

January 26th, 2017

City of Ottawa
Planning and Growth Management Branch
110 Laurier Avenue West, 4th Floor
Ottawa, ON K1P 1J1

Attention: Mr. Wally Dubyk, C.E.T.
Project Manager, Infrastructure Approvals

Dear Sir:

Reference: 373 Princeton Avenue
Transportation Overview
Our File No.: 116126

1.0 INTRODUCTION

The following Transportation Overview has been prepared in support of a Zoning By-law Amendment and future Site Plan Control applications for 373 Princeton Avenue. This Transportation Overview will identify any transportation impacts associated with the proposed developments.

This Transportation Overview provides a description of the proposed developments, summarizes the existing conditions in the vicinity of the subject site, calculates projected trip generation volumes for the weekday AM and PM peak hours and reviews the location and spacing of the proposed accesses.

2.0 PROPOSED DEVELOPMENT

The subject site is located on the north side of Princeton Avenue between Melbourne Avenue and Edison Avenue. The subject site is currently occupied by *Les Soeurs de l'Institut Jeanne d'Arc*, a convent and place of respite for women. The building consists of 40 individual rooms with shared bathroom and kitchen, dining and living room facilities. A small number of sisters currently occupy the Jeanne d'Arc building. The existing parking lot for the Jeanne d'Arc building is accessed on Melbourne Avenue and contains 18 parking spaces. The subject site also contains three detached dwellings, one of which has a driveway on Princeton Avenue, and the other two have a shared driveway on Edison Avenue.

Cornerstone Housing is proposing to renovate the interior of the Jeanne d'Arc building to occupy as housing for women. Following the renovation, the building will contain a total of 42 affordable rooming units. The remainder of the property will be developed with infill housing. A total of five residential dwellings will front on Melbourne Avenue, four will front on Edison Avenue, and seven will front on a private lane accessed on Princeton Avenue. The existing parking lot for the Jeanne d'Arc building will be removed and replaced by a new parking lot containing six parking spaces.

The application for the renovations to the existing Jeanne d'Arc Building is currently on-going. This Transportation Overview has been prepared in support of the new residential dwellings,

which will be constructed as a future phase. This application will sever the property into the Jeanne d'Arc building site and 16 residential units. Although the site will be developed through two separate applications, this Transportation Overview will address the transportation impacts of both developments.

A site plan for the proposed developments are included in **Appendix A**.

3.0 EXISTING CONDITIONS

3.1 Roadways and Intersections

Princeton Avenue is a local roadway that runs on an east-west alignment between Churchill Avenue and Denbury Avenue. In the vicinity of the subject site, Princeton Avenue has a two lane undivided cross section with a sidewalk on the north side of the street. Parking is permitted on both sides of the street in the vicinity of the subject site. Princeton Avenue has a regulatory speed limit of 50 km/hr under the *Ontario Highway Traffic Act*.

Melbourne Avenue and Edison Avenue are local roadways that run on a north-south alignment between Ravenhill Avenue and Tillbury Avenue. Melbourne Avenue and Edison Avenue have two lane undivided rural cross sections with a regulatory speed limit of 50 km/hr under the *Ontario Highway Traffic Act*. Parking is permitted on both sides of Melbourne Avenue and Edison Avenue in the vicinity of the subject site. There is currently an asphalt pathway on the east side of Melbourne Avenue between Princeton Avenue and the existing access to the subject site.

Churchill Avenue is a major collector roadway that runs on a north-south alignment in the vicinity of the subject site. Churchill Avenue was recently reconstructed as a complete street with a two lane undivided urban cross section and sidewalks and segregated cycle tracks on both sides of the road. Churchill Avenue has a posted speed limit of 50 km/hr.

The Princeton Avenue/Melbourne Avenue and Princeton Avenue/Edison Avenue intersections currently operate under side street stop control. Stop control is provided on Melbourne Avenue and Edison Avenue, maintaining free flow conditions on Princeton Avenue. The Princeton Avenue/Churchill Avenue/Clare Street intersection is currently signalized.

