



MORRISON HERSHFIELD

All Saints Development

Parking Study

315 Chapel Street
Ottawa, ON

Presented to:

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MH Project# 2170032

October 25, 2017



MORRISON HERSHFIELD

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1. INTRODUCTION

1.1 Study Purpose

Morrison Hershfield Ltd. was retained by All Saints Development Inc. to provide a Parking Study in support of a Zoning By-law Amendment Application to allow a mixed-used development at All Saints (previously All Saints' Church) located at 315 Chapel Street within the Sandy Hill area of Ottawa. As the All Saints site is currently zoned as Minor Institutional, a Zoning By-law Amendment is required to allow the proposed development of residential, office and commercial uses. As part of the Zoning By-law Amendment process, pre-consultation was conducted with City of Ottawa staff and it was determined that a Parking Study was required to support this application.



Providing the right amount of parking is one of the keys for the long-term success of a development. Too much parking is costly from both a capital and operational perspective, represents an inefficient use of urban space, and may work against policies to promote transit and active travel modes. Too little parking leads to undesirable spill-over effects in adjacent communities, and for retail sites, may negatively impact the attractiveness of the development. The rationalization of parking supply is a balancing act that needs to take into consideration baseline parking conditions, anticipated parking demand, and available transportation choices (such as transit); municipal parking regulations; and residents' concerns.

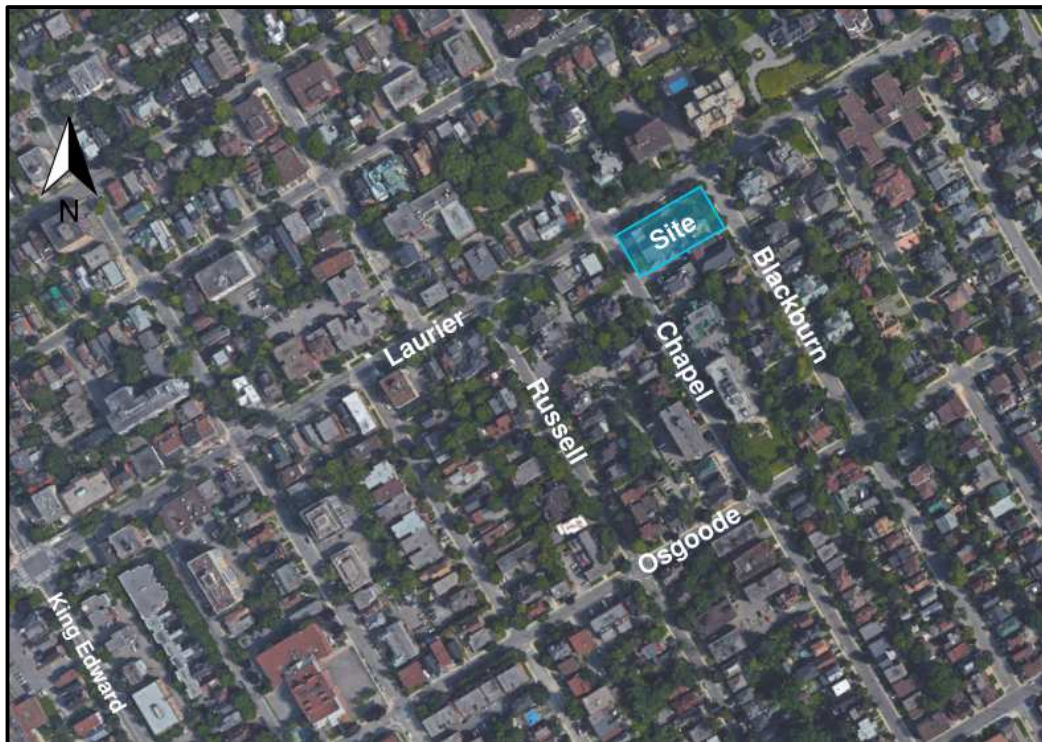
It is important to highlight that the development's proposed on-site parking supply exceeds the City of Ottawa's Zoning By-Law requirements, and as such the purpose of this parking study is not to justify any reductions in current Zoning By-Law requirements.

Nonetheless, it was requested that a Parking Study be conducted to assess the availability of public on-street parking within the site vicinity, in the event that the subject development results in parking spill-over within the neighbouring community.

1.2 Site Location

The site is bounded by Laurier Avenue East to the north, Chapel Street to the west, and Blackburn Avenue to the east. The surrounding area includes medium and low-rise residential buildings, single dwelling units and office land uses, including several embassy buildings. The site location is illustrated in **Figure 1**.

