route	Mixed Traffic	2 travel lanes	40km/h	B

The existing conditions along this segment meet the desirable BLOS.

Transit Level of Service

The intent of TLOS, as described in the MMLOS Guidelines, is to evaluate the relative attractiveness of transit to support the City's aim to ultimately increase transit modal share. Innes Road is identified as a Transit Priority Corridor with isolated measures in the City's 2013 TMP. Exhibit 15 has been used to evaluate the Innes Road segment TLOS.

Exhibit 22 of the MMLOS Guidelines suggests a target TLOS of LOS D.

Table 8: TLOS Segment Analysis

Facility Type	Level/Exposure to Congestion Delay, Friction and Incidents			Quantitative Measurement	LOS
	Congestion	Friction	Incident Potential		
Innes Road - Mixed Traffic - Limited parking/driveway friction	Yes	Low	Medium	Vt / Vp ≥ 0.8	D

The existing conditions along Innes Road for this segment meet the desirable TLOS.

Truck Level of Service

The intent of the TkLOS, as described in the MMLOS Guidelines, is to review the physical space available for trucks to negotiate corners quickly and easily, and to operate safely within travel lanes. Exhibits 20 of the MMLOS Guidelines have been used to evaluate the existing segment TkLOS within the project limits.

Innes Road is arterial truck route with a target TkLOS D General Urban Area, as defined in Exhibit 22 of the MMLOS Guidelines.

The TkLOS has not been reviewed for Pagé Road as trucks are not permitted on Pagé Road.

Table 9: TkLOS Segment Analysis

Curb Lane Width (m)	Number of Travel Lanes	LOS
Innes Road		
< 3.5	>2	A

The existing conditions along Innes Road for this segment meet the desirable TkLOS.

6.4 Access Intersection Design

6.4.1 Location and Design of Access

The existing median on Innes Road extends 18-meters west of the westerly edge of the proposed right-in right-out access. The east edge of the proposed right-in right-out access is 52.5-meters west of the Pagé Road property line which exceeds the minimum spacing requirement of 30m identified in the private approach by-law for the proposed uses and on-site parking. The access will have a width of 7.4 m and a clear throat length of 20m.

The proposed full-movement access onto Pagé Road is 46.5 meters north of the Innes Road, measured nearest edge to ROW limit. This also exceeds the minimum spacing requirement of 30m identified in the private approach by-law. The access will have a width of 6.7 m and a clear throat length of approximately 18 meters.

The all movement driveway is located approximately 1.5m from the north property line. The RIRO driveway is located 1.0m from the west property line. The City of Ottawa's Private Approach By-law identifies a maximum driveway width of 9.0m, a minimum requirement of 3.0m between any access and the nearest property line.

The entrance locations will require a waiver due to their proximity to the property lines.

6.4.2 Intersection Control

The two site accesses will be stop controlled with free flow conditions on the Pagé Road and Innes Road.

6.4.3 Intersection Design

Intersection capacity analysis has been completed for the 2019 total traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines. The results of the Synchro analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed synchro reports are included in **Appendix F**.

Table 8: Synchro Analysis

Intersection	AM Peak			PM Peak		
	Delay	LOS	Movement	Delay	LOS	Movement
Full Movement Access at Pagé Road	18.3s	C	EBR	12.5s	C	EBR
RIRO Access at Innes	9s	A	SBR	9s	A	SBR

Critical movements at the study area accesses are anticipated to operate with a LOS C or better during the weekday AM and PM peak hours, meeting the target for the General Urban Area. No roadway modifications are proposed for Innes Road or Pagé Road to accommodate this development.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

- The Transportation Impact Assessment (TIA) report has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for a mixed-use development at 3443 Innes Road.

- The subject site has two proposed accesses including one full movement access to Pagé Road and a right-in, right-out (RIRO) driveway to Innes Road. The two site accesses will be stop controlled with free flow conditions on the Pagé Road and Innes Road. The entrance locations will require a waiver due to their proximity to the property lines.

- Our review of the development and the screening form indicate that both the Location and Safety triggers are met.

- A total of 71 on-site motor vehicle parking spaces will be provided, satisfying the minimum requirements of the Zoning By-law. Bicycle parking will be provided on the surface and in the underground parking garage.

- The MMLOS guidelines were used to evaluate the LOS of each roadway segment for each mode of transportation. Schedule B of the City of Ottawa's Official Plan indicates all roadway segments are located in the General Urban Policy Area.

- The existing conditions along this segment of Innes Road exceeds the desirable Pedestrian (P) LOS. Decreasing traffic volumes, adding on-street parking or increasing the boulevard width on Innes Road could improve the PLOS along Innes Road. It is

anticipated that the Blackburn Hamlet Bypass Extension and Brian Coburn Extension may provide some relief to the east-west through traffic.

- The bicycle LOS, Transit LOS and the Truck LOS for Innes Road and Pagé Road meet the desirable targets for the General Urban Area.
- Critical auto movements at the study area accesses are anticipated to operate with a LOS C or better during the weekday AM and PM peak hours, meeting the target for the General Urban Area.
- No roadway modifications are proposed for Innes Road or Pagé Road to accommodate the development of 3443 Innes Road.

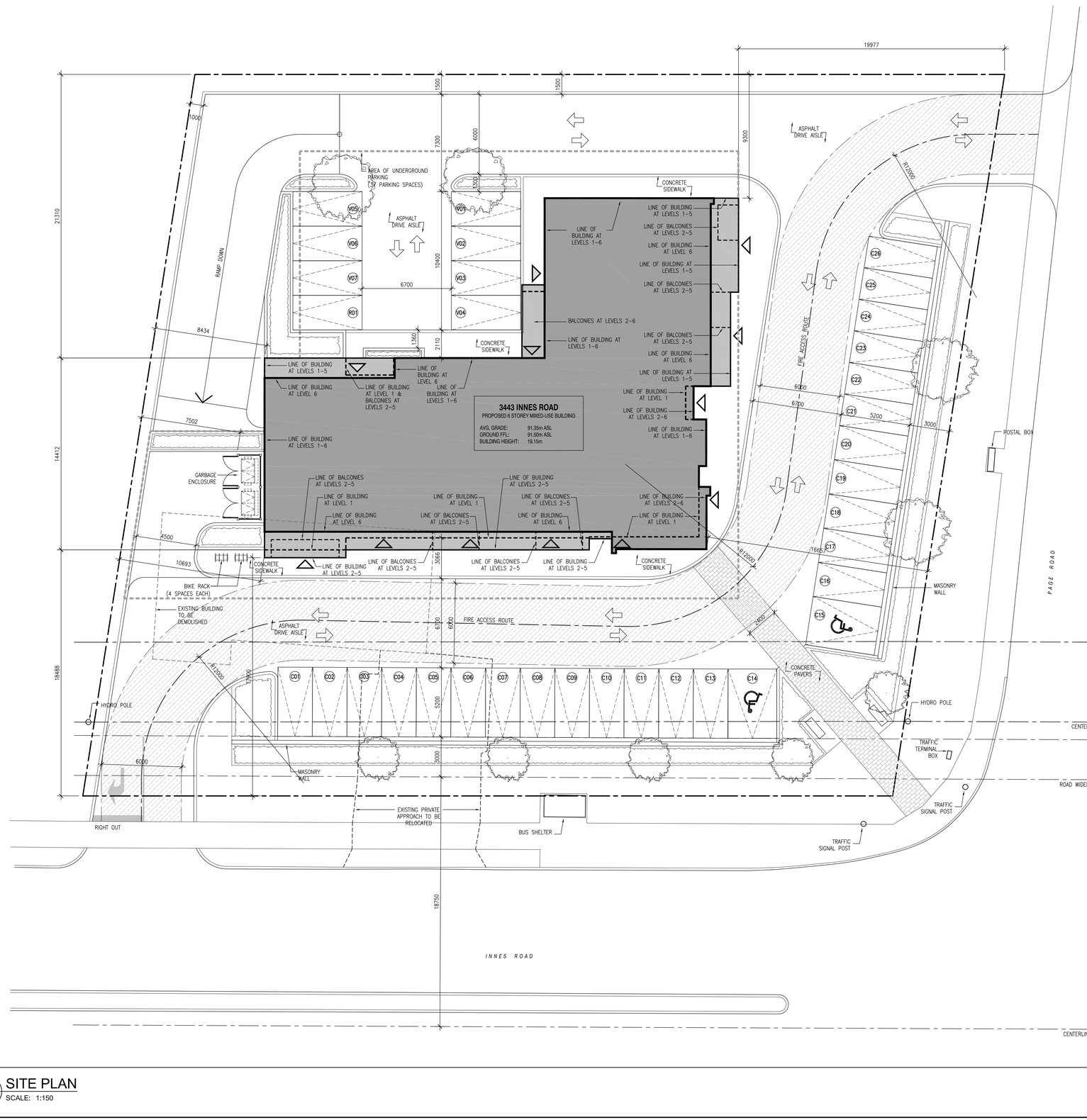
Prepared by:

NOVATECH

Lisa Bowley, P.Eng.
Project Manager
Land Development Engineering

APPENDIX A

Proposed Site Plan



2 SITE PLAN
SP-01 SCALE: 1:150

1 LOCATION PLAN
SP-01 SCALE: NTS

TOPOGRAPHIC PLAN OF SURVEY OF
PART OF LOT 6
CONCESSION 2 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2017

SURVEY INFO
SP-01 SCALE: NTS

SITE PLAN SYMBOLS LEGEND

- BUILDING ENTRANCE
- BUILDING EXIT
- FIRE HYDRANT
- NEW STREET LIGHT
- STREET LIGHT TO BE REMOVED
- BICYCLE PARKING

SYMBOLS LEGEND
SP-01 SCALE: NTS

SITE & PROJECT STATISTICS

GENERAL INFORMATION

Zoning:	----
Lot Area:	----

GROSS FLOOR AREA
As per Section 54

Ground Floor - Retail:	616 m2
Second Floor:	619 m2
Third Floor:	619 m2
Fourth Floor:	619 m2
Fifth Floor:	619 m2
Sixth Floor:	569 m2
Total GFA:	**3,661 m2**

PARKING CALCULATION
As per Table 101

Retail Use

Retail Area:	528 m2
Required Parking:	18 spaces
3.4sp/100m2	

Residential Use

Residential Units:	35
Required Parking:	35 spaces
1.0sp/unit	

Visitor Parking

Residential Units:	35
Required Parking:	7 spaces
0.2sp/unit	
Total Parking Required:	60 spaces
Under Section 101	
Total Parking Provided:	**71 spaces**

BICYCLE PARKING CALCULATION
As per Table 111A

Retail Area:	528 m2
Required Parking:	0 spaces
1sp/1500m2 [111A(i)]	
Residential Units:	35
Required Parking:	18 spaces
0.5sp/unit [111A(b)(i)]	
Total Required Parking:	18 spaces
Total Parking Provided:	**18 spaces**

AMENITY AREA CALCULATION
As per Table 137

Total Amenity Req'd:	210 m2
6m2/unit	
Communal Amenity Req'd:	105 m2
50% of Total Amenity Area Min.	
Total Amenity Provided:	331.9m2
Level 1:	*0m2*
Level 2:	*35.7m2*
Level 3:	*35.7m2*
Level 4:	*35.7m2*
Level 5:	*35.7m2*
Level 6:	*62.2m2*
Roof:	*126.9m2*
Communal Amenity Provided:	126.9m2
Roof:	*126.9m2*

STATISTICS
SP-01 SCALE: NTS

GENERAL ARCHITECTURAL NOTES:

1. This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect.
2. Drawings are not to be scaled. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.
3. Upon notice in writing, the Architect will provide written/graphic clarification or supplementary information regarding the intent of the Contract Documents.
4. The Architectural drawings are to be read in conjuction with all other Contract Documents including Project Manuals and the Structural, Mechanical and Electrical Drawings.
5. Positions of exposed or finished Mechanical or Electrical devices, fittings and fixtures are indicated on the Architectural Drawings. Locations shown on the Architectural Drawings shall govern over Mechanical and Electrical Drawings. Mechanical and Electrical items not clearly located will be located as directed by the Architect.
6. These documents are not to be used for construction unless specifically noted for such purpose.

REVISION RECORD

ISSUED FOR SITE PLAN CONTROL	2017-12-12
ISSUED FOR COORDINATION	2017-08-10
ISSUED FOR COORDINATION	2017-07-17

ISSUE RECORD

ONTARIO ASSOCIATION of ARCHITECTS
EVAN M. KOOLWINE
LICENCE
7319

project1 studio
Project1 Studio Incorporated
t 613.884.3939 | mail@project1studio.ca

3443 INNES ROAD

3443-3445 Innes Road
Ottawa, ON

PROJ	SCALE	DRAWN	REVIEWED
1704	SP-01	LB	RMK

SITE PLAN & STATISTICS

SP-01

APPENDIX B

TIA Screening Form and Letter of Certification

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	**3443 Innes Road**
Description of Location	**The 0.17 hectare property is bound by Innes Road to the south, Pagé Road to the east, existing residential to the north and west**
Land Use Classification	**General Mixed Use**
Development Size (units)	**35 Residential, 6 Commercial (499m^2)**
Development Size (m^2)	**2,944 m^2**
Number of Accesses and Locations	**The subject site has two proposed accesses; one full movement driveway on Pagé Road and a right-in right-out driveway (westbound) on Innes Road.**
Phase of Development	**N/A**
Buildout Year	**2019**

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.

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).*

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?		✓
Are there any horizontal/vertical curvatures on a boundary street limits 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 is 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?		✓

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?		✓
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?	✓	

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).

TIA Plan Reports

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 associated 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[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☐ or transportation planning ☐.

[1,2] **License of 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.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at Ottawa (City) this 19 day of December, 2017.

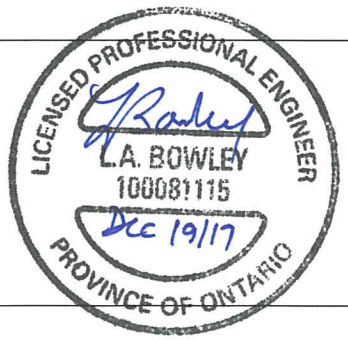
Name: Lisa Bowley
(Please Print)

Professional Title: Project Manager

L Bowley
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)	
Address:	240 Michael Cowpland Drive Suite 300
City / Postal Code:	Ottawa ON K2M 1P6
Telephone / Extension:	613.254.9643 x246
E-Mail Address:	l.bowley@novatech-eng.com

Stamp



APPENDIX C

Traffic Count Data

Transportation Services - Traffic Services

W.O. 35021

Turning Movement Count - 15 Minute Summary Report

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 1

Eastbound: 0 Westbound: 0

		PAGE RD									INNES RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	4	5	7	**16**	3	0	10	**13**	**29**	2	95	5	**102**	6	402	2	**410**	**512**	**541**
07:15	07:30	4	3	18	**25**	0	0	21	**21**	**46**	5	195	3	**203**	5	443	3	**451**	**654**	**700**
07:30	07:45	4	2	6	**12**	5	9	23	**37**	**49**	8	242	6	**256**	3	449	32	**484**	**740**	**789**
07:45	08:00	4	11	15	**30**	6	0	14	**20**	**50**	3	197	5	**205**	10	381	0	**391**	**596**	**646**
08:00	08:15	6	4	14	**24**	7	2	12	**21**	**45**	30	176	2	**208**	14	288	2	**304**	**512**	**557**
08:15	08:30	8	12	15	**35**	11	6	14	**31**	**66**	3	219	4	**226**	3	362	2	**367**	**593**	**659**
08:30	08:45	5	6	24	**35**	12	6	12	**30**	**65**	17	227	4	**248**	5	322	7	**334**	**582**	**647**
08:45	09:00	6	2	20	**28**	13	1	22	**36**	**64**	3	179	0	**182**	11	308	1	**320**	**502**	**566**
09:00	09:15	7	7	28	**42**	7	3	11	**21**	**63**	17	292	12	**321**	5	231	1	**237**	**558**	**621**
09:15	09:30	4	2	21	**27**	4	1	20	**25**	**52**	4	265	1	**270**	6	220	2	**228**	**498**	**550**
09:30	09:45	7	5	22	**34**	3	5	9	**17**	**51**	4	285	7	**296**	16	198	6	**220**	**516**	**567**
09:45	10:00	6	9	10	**25**	12	2	11	**25**	**50**	9	248	10	**267**	5	382	0	**387**	**654**	**704**
11:30	11:45	4	6	20	**30**	5	3	2	**10**	**40**	24	459	7	**490**	28	213	4	**245**	**735**	**775**
11:45	12:00	3	4	24	**31**	10	7	1	**18**	**49**	14	377	13	**404**	19	270	3	**292**	**696**	**745**
12:00	12:15	4	7	30	**41**	17	7	9	**33**	**74**	16	549	6	**571**	15	312	2	**329**	**900**	**974**
12:15	12:30	6	9	22	**37**	9	10	11	**30**	**67**	37	461	16	**514**	5	210	5	**220**	**734**	**801**
12:30	12:45	4	14	27	**45**	4	1	4	**9**	**54**	16	502	5	**523**	11	205	5	**221**	**744**	**798**
12:45	13:00	9	10	43	**62**	5	5	2	**13**	**75**	6	539	8	**553**	9	232	3	**244**	**797**	**872**
13:00	13:15	5	4	21	**30**	9	6	8	**23**	**53**	6	647	6	**659**	10	344	0	**354**	**1013**	**1066**
13:15	13:30	2	82	16	**100**	7	6	5	**18**	**118**	1	313	1	**315**	10	261	5	**276**	**591**	**709**
15:00	15:15	21	11	31	**63**	10	6	1	**17**	**80**	6	435	6	**447**	18	136	3	**157**	**604**	**684**
15:15	15:30	5	18	47	**70**	5	25	1	**31**	**101**	8	527	9	**544**	31	251	8	**290**	**834**	**935**
15:30	15:45	4	17	38	**59**	7	3	0	**10**	**69**	21	455	6	**482**	12	138	5	**155**	**637**	**706**
15:45	16:00	3	12	37	**52**	17	12	2	**31**	**83**	19	490	8	**517**	25	189	3	**217**	**734**	**817**
16:00	16:15	8	12	22	**42**	19	15	6	**40**	**82**	23	489	7	**519**	32	179	6	**217**	**736**	**818**
16:15	16:30	9	20	34	**63**	12	14	4	**30**	**93**	39	558	14	**611**	49	221	4	**274**	**885**	**978**
16:30	16:45	17	24	23	**64**	19	7	4	**30**	**94**	21	411	9	**441**	42	184	1	**227**	**668**	**762**
16:45	17:00	11	32	41	**84**	10	19	1	**30**	**114**	11	525	11	**547**	28	192	1	**221**	**768**	**882**
17:00	17:15	9	17	23	**49**	21	4	1	**26**	**75**	18	287	8	**313**	45	232	11	**288**	**601**	**676**
17:15	17:30	17	30	35	**82**	9	17	4	**30**	**112**	16	489	8	**513**	87	235	3	**325**	**838**	**950**
17:30	17:45	0	4	23	**27**	24	7	9	**40**	**67**	57	513	33	**603**	55	132	4	**191**	**794**	**861**
17:45	18:00	11	5	11	**27**	7	9	11	**27**	**54**	6	397	16	**419**	34	138	3	**175**	**594**	**648**
TOTAL:		217	406	768	**1391**	309	218	265	**793**	**2184**	470	12043	256	**12769**	654	8260	137	**9051**	**21820**	**24004**

Note: U-Turns are included in Totals.