3.2 Transit Facilities

A copy of the 2016 OC Transpo system map for the study area is included in **Appendix B**. This report describes all existing transit facilities within a five-minute walk of the subject site, which equates to a distance of approximately 400 metres.

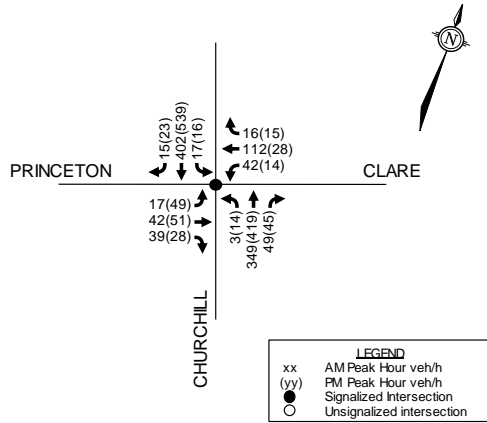
OC Transpo bus stops #7536 and #7537 are located in the southeast and southwest corners of the Princeton Avenue/Churchill Avenue intersection. These bus stops provide service to OC Transpo routes 16 and 150. These bus stops are located within a 200m walk from the subject site.

3.3 Existing Traffic Volumes

An eight-hour traffic count was completed by the City of Ottawa at the Churchill Avenue/Princeton Avenue/Clare Street intersection on Wednesday May 2nd, 2012. Peak hour summary sheets for the aforementioned traffic count are included in **Appendix C**. Existing weekday AM and PM peak

hour traffic volumes at the Churchill Avenue/Princeton Avenue/Clare Street intersection are shown in **Figure 2**.

Figure 2: Existing Traffic Volumes



4.0 TRIP GENERATION AND ASSESSMENT

4.1 Trip Generation

The interior of the existing Jeanne d’Arc building will be renovated, but will function similar to the existing use. As the building’s use is not anticipated to change significantly and the new surface parking lot will reduce on-site parking from 18 spaces to six spaces, trips generated by this building are not anticipated to increase. As such, the renovation to the existing Jeanne d’Arc building is not anticipated to have a significant effect on the roadway operations.

Based on the foregoing, additional trips generated by the proposed developments will be associated with the future residential phase. Trips generated by the future residential phase have been estimated using relevant peak hour trip generation rates in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*. Trips generated by the proposed future residential phase have been estimated using the Residential Condominium/Townhouse land use (LU 230).

Trips generated by the future residential phase during the weekday AM and PM peak hours are shown in the following table.

Table 1: ITE Trip Generation

Land Use	Units	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Condo/Town	16	2	10	12	9	4	13

Based on the foregoing, the proposed site is anticipated to generate a total of twelve vehicle trips during the AM peak hour and thirteen vehicle trips during the PM peak hour. This equates to approximately one vehicle every five minutes.

Trips generated by the future residential phase is anticipated to arrive/depart the area using Princeton Avenue.

4.3 Roadway Assessment

The lane capacity of a local roadway with on-street parking and at-grade intersections (Princeton Avenue) is estimated at 400 vehicles per hour per lane. The existing traffic volumes along Princeton Avenue suggest the road is operating at approximately 35% capacity (peak direction). Traffic generated by the future residential phase will slightly increase traffic along Princeton Avenue, but is anticipated to have little to no effect on the roadway operations.

5.0 ON-SITE DESIGN

5.1 Proposed Access

5.1.1 *Jeanne d'Arc Building Site*

The existing access to the Jeanne d'Arc building is approximately 6.7 metres in width and located approximately 33 metres from the northern property line. This access, along with the existing parking lot will be removed and a new access/parking lot will be constructed.

The new Jeanne d'Arc building parking lot will contain a total of six parking spaces, and will be accessed via a 3.2 metre driveway along Melbourne Avenue. The City of Ottawa's Zoning By-law (ZBL) identifies a maximum width of 3.6 metres for a double traffic lane that leads to less than 20 parking spaces.