Figure 1 – Site Location



1.3 Site Description

All Saints, which is of notable historic significance, was purchased by members of the local community in an effort to preserve the site's heritage and maintain its role as an integral part of the surrounding community. Since then, All Saints has been re-purposed from a Church which included an event hall and daycare, to a multi-use community centre including space for several different religious congregations, a café, artists' studios and event space used for events such as classes, conferences, concerts and weddings.

The property has a total area of approximately 2,700 m² and includes Bate Hall (off Blackburn Avenue) which has a capacity of approximately 150 persons, and a Church and Chapel/Lower Hall (off Chapel Street) which have a capacity of approximately 300 persons and 150 persons, respectively. Access to the site is generally geared towards pedestrian traffic, with two main building entrances provided on Chapel Street and Blackburn Avenue.

A short driveway leading to a service area at the rear of the building is located on Chapel Street, and provides access to 6 on-site parking spaces. Although no other parking is currently provided on site, the parking demand resulting from the existing 300 person capacity Church, event hall and previous daycare centre have historically been absorbed by the on-street parking in the surrounding area.

The proposed re-development of All Saints involves the demolition and re-construction of Bate Hall into a 9-storey facility which will include office space, ground floor retail, café/gallery, and residential accommodation. Plans for residential accommodation are still within the conceptual phase and could include either 58 condominium units, 100 hotel units, or a

combination of the two. The existing Church is planned to house a new restaurant within the existing Chapel/Lower Hall. The 300-person capacity main level will continue to operate as a place of assembly, including weddings, classes, conferences and concerts. Although the development is expected to be completed in phases, the timing of development has not yet been established.

The concept plan includes 90 new parking spaces located within four levels of underground parking, in addition to bicycle parking / storage areas. Access to the underground parking garage is proposed via a new entrance off Blackburn Avenue, approximately 60 m south of the Laurier Avenue East & Blackburn Avenue intersection. The ground floor concept plan is provided in **Appendix A**. The land uses in the development are summarized in **Table 1** below.

Table 1 – Proposed Land Uses within All Saints

Land Use	Area (m ²)
Ground floor Retail	124
Ground floor Café	176
Atrium	142
Ground floor Dance Studio or Gallery	238
Gallery/ Café (2 nd floor)	150
Office Space (2 nd to 4 th floors)	1,837
Community Room (4 th floor)	358
Residential or Hotel Units (5 th to 12 th floors)	4,230
Restaurant (new use in existing Church)	280
Chapel/Lower Event Hall (150-person capacity, current use in existing Church)	417
Total Area	7,952 m²

2. PARKING BY-LAW REQUIREMENTS

New minimum parking requirements were endorsed by the City of Ottawa Planning Committee in June 2016 and came into effect in July 2016. Under the new Zoning By-law, the proposed development will have a minimum parking requirement of 68 parking spaces after accounting for shared parking provisions (as outlined in Section 104 of the Zoning By-law). **Table 2** below details the minimum parking requirements according to the City of Ottawa Zoning By-law.

Table 2 – Minimum Parking By-Law Requirements

Land Use	Area/Number of Units	Rate	Parking Requirement	With Reduction for Shared Parking	Additional Notes
General Office (2 nd to 4 th floors)	1,837m ²	1 per 100m ²	18	16	-
Condominiums (5 th to 9 th floors) ¹	56 units	Resident: 0.5 per unit Visitor: 0.1 per unit	22 resident 4 visitor	22 resident 2 visitor	First 12 units exempt
Retail (ground floor and atrium)	266m ²	1.25 per 100m ²	3	3	-
Cafés (ground and 2 nd floor)	326m ²	5.0 per 100m ²	16	15	-
Community Room (4 th floor)	358m ²	2.0 per 100m ²	7	7	-
Dance studio / gallery (ground floor)	238m ²	1.25 per 100m ²	3	3	-
Restaurant/Chapel/Lower Event Hall (Church building)	280m ²	-	0	0	No minimum parking as heritage building
Total			73	68	-

As shown above, the total site parking requirement is 68 parking spaces. As the site plan includes 90 underground parking spaces, the proposed development exceeds the minimum parking requirement by 22 parking spaces. It is noted that although the community meeting room and dance studio/ gallery are current land uses which exist within the existing Bate Hall building, they were included in the calculation of parking by-law requirements.

¹ The parking rate for hotel units is 1 per every 2 guest units for up to 40 guest units, and 1 per 12 guest units over 40 guest units. Assuming 100 hotel units results in a requirement of 25 hotel parking spaces (equivalent to the condominium parking requirement).