Comment:

Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
35021

INNES RD @ PAGE RD

Count Date: Tuesday, July 28, 2015 **Start Time:** 07:00

	PAGE RD			INNES RD			
Time Period	Northbound	Southbound	**Street Total**	Eastbound	Westbound	**Street Total**	**Grand Total**
07:00 08:00	2	0	**2**	2	0	**2**	**4**
08:00 09:00	2	0	**2**	3	0	**3**	**5**
09:00 10:00	0	0	**0**	5	0	**5**	**5**
11:30 12:30	7	0	**7**	1	0	**1**	**8**
12:30 13:30	5	0	**5**	7	0	**7**	**12**
15:00 16:00	1	0	**1**	7	0	**7**	**8**
16:00 17:00	6	0	**6**	18	0	**18**	**24**
17:00 18:00	2	0	**2**	10	0	**10**	**12**
Total	25	0	**25**	53	0	**53**	**78**

Comment:

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

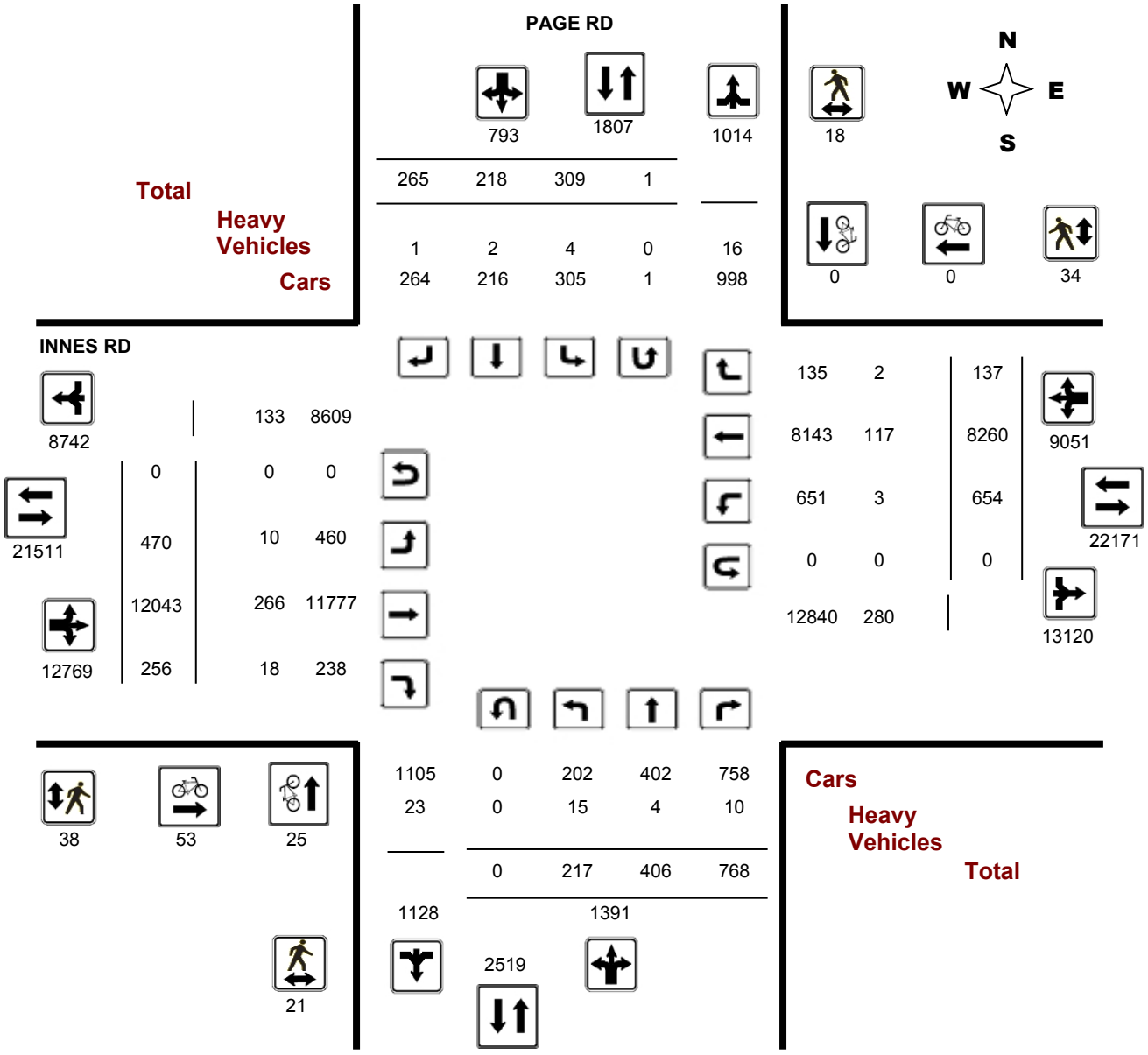
Turning Movement Count - Full Study Diagram

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015

WO#: 35021

Device: Jamar Technologies, Inc



Comments

Transportation Services - Traffic Services

W.O. 35021

Turning Movement Count - Heavy Vehicle Report

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015

		PAGE RD									INNES RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	08:00	4	1	4	**9**	0	0	0	**0**	**9**	2	70	7	**79**	1	23	1	**25**	**104**	**113**
08:00	09:00	0	0	0	**0**	1	0	0	**1**	**1**	2	44	2	**48**	0	20	1	**21**	**69**	**70**
09:00	10:00	2	1	2	**5**	0	2	1	**3**	**8**	3	35	2	**40**	0	8	0	**8**	**48**	**56**
11:30	12:30	2	1	1	**4**	2	0	0	**2**	**6**	1	27	1	**29**	1	27	0	**28**	**57**	**63**
12:30	13:30	1	1	2	**4**	0	0	0	**0**	**4**	0	33	3	**36**	1	10	0	**11**	**47**	**51**
15:00	16:00	0	0	0	**0**	1	0	0	**1**	**1**	0	21	2	**23**	0	11	0	**11**	**34**	**35**
16:00	17:00	1	0	0	**1**	0	0	0	**0**	**1**	1	14	1	**16**	0	8	0	**8**	**24**	**25**
17:00	18:00	5	0	1	**6**	0	0	0	**0**	**6**	1	22	0	**23**	0	10	0	**10**	**33**	**39**
Sub Total		15	4	10	**29**	4	2	1	**7**	**36**	10	266	18	**294**	3	117	2	**122**	**416**	**452**
U-Turns (Heavy Vehicles)					**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total		15	4	10	**0**	4	2	1	**7**	**36**	10	266	18	**294**	3	117	2	**122**	**416**	**452**

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Transportation Services - Traffic Services

Work Order
35021

Turning Movement Count - Pedestrian Volume Report

INNES RD @ PAGE RD

Count Date: Tuesday, July 28, 2015 **Start Time:** 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	4	0	**4**	**4**
07:15 07:30	0	0	**0**	1	0	**1**	**1**
07:30 07:45	1	0	**1**	3	0	**3**	**4**
07:45 08:00	0	1	**1**	1	1	**2**	**3**
07:00 08:00	1	1	**2**	9	1	**10**	**12**
08:00 08:15	0	0	**0**	1	0	**1**	**1**
08:15 08:30	0	0	**0**	0	0	**0**	**0**
08:30 08:45	2	0	**2**	2	0	**2**	**4**
08:45 09:00	0	0	**0**	0	0	**0**	**0**
08:00 09:00	2	0	**2**	3	0	**3**	**5**
09:00 09:15	0	0	**0**	0	0	**0**	**0**
09:15 09:30	0	0	**0**	0	1	**1**	**1**
09:30 09:45	0	1	**1**	1	1	**2**	**3**
09:45 10:00	4	0	**4**	8	0	**8**	**12**
09:00 10:00	4	1	**5**	9	2	**11**	**16**
11:30 11:45	0	0	**0**	0	2	**2**	**2**
11:45 12:00	0	0	**0**	2	0	**2**	**2**
12:00 12:15	0	0	**0**	2	3	**5**	**5**
12:15 12:30	0	6	**6**	2	3	**5**	**11**
11:30 12:30	0	6	**6**	6	8	**14**	**20**
12:30 12:45	2	0	**2**	3	0	**3**	**5**
12:45 13:00	0	1	**1**	1	4	**5**	**6**
13:00 13:15	0	0	**0**	1	4	**5**	**5**
13:15 13:30	1	2	**3**	2	2	**4**	**7**
12:30 13:30	3	3	**6**	7	10	**17**	**23**
15:00 15:15	1	0	**1**	0	0	**0**	**1**
15:15 15:30	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	0	0	**0**	**0**
15:45 16:00	1	0	**1**	1	0	**1**	**2**
15:00 16:00	2	0	**2**	1	0	**1**	**3**
16:00 16:15	2	0	**2**	0	3	**3**	**5**
16:15 16:30	0	0	**0**	0	4	**4**	**4**
16:30 16:45	0	0	**0**	0	0	**0**	**0**
16:45 17:00	2	3	**5**	1	0	**1**	**6**
16:00 17:00	4	3	**7**	1	7	**8**	**15**
17:00 17:15	2	1	**3**	1	1	**2**	**5**
17:15 17:30	0	0	**0**	0	5	**5**	**5**
17:30 17:45	0	1	**1**	0	0	**0**	**1**
17:45 18:00	3	2	**5**	1	0	**1**	**6**
17:00 18:00	5	4	**9**	2	6	**8**	**17**
Total	21	18	**39**	38	34	**72**	**111**