The subject property will be divided as part of this application, reducing the Jeanne d'Arc building site to approximately 60 metres in depth (along Melbourne Avenue) and 40 metres in width (along Princeton Avenue). The proposed access will be located along Melbourne Avenue, 1.2 metres from the new northern property line. The spacing between the proposed access and the new northerly property line does not meet the minimum requirement of three metres identified in the City of Ottawa's Private Approach By-law. As such, a waiver to the Private Approach By-law is required for the access to the Jeanne d'Arc building parking lot.

Transportation Association of Canada (TAC) *Geometric Design Guidelines* Section 3.2.9.8 identifies "a 1.0 metre minimum spacing is recommended between adjacent low volume driveways for residential properties, along local and collector roadways". The proposed access is anticipated to carry low traffic volumes (only serves six parking spaces), is located along a local roadway, and is located approximately 5.8 metres from the adjacent driveway for the proposed residential dwelling. Based on the foregoing, the proposed access is anticipated to operate in a safe and efficient manner, and a waiver of the Private Approach By-law is recommended.

5.1.2 *Future Residential Phase*

The existing driveways to the three detached dwellings are located along Princeton Avenue and Edison Avenue. These driveways will be removed as part of this application.

The driveways for the residential dwellings located on Melbourne Avenue and Edison Avenue conform to the requirements of the City's Private Approach By-law. Seven of the residential dwellings front on a private lane accessed along Princeton Avenue. These residential driveways will have a 1.5m radius at the private lane to accommodate vehicular turning movements in and out of the dwellings. These units are proposed to front on a private lane rather than Edison Avenue to minimize the impact on the existing street trees and on-street parking. The private lane will be

three metres in width, and will be located approximately 20 metres from the easterly property line and 0.2 metres from the new westerly property line. The spacing between the proposed private lane and the westerly property line does not meet the minimum requirement of three metres identified in the City's Private Approach By-law. As such a waiver to the Private Approach By-law is required for the private lane.

The proposed private lane will be the only access on the north side of Princeton Avenue, between Edison Avenue and Melbourne Avenue. The private lane will carry low traffic volumes as it only serves seven residential dwellings. Based on the foregoing, the proposed private lane is anticipated to operate in a safe and efficient manner, and a waiver of the Private Approach By-law is recommended.

5.2 On-Site Parking

Minimum parking requirements are set out in Section 101 of the City's ZBL. The subject site is located in Area X on Schedule 1A of the City's ZBL. Minimum parking space requirements for the proposed Jeanne d'Arc building are identified in the ZBL as follows:

- Residential Care Facility
0.125 per unit over twelve
0.5 per 100m² of GFA used for medical, health or personal services

The Jeanne d'Arc building will contain a total of 42 rooming units and approximately 20m² GFA of medical/health space. Based on the foregoing, the Jeanne d'Arc building will require six parking spaces. The proposed parking lot for the Jeanne d'Arc building will contain six parking spaces meeting the minimum requirements of the City's ZBL.

Minimum bicycle parking space requirements for the Jeanne d'Arc building are identified in the ZBL as follows:

- Rooming House
0.25 per unit

Based on the foregoing, the Jeanne d'Arc building will require eleven bicycle parking spaces. Six bicycle parking spaces will be provided in an enclosure adjacent to the proposed parking lot and six will be provided near the main building entrance, exceeding the minimum requirements of the City's ZBL.

6.0 CONCLUSIONS AND RECOMMENDATIONS

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

- The future residential phase is anticipated to generate a total of twelve vehicle trips during the AM peak hour and thirteen vehicle trips during the PM peak hour. This equates to approximately one vehicle every five minutes.
- Traffic generated by the future residential phase will slightly increase traffic along Princeton Avenue, but is anticipated to have little to no effect on the roadway operations.