3. TRANSPORTATION FACILITIES

3.1 Pedestrian and Cycling Facilities

All Saints is located within a walkable community and is well serviced by pedestrian facilities including sidewalks on both sides of Laurier Avenue East, Chapel Street and Blackburn Avenue. Although no dedicated cycling facilities currently exist along the adjacent road network, Chapel Street is identified as a Suggested Cycling Route in the City of Ottawa 2013 Cycling Master Plan. In addition, Laurier Avenue East west of Cumberland Street is designated as a Spine Route/ Cross-town Bikeway in the City of Ottawa 2013 Transportation Master Plan and provides designated cycling facilities. Less than 400m south of All Saints, Somerset Street East has east-west bike lanes that connect to crossings of the Rideau Canal to the west and the Rideau River to the east, making it a major cycling route for the Sandy Hill area.

3.2 Transit Service

Transit service is currently provided along Laurier Avenue East by OC Transpo Route 19, with bus stops located directly in front of the All Saints site. Route 19, which extends between the Mackenzie King transit station to the west and the St-Laurent Shopping Centre to the east, operates with approximately 15 minute headways during the morning and afternoon peak hours and provides service throughout the day, including weekends. Route 16, which runs from St. Paul's University in the south to Britannia Beach in the west, also provides some limited service along Laurier Avenue East. Additional transit service (routes 7, 12, 14 and 18) are available on Rideau Street, approximately 430 m walking distance from the site.

3.3 Future Light Rail Transit

The Confederation Line, which will be open in 2018, will provide Light Rail Transit service between Tunney's Pasture Station in the west and Blair Station in the east. Two stations will be located less than 1500 m from All Saints: Rideau Station (1400 m) and University of Ottawa Station (1110 m). Transit routes on Rideau Street (which is approximately 430 m walking distance from the site), will provide frequent connections to the future Light Rail Transit stations.