Comment:

Transportation Services - Traffic Services

Work Order
35021

Turning Movement Count - Full Study Summary Report

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 1
Eastbound: 0 Westbound: 0

AADT Factor
.90

Full Study

	PAGE RD									INNES RD									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	16	21	46	**83**	14	9	68	**91**	**174**	18	729	19	**766**	24	1675	37	**1736**	**2502**	**2676**
08:00 09:00	25	24	73	**122**	43	15	60	**118**	**240**	53	801	10	**864**	33	1280	12	**1325**	**2189**	**2429**
09:00 10:00	24	23	81	**128**	26	11	51	**88**	**216**	34	1090	30	**1154**	32	1031	9	**1072**	**2226**	**2442**
11:30 12:30	17	26	96	**139**	41	27	23	**91**	**230**	91	1846	42	**1979**	67	1005	14	**1086**	**3065**	**3295**
12:30 13:30	20	110	107	**237**	25	18	19	**62**	**299**	29	2001	20	**2050**	40	1042	13	**1095**	**3145**	**3444**
15:00 16:00	33	58	153	**244**	39	46	4	**89**	**333**	54	1907	29	**1990**	86	714	19	**819**	**2809**	**3142**
16:00 17:00	45	88	120	**253**	60	55	15	**130**	**383**	94	1983	41	**2118**	151	776	12	**939**	**3057**	**3440**
17:00 18:00	37	56	92	**185**	61	37	25	**123**	**308**	97	1686	65	**1848**	221	737	21	**979**	**2827**	**3135**
Sub Total	217	406	768	**1391**	309	218	265	**792**	**2183**	470	12043	256	**12769**	654	8260	137	**9051**	**21820**	**24003**
U Turns				**0**				**1**	**1**				**0**				**0**	**0**	**1**
Total	217	406	768	**1391**	309	218	265	**793**	**2184**	470	12043	256	**12769**	654	8260	137	**9051**	**21820**	**24004**
EQ 12Hr	302	564	1068	**1933**	430	303	368	**1102**	**3035**	653	16740	356	**17749**	909	11481	190	**12581**	**30330**	**33365**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	271	508	961	**1740**	387	273	332	**992**	**2732**	588	15066	320	**15974**	818	10333	171	**11323**	**27297**	**30029**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**.90**						
AVG 24Hr	356	665	1259	**2280**	506	357	434	**1300**	**3580**	770	19736	420	**20926**	1072	13537	225	**14833**	**35759**	**39339**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

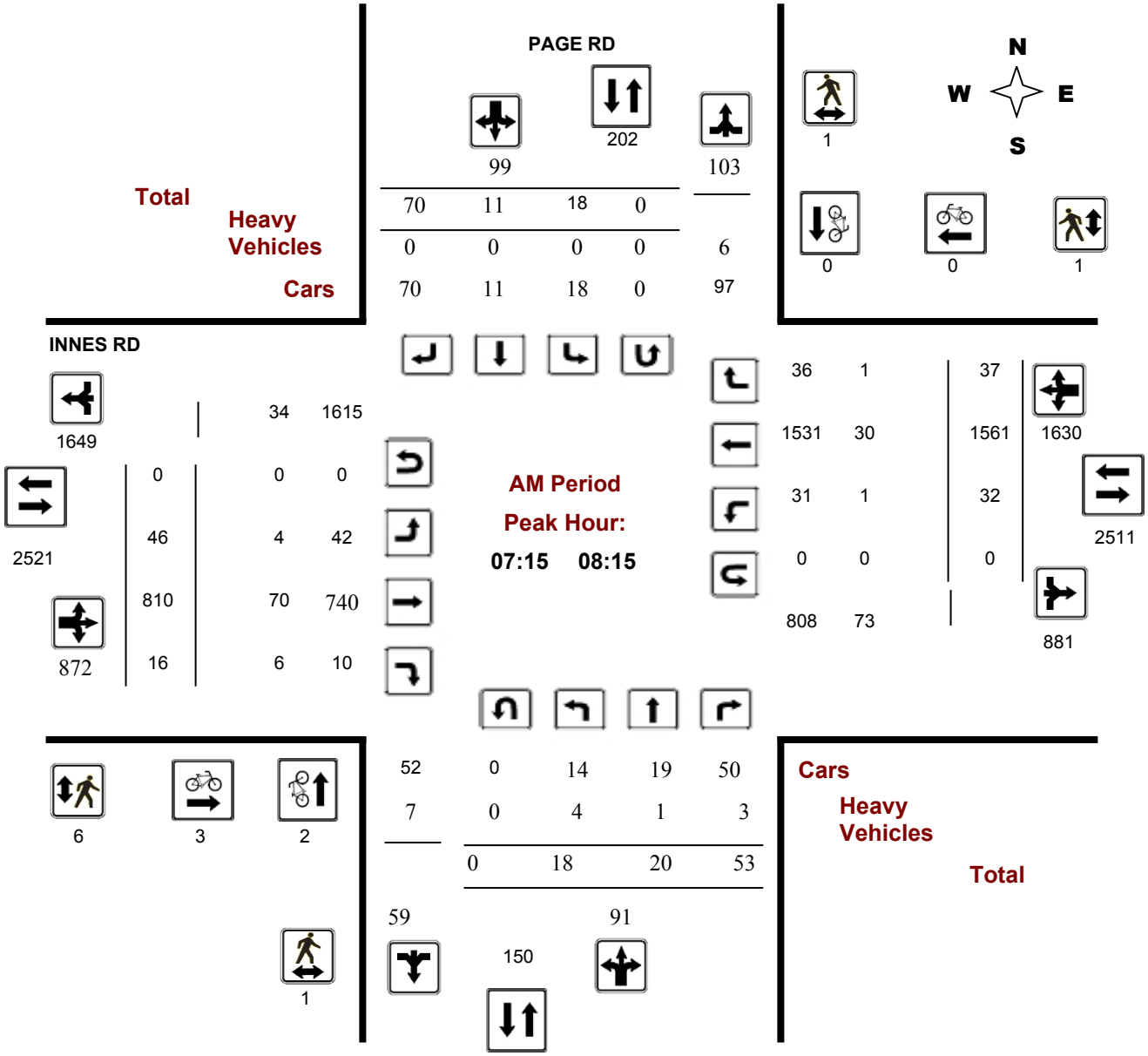
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015
Start Time: 07:00

WO No: 35021
Device: Jamar Technologies, Inc



Comments

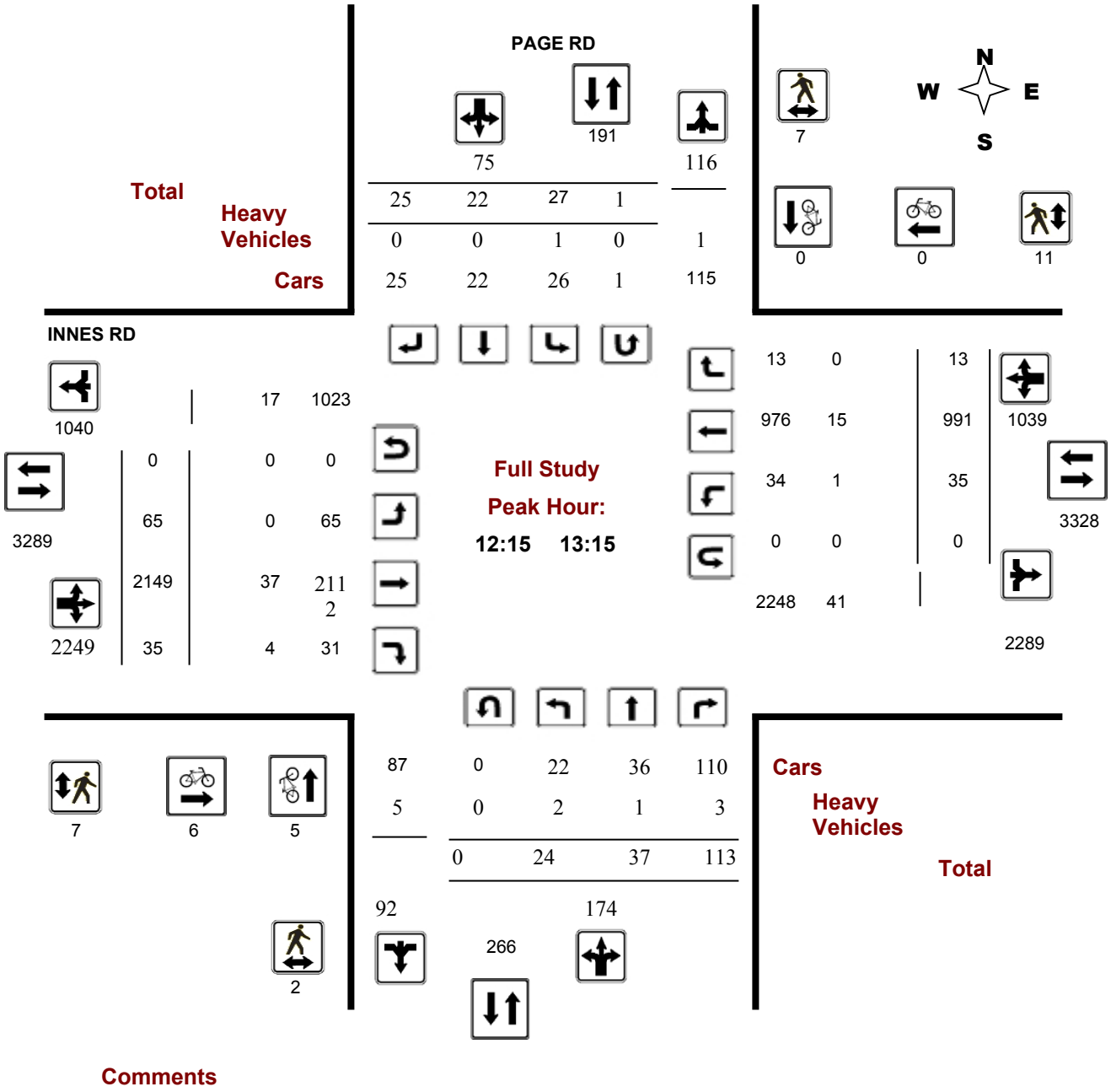
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015
Start Time: 07:00