- The proposed Jeanne d'Arc building parking lot access is anticipated to carry low traffic volumes (only serves six parking spaces), is located along a local roadway, and is located approximately 5.8 metres from the adjacent driveway for the proposed residential dwelling. Based on the foregoing, the proposed access is anticipated to operate in a safe and efficient manner, and a waiver of the Private Approach By-law is recommended.
- The driveways for the residential dwellings located on Melbourne Avenue and Edison Avenue conform to the requirements of the City's Private Approach By-law.
- Seven of the residential dwellings front on a private lane accessed along Princeton Avenue. These residential driveways will have a 1.5m radius at the private lane to accommodate vehicular turning movements in and out of the dwellings. These units are proposed to front on a private lane rather than Edison Avenue to minimize the impact on the existing street trees and on-street parking.
- The proposed private lane will be the only access on the north side of Princeton Avenue, between Edison Avenue and Melbourne Avenue. The private lane will carry low traffic volumes as it only serves seven residential dwellings. The proposed private lane is anticipated to operate in a safe and efficient manner, and a waiver of the Private Approach By-law is recommended.
- The proposed parking lot for the Jeanne d'Arc building will contain six parking spaces meeting the minimum requirements of the City's ZBL.
- Six bicycle parking spaces will be provided in an enclosure adjacent to the proposed parking lot and six will be provided near the main building entrance, exceeding the minimum requirements of the City's ZBL.

Yours truly,

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Prepared by:

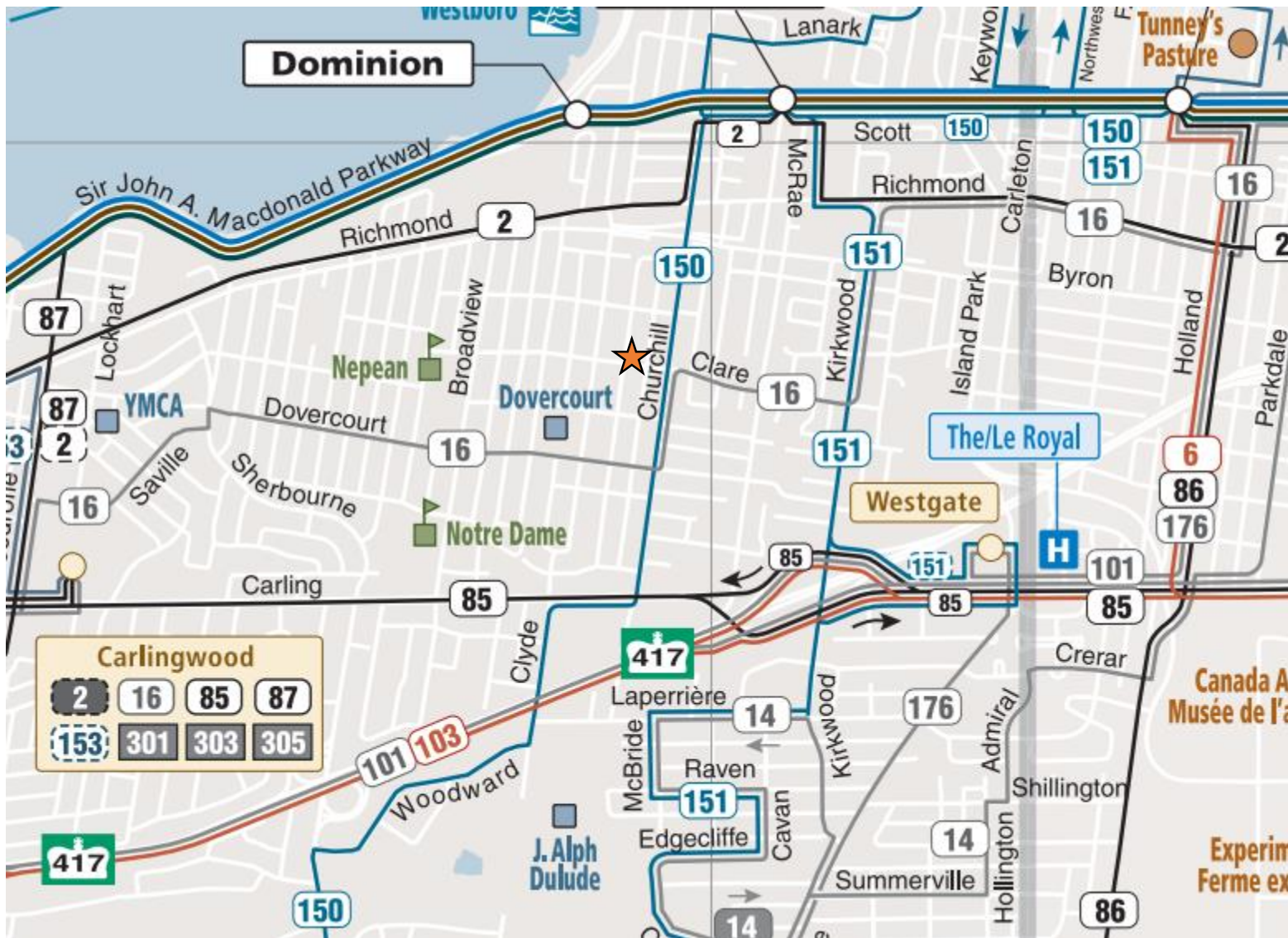
Brad Byvelds, P. Eng.
Project Coordinator | Transportation/Traffic

APPENDIX A

Proposed Site Plan

APPENDIX B

OC Transpo System Map



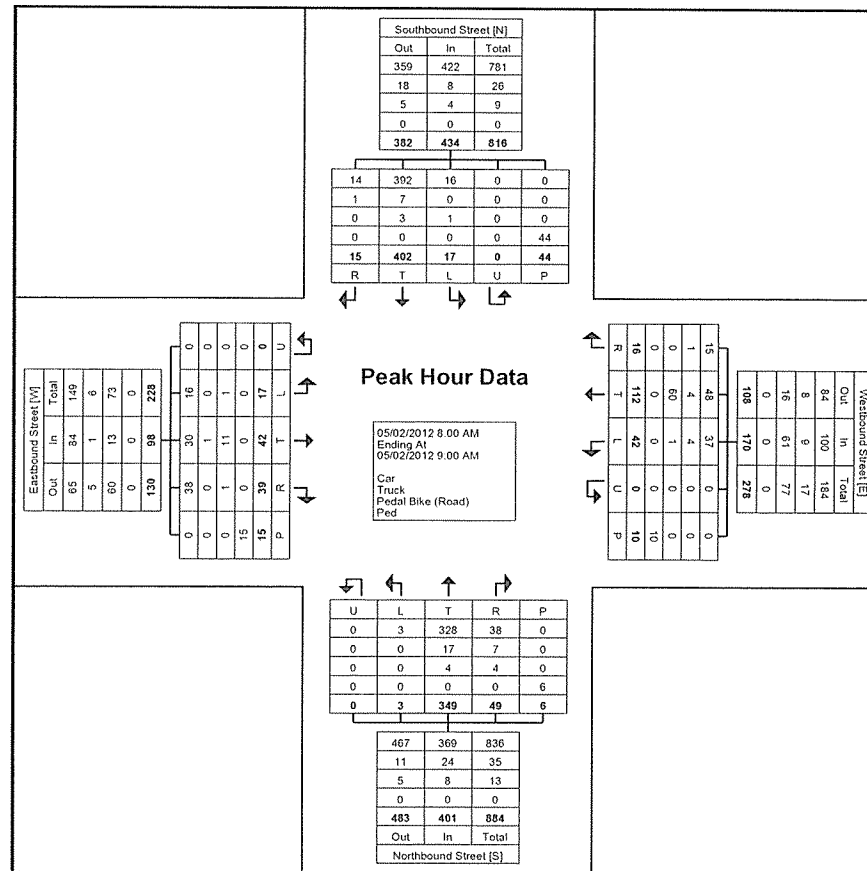
★ SUBJECT SITE

APPENDIX C

Traffic Count Information

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Southbound Street Southbound						Westbound Street Westbound						Northbound Street Northbound						Eastbound Street Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
8:00 AM	3	93	5	0	2	101	4	17	16	0	3	37	7	78	2	0	2	87	12	15	2	0	4	29	254
8:15 AM	2	110	2	0	8	114	3	10	8	0	2	21	16	94	1	0	2	111	7	8	2	0	4	17	263
8:30 AM	8	88	5	0	16	101	3	31	10	0	0	44	13	87	0	0	1	100	9	14	7	0	7	30	275
8:45 AM	2	111	5	0	18	118	6	54	8	0	5	68	13	90	0	0	1	103	11	5	6	0	0	22	311
Total	15	402	17	0	44	434	16	112	42	0	10	170	49	349	3	0	6	401	39	42	17	0	15	98	1103
Approach %	3.5	92.6	3.9	0.0	-	-	9.4	65.9	24.7	0.0	-	-	12.2	87.0	0.7	0.0	-	-	39.8	42.9	17.3	0.0	-	-	-
Total %	1.4	36.4	1.5	0.0	-	39.3	1.5	10.2	3.8	0.0	-	15.4	4.4	31.6	0.3	0.0	-	36.4	3.5	3.8	1.5	0.0	-	8.9	-