WO No: 35021
Device: Jamar Technologies, Inc



Comments

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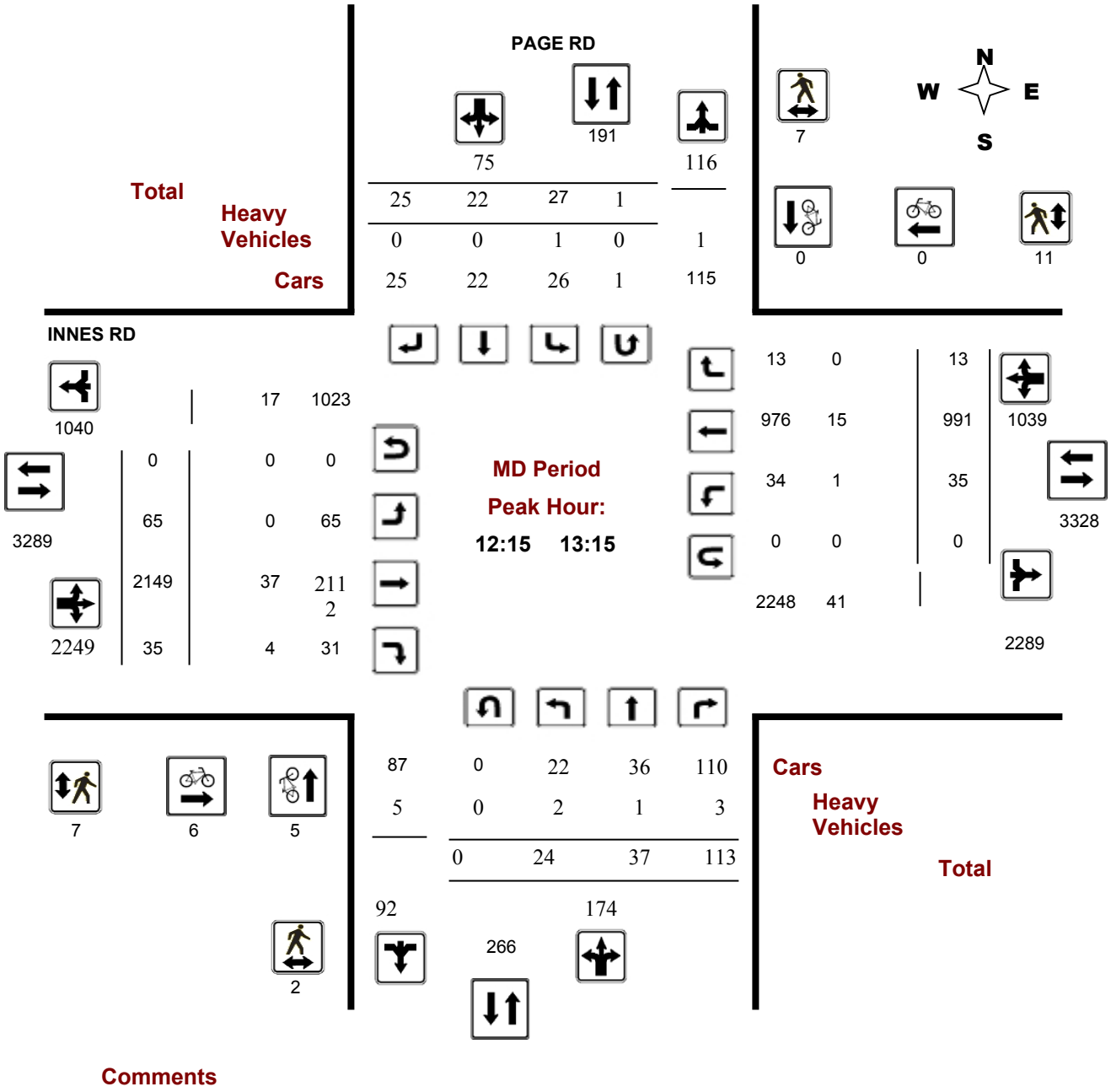

Comments

Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

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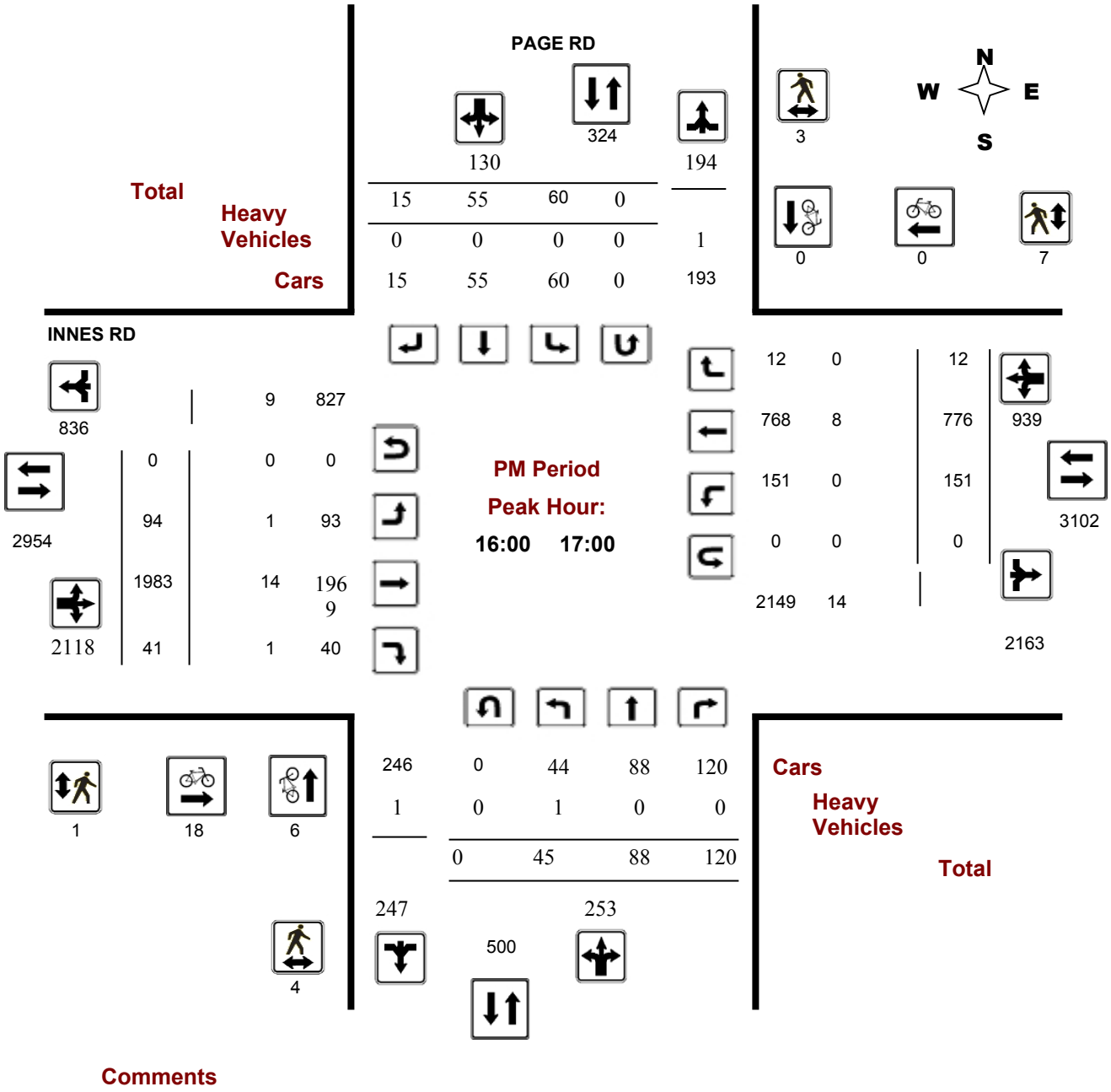