PHF	0.469	0.905	0.850	0.000	-	0.919	0.667	0.519	0.656	0.000	-	0.625	0.766	0.928	0.375	0.000	-	0.903	0.813	0.700	0.607	0.000	-	0.817	0.887
Car	14	392	16	0	-	422	15	48	37	0	-	100	38	328	3	0	-	369	38	30	16	0	-	84	975
% Car	93.3	97.5	94.1	-	-	97.2	93.8	42.9	88.1	-	-	58.8	77.6	94.0	100.0	-	-	92.0	97.4	71.4	94.1	-	-	85.7	88.4
Truck	1	7	0	0	-	8	1	4	4	0	-	9	7	17	0	0	-	24	0	1	0	0	-	1	42
% Truck	6.7	1.7	0.0	-	-	1.8	6.3	3.6	9.5	-	-	5.3	14.3	4.9	0.0	-	-	6.0	0.0	2.4	0.0	-	-	1.0	3.8
Pedal Bike (Road)	0	3	1	0	-	4	0	60	1	0	-	61	4	4	0	0	-	8	1	11	1	0	-	13	86
% Pedal Bike (Road)	0.0	0.7	5.9	-	-	0.9	0.0	53.6	2.4	-	-	35.9	8.2	1.1	0.0	-	-	2.0	2.6	26.2	5.9	-	-	13.3	7.8
Ped	-	-	-	-	44	-	-	-	-	-	10	-	-	-	-	-	6	-	-	-	-	-	15	-	-
% Ped	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



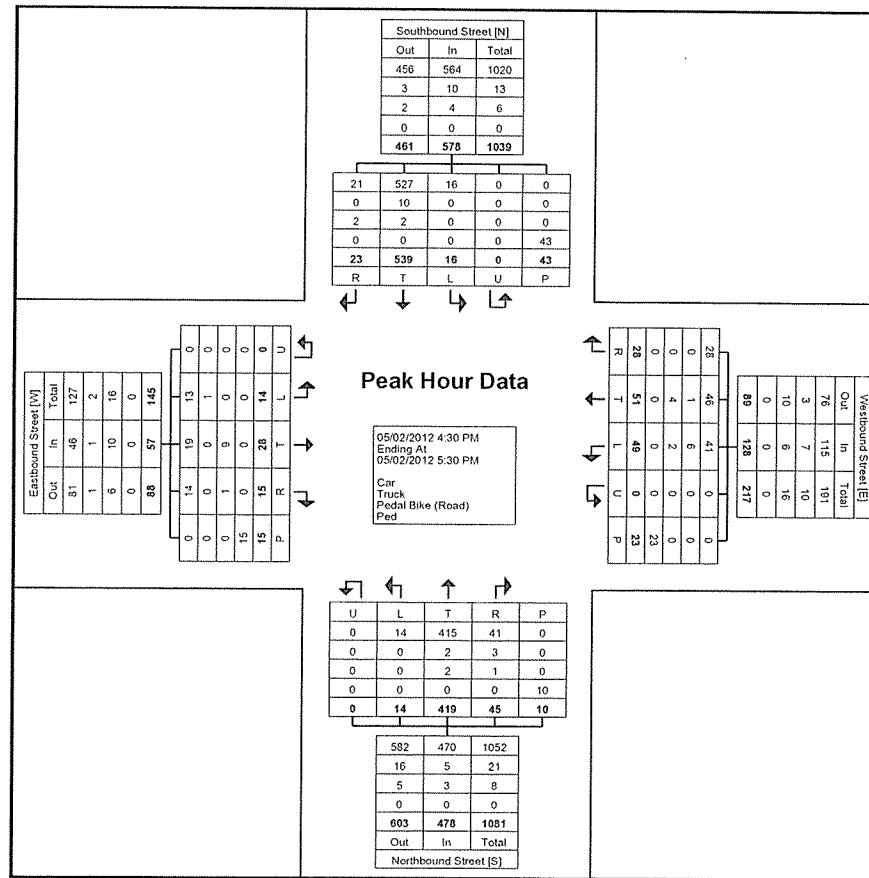
Turning Movement Peak Hour Data Plot (8:00 AM)