Comments

Transportation Services - Traffic Services

Work Order
35021

Turning Movement Count - 15 Min U-Turn Total Report

INNES RD @ PAGE RD

Survey Date: Tuesday, July 28, 2015

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	1	0	0	1
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	1	0	0	1

APPENDIX D

Collision Records

Collision Main Detail Summary

OnTRAC Reporting System

FROM: 2012-01-01 TO: 2014-01-01

INNES RD & PAGE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **8**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
1	2012-01-19	Thu	22:47	Snow	Dark	Angle	Non-fatal	V1 N	Slush	Turning right	Automobile, station	Other motor vehicle	0
								V2 E	Slush	Going ahead	Automobile, station	Other motor vehicle	
2	2012-03-16	Fri	16:11	Clear	Daylight	Rear end	Non-fatal	V1 E	Dry	Slowing or	Passenger van	Other motor vehicle	0
								V2 E	Dry	Slowing or	Automobile, station	Other motor vehicle	
3	2012-05-04	Fri	07:51	Clear	Daylight	Rear end	P.D. only	V1 E	Dry	Going ahead	Passenger van	Other motor vehicle	0
								V2 E	Dry	Going ahead	Automobile, station	Other motor vehicle	
4	2012-11-16	Fri	16:28	Clear	Dusk	Sideswipe	P.D. only	V1 W	Dry	Changing lanes	Municipal transit bus	Other motor vehicle	0
								V2 W	Dry	Changing lanes	Automobile, station	Other motor vehicle	
5	2012-12-22	Sat	15:15	Snow	Daylight	Rear end	P.D. only	V1 S	Packed snow	Slowing or	Pick-up truck	Other motor vehicle	0
								V2 S	Loose snow	Stopped	Automobile, station	Other motor vehicle	
6	2013-06-19	We	19:49	Clear	Daylight	Single vehicle	Non-fatal	V1 N	Dry	Turning left	Automobile, station	Pedestrian	1
7	2013-10-17	Thu	16:35	Clear	Daylight	Angle	P.D. only	V1 W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 N	Dry	Going ahead	Pick-up truck	Other motor vehicle	
8	2013-11-10	Sun	18:37	Rain	Dark	Turning	P.D. only	V1 S	Wet	Turning right	Automobile, station	Other motor vehicle	0
								V2 S	Wet	Turning right	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2014 **To:** January 1, 2017

Location: INNES RD @ PAGE RD

Traffic Control: Traffic signal

Total Collisions: 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-May-03, Sat,15:48	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Aug-19, Tue,11:06	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Oct-20, Mon,20:40	Rain	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Pick-up truck	Other motor vehicle	
2014-Dec-07, Sun,11:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Nov-18, Tue,16:45	Clear	Rear end	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2014-Nov-18, Tue,17:39	Clear	Rear end	P.D. only	Ice	North	Turning right	Automobile, station wagon	Other motor vehicle	

					North	Turning right	Automobile, station wagon	Other motor vehicle
2014-Dec-10, Wed,20:15	Snow	Rear end	P.D. only	Loose snow	West	Turning left	Passenger van	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2015-Jan-14, Wed,08:40	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Pick-up truck	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Jul-21, Tue,13:20	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Feb-20, Fri,07:15	Clear	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Jul-14, Tue,18:58	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2015-Jul-30, Thu,20:45	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-22, Sat,11:07	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Pick-up truck	Other motor vehicle

					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Sep-28, Mon,08:12	Clear	Angle	P.D. only	Dry	West	Turning right	School bus	Other motor vehicle	
					North	Stopped	Construction equipment	Other motor vehicle	
2015-Oct-11, Sun,17:24	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-04, Fri,17:43	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-23, Wed,10:52	Clear	Rear end	P.D. only	Dry	West	Going ahead	Delivery van	Other motor vehicle	
					West	Stopped	Truck - closed	Other motor vehicle	
2016-Nov-23, Wed,06:45	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Nov-03, Thu,07:05	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Pedestrian	1
2016-Nov-04, Fri,21:47	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

APPENDIX E

TDM – Supportive Development Design and Infrastructure Checklist

Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.1—Development Design) requires proponents of qualifying developments to use the City's **TDM-Supportive Development Design and Infrastructure Checklist** to assess the opportunity to implement design elements that are supportive of sustainable modes. The goal of this assessment is to ensure that the development provides safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments
- TDM-Supportive Development Design and Infrastructure Checklist: Residential Developments

Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.

Using the Checklist

This **TDM-Supportive Development Design and Infrastructure Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family or condominium only; subdivisions are exempt). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the design and infrastructure measures being proposed and provides additional detail on them.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- 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.

Glossary

This glossary defines and describes the following measures that are identified in the **TDM-Supportive Development Design and Infrastructure Checklist**:

Walking & cycling: Routes
- Building location & access points
- Facilities for walking & cycling
- Amenities for walking & cycling

Walking & cycling: End-of-trip facilities
- Bicycle parking
- Secure bicycle parking
- Shower & change facilities
- Bicycle repair station

Transit
- Walking routes to transit
- Customer amenities

Ridesharing
- Pick-up & drop-off facilities
- Carpool parking

Carsharing & bikesharing
- Carshare parking spaces
- Bikeshare station location

Parking
- Number of parking spaces
- Separate long-term & short-term parking areas

Other
- On-site amenities to minimize off-site trips

In addition to specific references made in this glossary, readers should consult the City of Ottawa's design and planning guidelines for a variety of different land uses and contexts, available on the City's website at www.ottawa.ca. Readers may also find the following resources to be helpful:

- *Promoting Sustainable Transportation through Site Design*, Institute of Transportation Engineers, 2004 (www.cite7.org/wpdm-package/iterp-promoting-sustainable-transportation)
- *Bicycle End-of-Trip Facilities: A Guide for Canadian Municipalities and Employers*, Transport Canada, 2010 (www.fcm.ca/Documents/tools/GMF/Transport_Canada/BikeEndofTrip_EN.pdf)

▶ *Walking & cycling: Routes*

Building location & access points. Correctly positioning buildings and their entrances can help make walking convenient, comfortable and safe. Minimizing travel distances and maximizing visibility are key.

Facilities for walking & cycling. The Official Plan gives clear direction on the provision and design of walking and cycling facilities for both access and circulation. On larger, busier sites (e.g. multi-building campuses) the inclusion of sidewalks, pathways, marked crossings, stop signs and traffic calming features can create a safer and more supportive environment for active transportation.

Amenities for walking & cycling. Lighting, landscaping, benches and wayfinding can make walking and cycling safer and more secure, comfortable and accessible.

▶ *Walking & cycling: End-of-trip facilities*

Bicycle parking. The Official Plan and Zoning By-law both address the need for adequate bicycle parking at developments. Weather protection and theft prevention are major concerns for commuters who spend hundreds or thousands of dollars on a quality bicycle. Bicycle racks should have a design that enables secure locking while preventing damage to wheels. They should be located within sight of busy areas such as main building entrances or staffed parking kiosks.

Secure bicycle parking. Ottawa's Zoning By-law requires a secure area for bicycles at office or residential developments having more than 50 bicycle parking spaces. Lockable outdoor bike cages or indoor storage rooms that limit access to registered users are ideal.

Shower & change facilities. Longer-distance cyclists, joggers and even pedestrians can need a place to shower and change at work; the lack of such facilities is a major barrier to active commuting. Lockers and drying racks provide a place to store gear away from workspaces, and showers and grooming stations allow commuters to make themselves presentable for the office.

Bicycle repair station. Cycling commuters can experience maintenance issues that make the homeward trip difficult or impossible. A small supply of tools (e.g. air pump, Allen keys, wrenches) and supplies (e.g. inner tube patches, chain lubricant) in the workplace can help.

▶ *Transit*

Customer amenities. Larger developments that feature an on-site transit stop can make transit use more attractive by providing shelters, lighting and benches. Even better, they could integrate the passenger waiting area into a building entrance.

▶ *Ridesharing*

Pick-up & drop-off facilities. Having a safe place to load or unload passengers (for carpools as well as taxis and ride-hailing services) without obstructing pedestrians, cyclists or other vehicles can help make carpooling work.

Carpool parking. At destinations with large parking lots (or lots that regularly fill to capacity), signed priority carpool parking spaces can be an effective ridesharing incentive. Priority spaces are frequently abused by non-carpoolers, so a system to provide registered users with vehicle identification tags is recommended.

▶ *Carsharing & bikesharing*

Carshare parking spaces. For developments where carsharing could be an attractive option for employees, visitors or residents, ensuring an attractive location for future carshare parking spaces can avoid challenges associated with future retrofits.

Bikeshare station location. For developments where bikesharing could be an attractive option for employees, visitor or residents, ensuring an attractive location for a future bikeshare station can avoid challenges associated with future retrofits.

▶ *Parking*

Number of parking spaces. Parking capacity is an important variable in development design, as it can either support or subvert the mode share targets set during the transportation impact analysis (TIA). While the Zoning By-law establishes any minimum and/or maximum requirements for parking capacity, it also allows a reduction in any minimum to reflect the existence of on-site shower, change and locker rooms provided for cyclists.