City of Ottawa
 110 Laurier Ave West
 Ottawa, Ontario, Canada K1P 1J1
 613-580-2424 ashley.viau@ottawa.ca

Count Name: Churchill & Clare
 Site Code:
 Start Date: 05/02/2012
 Page No: 8

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Southbound Street Southbound						Westbound Street Westbound						Northbound Street Northbound						Eastbound Street Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:30 PM	3	137	4	0	11	144	13	16	10	0	4	39	13	96	2	0	1	111	1	3	4	0	1	8	302
4:45 PM	7	138	2	0	9	147	6	9	11	0	8	26	7	85	7	0	4	99	3	9	2	0	0	14	286
5:00 PM	4	133	4	0	23	141	5	16	12	0	3	33	13	130	1	0	2	144	3	5	3	0	10	11	329
5:15 PM	9	131	6	0	0	146	4	10	16	0	8	30	12	108	4	0	3	124	8	11	5	0	4	24	324
Total	23	539	16	0	43	578	28	51	49	0	23	128	45	419	14	0	10	478	15	28	14	0	15	57	1241
Approach %	4.0	93.3	2.8	0.0	-	-	21.9	39.8	38.3	0.0	-	-	9.4	87.7	2.9	0.0	-	-	26.3	49.1	24.6	0.0	-	-	-
Total %	1.9	43.4	1.3	0.0	-	46.6	2.3	4.1	3.9	0.0	-	10.3	3.6	33.8	1.1	0.0	-	38.5	1.2	2.3	1.1	0.0	-	-	4.6
PHF	0.639	0.976	0.667	0.000	-	0.983	0.538	0.797	0.766	0.000	-	0.821	0.865	0.806	0.500	0.000	-	0.830	0.469	0.636	0.700	0.000	-	0.594	0.943
Car	21	527	16	0	-	564	28	46	41	0	-	115	41	415	14	0	-	470	14	19	13	0	-	46	1195
% Car	91.3	97.8	100.0	-	-	97.6	100.0	90.2	83.7	-	-	89.8	91.1	99.0	100.0	-	-	98.3	93.3	67.9	92.9	-	-	80.7	96.3
Truck	0	10	0	0	-	10	0	1	6	0	-	7	3	2	0	0	-	5	0	0	1	0	-	1	23
% Truck	0.0	1.9	0.0	-	-	1.7	0.0	2.0	12.2	-	-	5.5	6.7	0.5	0.0	-	-	1.0	0.0	0.0	7.1	-	-	1.8	1.9
Pedal Bike (Road)	2	2	0	0	-	4	0	4	2	0	-	6	1	2	0	0	-	3	1	9	0	0	-	10	23
% Pedal Bike (Road)	8.7	0.4	0.0	-	-	0.7	0.0	7.8	4.1	-	-	4.7	2.2	0.5	0.0	-	-	0.6	6.7	32.1	0.0	-	-	17.5	1.9
Ped	-	-	-	-	43	-	-	-	-	-	23	-	-	-	-	-	10	-	-	-	-	-	15	-	-
% Ped	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)