Separate long-term & short-term parking areas. Because access to unused parking spaces can be a powerful incentive to drive, developments can better manage their parking supply and travel behaviours by separating long-term from short-term parking through the use of landscaping, gated controls or signs. Doing so makes it difficult for long-term parkers (e.g. commuters) to park in short-term areas (e.g. for visitors) as long as enforcement occurs; it also protects long-term parking capacity for its intended users.

▶ *Other*

On-site amenities to minimize off-site trips. Developments that offer facilities to limit employees' need for a car during their commute (e.g. to drop off children at daycare) or during their workday (e.g. to hit the gym) can free employees to make the commuting decision that otherwise works best for them.

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)*	☑
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)*	☑ Concrete sidewalk/ Concrete pavers
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)*	☑ Concrete pavers adjacent to accessible parking spaces
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)*	☑ walkway to public right-of-way.
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	☑ Novatech Landscape Plan 117077-L1
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)*	☑ Refer to Site Plan for locations
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)*	☑ Section 6.2 of TIA report
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)*	☑ Refer to Landscape Plan
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	☐
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	☐
	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	☑ Meets 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	☑ Mixed use

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

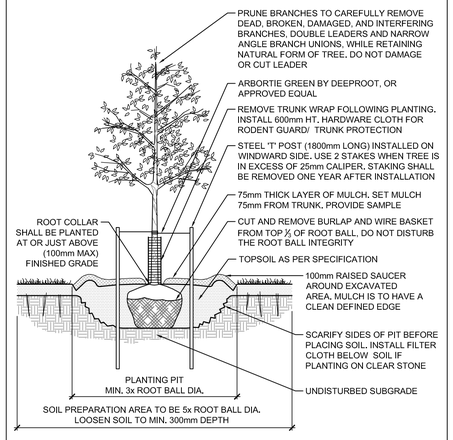
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development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

		TDM-supportive design & infrastructure measures: *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)*	☑
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)*	☑

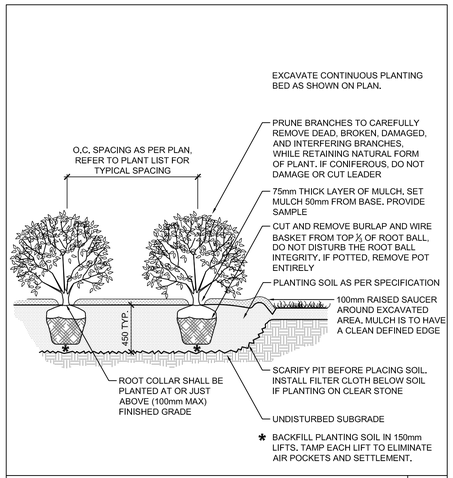
		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑ Concrete sidewalk/ Concrete pavers
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)*	☑
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: *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)*	☑
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)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential 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 at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	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)	☐
	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	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

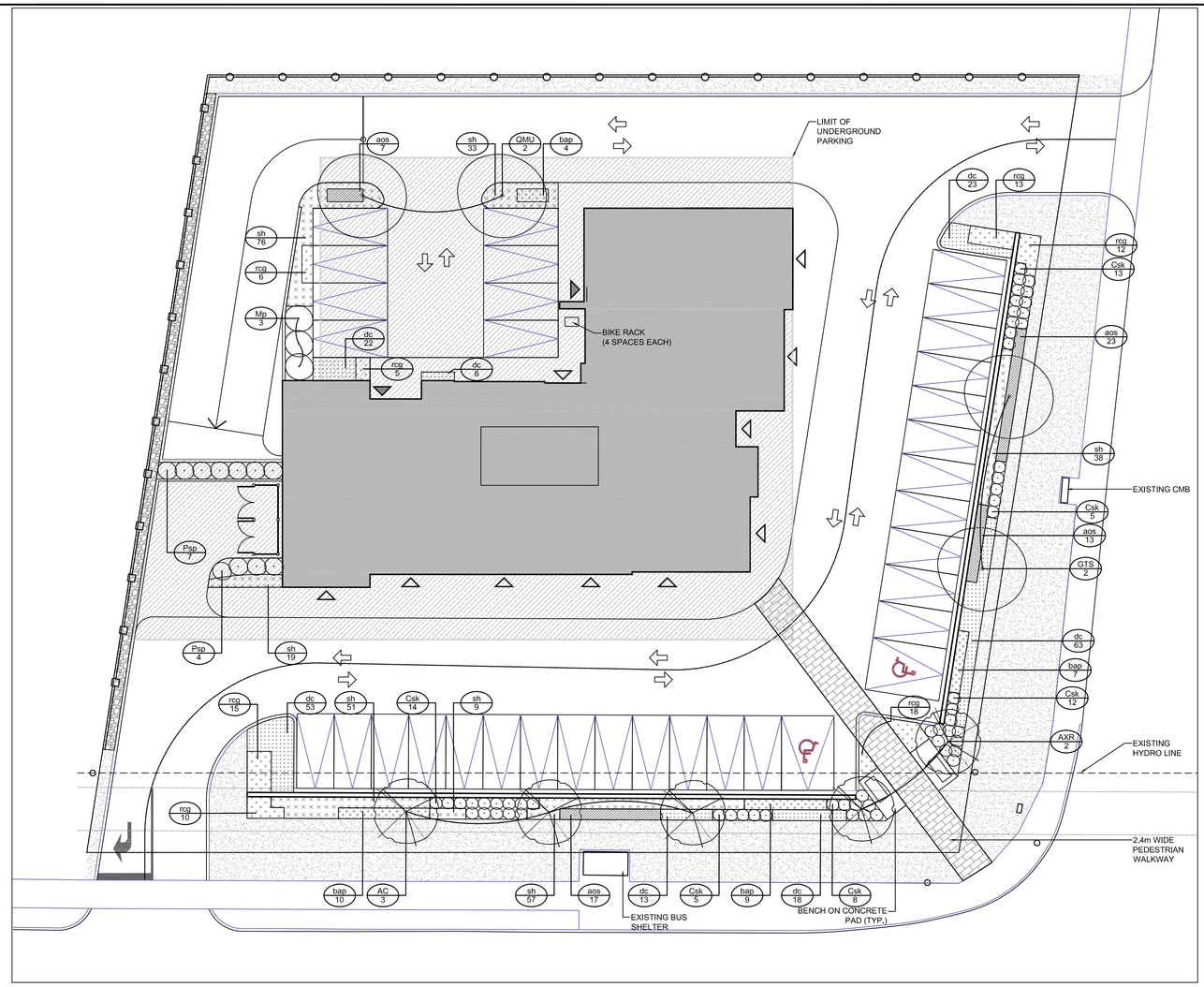
		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(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	☐
	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	☑
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	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

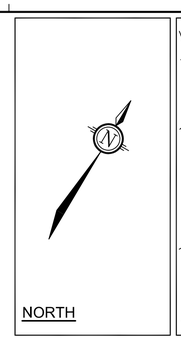


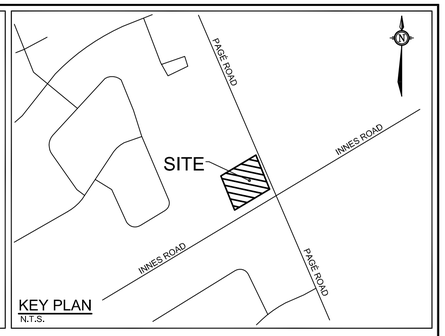
STANDARD DECIDUOUS TREE PLANTING | D1



SHRUB AND PERENNIAL PLANTING | D2







LANDSCAPE LEGEND:

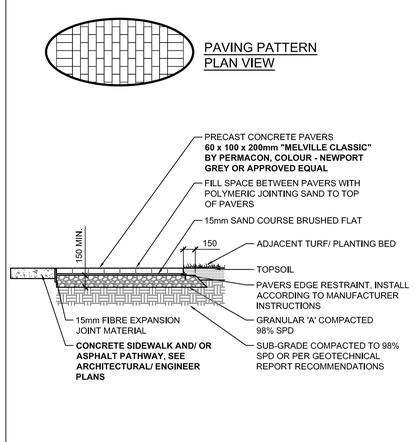
- PROPOSED DECIDUOUS TREE
- PROPOSED SMALL DECIDUOUS TREE
- PROPOSED DECIDUOUS SHRUBS
- ASTER OBLONGIFOLIUS 'OCTOBER SKIES'
- BAPTISIA AUSTRALIS 'PURPLE SMOKE'
- RUDBECKIA FULGIDA 'GOLDSTURM'
- DESCHAMPSIA CESPITOSA
- SPOROBOLUS HETEROLEPIS
- SOD
- RIVER ROCK
- PAVERS
- KEY ## — SPECIES (SEE PLANT LIST) / QUANTITY
- 1.5m H.T. CHAIN LINK FENCE
- 1.8m H.T. PRIVACY SCREEN

PLANTING NOTES

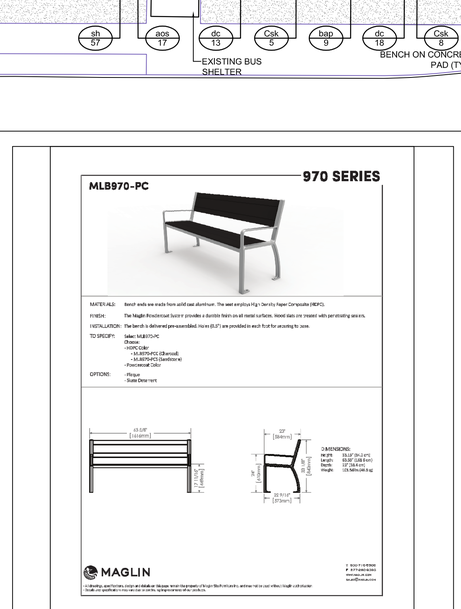
1. This drawing shall be read in conjunction with all relevant **Architectural,** Engineering, and related drawings and documents.
2. Refer to Engineering Drawings for Grading. Provide drainage as indicated in grading plan. Round all tops and toes of slopes, smoothly. Compact all areas to 95% Standard Proctor Density unless otherwise noted.
3. **Refer to Architectural Drawings for site layout.**
4. Refer to Engineering Drawings for site servicing.
5. Contractor must contact utility companies for locates prior to excavation or planting.
6. It is essential to use the plans and details in conjunction with the specifications and notes.
7. Existing trees to be retained shall be protected according to the contract detail and specifications.
8. Plant material shall be No. 1 Grade and shall comply with Canadian Standards for Nursery Stock (latest edition) published by the Canadian Nursery Landscape Association.
9. Use plant material with strong fibrous root system free of disease, defects or injuries, and structurally sound. Use trees with straight trunks, well and characteristically branched for species. Obtain approval from consultant of plant material at source prior to digging. All trees and shrubs shall be container grown, potted, W/B or B/B, as indicated on Plant List. Bare root planting will only be acceptable for certain species and as approved by the Landscape Architect.
10. Plant material substitutions shall not be permitted without the written approval from the consultant, **with 48 hours notice**, prior to shipping plant material.
11. Plant locations are schematic / approximate only. **Contractor shall stake out locations on site for approval by the Landscape Architect prior to installation.** The illustrated number of plants shown in the Planting Plan supersedes the estimated number in the Plant List. Contractor to report any discrepancies to the Landscape Architect prior to installation. Contractor will assume full responsibility if the Landscape Architect is not notified.
12. Shrubs, Perennials, Vines, and Groundcovers shall be planted in a continuous planting bed of **450mm** depth with approved topsoil covered with **75mm** depth shredded bark mulch.
13. Ensure trees are thoroughly watered following planting. Monitor material and ensure adequate moisture until acceptance.
14. In heavy clay or poorly drained soils, set root ball with root collar 75-100mm higher than finished grade.
15. Planting in raised planters shall be set on a bed of heavily compacted growing medium, at the bottom, to eliminate settlement. Backfill around the root ball with growing medium in 150mm lifts. Tamp and water each lift to eliminate air pockets or settlement. Growing medium to be 80% commercial screened topsoil, 10% peat moss or compost, and 10% perlite. Top of the planter shall be covered with 75mm of shredded bark mulch.
16. Sod and/or seed areas to receive **100mm** depth topsoil as specified. Sod shall be No. 1 Kentucky Bluegrass Sod grown from minimum mixture of 3 Kentucky Bluegrass cultivars. Quality and sunset shall comply with Canadian Standards for Nursery Stock, Section 17, (latest edition) published by the Canadian Nursery Landscape Nursery Landscape Association. Unless otherwise specified, turf is to be maintained by the contractor until a second cutting is accepted by the Landscape Architect.
17. Apply the following mineral fertilizer unless soil tests show other requirements; Sodded areas - (8-32-16) 8% Nitrogen, 32% Phosphorus, 16% Potash at a rate of 350kg/ha. - Planting Beds - (8-32-16) - 8% Nitrogen, 32% Phosphorus, 16% Potash as per manufacturer specifications.
18. Reinstate all areas damaged or disturbed beyond the Limit of Work.

NOTE:
1. ALL SITE FURNISHINGS TO BE SECURED WITH BOLTS SET IN CONCRETE.
2. DIMENSIONS TO DEFINE OPEN CLEARANCE AROUND BENCH.

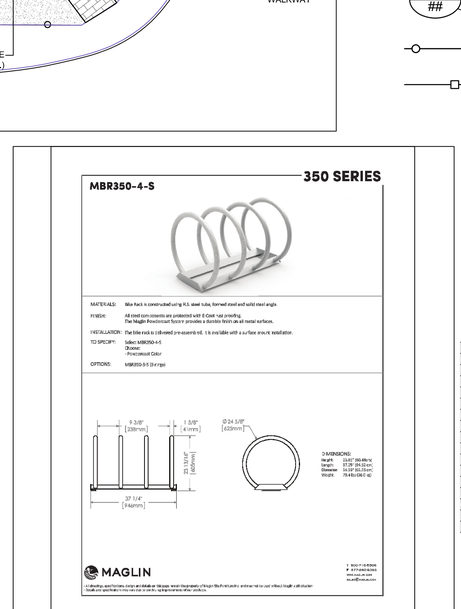
BENCH ON CONCRETE PAD | D3



PAVER BESIDE GRASS | D4



BENCH | D5



BICYCLE RACK | D6

117077 - 3443 Innes Road - Plant List

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING
Deciduous Trees						
AC	3	*Amelanchier canadensis (single stem)*	Downy Serviceberry	50mm Cal	WB	As Shown
AXR	2	*Amelanchier x grandiflora 'Robin Hill'*	Robin Hill Serviceberry	45mm Cal	WB	As Shown
GTS	2	*Gleditsia triacanthos var. inermis 'Shademaster'*	Shademaster Honeylocust	60mm Cal	WB	As Shown
QMU	2	*Quercus macrocarpa 'Urban Pinnacle'*	Urban Pinnacle Oak	50mm Cal	WB	As Shown
Deciduous Shrubs						
Csk	57	*Cornus sericea 'Kelseyi'*	Kelsey Dogwood	40cm Ht	PT	80cm O.C.
Mp	3	*Myrica pensylvanica*	Bayberry	50cm Ht	PT	180cm O.C.
Psp	11	*Physocarpus opulifolius 'Seward'*	Summer Wine Ninebark	50cm Ht	PT	120cm O.C.
Perennials						
aos	60	*Aster oblongifolius 'October Skies'*	October Skies Aster	1g	PT	60cm O.C.
bap	30	*Baptisia australis 'Purple Smoke'*	Purple Smoke False Indigo	1g	PT	75cm O.C.
rcg	79	*Rudbeckia fulgida 'Goldsturm'*	Goldstrum Rudbeckia	1g	PT	60cm O.C.
Ornamental Grasses						
dc	198	*Deschampsia cespitosa*	Tufted Hair Grass	1g	PT	50cm O.C.
sh	283	*Sporobolus heterolepis*	Prairie Dropseed	1g	PT	50cm O.C.

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
2.	ISSUED FOR SITE PLAN APPLICATION	DEC 15/17	RGJ
1.	ISSUED FOR COORDINATION	DEC 1/17	RGJ

SCALE 1:200 (1:200 0 2 4 6 8)

DESIGN KW
CHECKED RGJ
DRAWN KW
CHECKED RGJ
APPROVED RGJ

FOR REVIEW ONLY

ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JOHN G. JAMES — OALA — DEC 15/17 — MEMBER

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY of OTTAWA
3443 INNES ROAD

DRAWING NAME
LANDSCAPE PLAN

PROJECT No. 117077-00
REV REV # 2
DRAWING No. 117077-L1

M:\2017\117077\CAD\Landscape\1-Plan\117077-L.dwg, L-1, Dec 01, 2017 - 3:26pm, kwatson

PLAN1.DWG - 841mmx594mm

APPENDIX F

Synchro Analysis

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	17	7	110	99	0
Future Volume (Veh/h)	0	17	7	110	99	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	19	8	122	110	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	248	110	110			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248	110	110			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	99			
cM capacity (veh/h)	736	943	1480			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	19	130	110
Volume Left	0	8	0
Volume Right	19	0	0
cSH	943	1480	1700
Volume to Capacity	0.02	0.01	0.06
Queue Length 95th (m)	0.4	0.1	0.0
Control Delay (s)	8.9	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	875	1660	2	0	2
Future Volume (Veh/h)	0	875	1660	2	0	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	972	1844	2	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1846				2331	923
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1846				2331	923
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	325				31	272

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	486	486	1229	617	2
Volume Left	0	0	0	0	0
Volume Right	0	0	0	2	2
cSH	1700	1700	1700	1700	272
Volume to Capacity	0.29	0.29	0.72	0.36	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	18.3
Lane LOS					C
Approach Delay (s)	0.0		0.0		18.3
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	11	16	210	130	0
Future Volume (Veh/h)	0	11	16	210	130	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	12	18	233	144	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	413	144	144			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413	144	144			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	588	903	1438			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	12	251	144
Volume Left	0	18	0
Volume Right	12	0	0
cSH	903	1438	1700
Volume to Capacity	0.01	0.01	0.08
Queue Length 95th (m)	0.3	0.3	0.0
Control Delay (s)	9.0	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Traffic Volume (veh/h)	0	2131	841	2	0	2
Future Volume (Veh/h)	0	2131	841	2	0	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2368	934	2	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	936				2119	468
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	936				2119	468
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	727				43	542

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1184	1184	623	313	2
Volume Left	0	0	0	0	0
Volume Right	0	0	0	2	2
cSH	1700	1700	1700	1700	542
Volume to Capacity	0.70	0.70	0.37	0.18	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	0.0	0.0	11.7
Lane LOS					B
Approach Delay (s)	0.0		0.0		11.7
Approach LOS					B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		