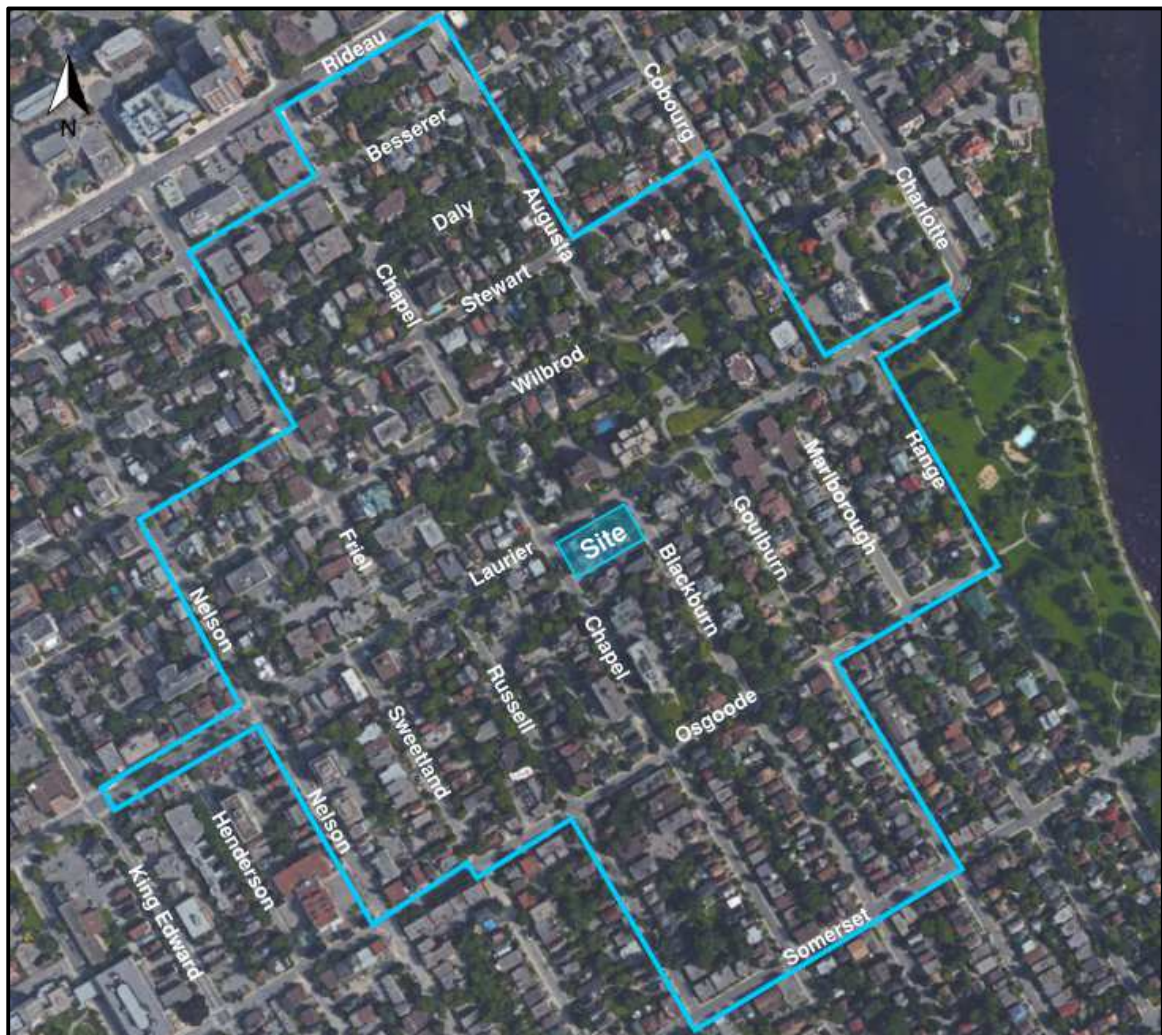
4. PARKING SURVEY

4.1 Survey Methodology

The purpose of this survey was to assess the peak on-street parking demand and supply within a reasonable walking distance from the development, and determine whether available public parking can absorb potential parking spill-over as a result of the subject site.

The study area for the parking survey is defined as an approximate 5 minute walking distance (~400m) to/from the proposed development. The limits of the parking survey are illustrated in **Figure 2**. Data was collected for all on-street parking spaces within the study area.

Figure 2 – Study Area



Parking data was collected at six different time periods during late September in order to capture typical peak parking demand within the study area. The surveys captured the weekday late-morning, afternoon and evening periods; the Saturday mid-afternoon and evening time periods; as well as the Sunday mid-morning period (during church services). Exact survey dates and times are listed below:

- Thursday, September 21, 2017
 - 11:00 am to 12:00 pm
 - 1:00 pm to 2:00 pm
 - 8:00 pm to 9:00 pm
- Saturday, September 23, 2017
 - 1:00 pm to 2:00 pm
 - 8:00 pm to 9:00 pm
- Sunday, September 24, 2017
 - 11:00 am to 12:00 pm

Data collectors were given pre-determined walking routes that were to be strictly followed to ensure consistency, with each route starting at the times indicated above. The weather was sunny with no precipitation on all survey days. No extraordinary events or circumstances were observed during the survey that might impact the parking activity within the area, however several parking spaces were observed to be temporarily closed due to construction activities. It should also be noted that the surveys were undertaken after the start of the school year and the University of Ottawa's fall semester.

The data collected was used to determine the Parking Occupancy at the blockface level. Peak Occupancy is calculated based on the number of observed parked vehicles divided by the available parking supply. Based on industry standards, when on-street parking occupancy routinely reaches or exceeds 85%, the supply is said to have reached practical capacity. Occupancies at 85% or less indicate that at least one or two parking spaces are available per blockface, while occupancies above 85% indicate a high level of difficulty in finding a parking space.

4.2 Parking Inventory

The on-street parking supply within the site vicinity is unpaid. The majority of parking spaces west of Chapel Street have a one-hour time limit, while the majority of spaces east of Chapel Street have a three-hour time limit. Parking is generally unrestricted after 6-7 pm.

An inventory of on-street parking spaces was undertaken in mid-September. The inventory of on-street parking spaces was developed by measuring the distance between adjacent driveways / side streets and applying the following formula to estimate the number of spaces:

$$\frac{\text{Segment length (m)} + 2 (m)}{6 (m)}$$

In applying the formula, it should be noted that the segment length refers to the length after it has been adjusted to account for the following 'no parking' zones:

- 1.5 m from driveways
- 9 m from intersections
- 3 m from fire hydrants

Where possible, the estimated parking supply was confirmed during the parking survey based on the observed number of parked spaces at full capacity. As part of the inventory, data was also collected on existing on-street parking regulations.

A breakdown of parking supply is provided in **Table 3** (separated by east-west and north-south streets). As shown in **Table 3**, there are a total of 550 on-street parking spaces within the study area. **Figure 3** illustrates the location of on-street parking spaces and time limit regulations.

Table 3 – Existing On-Street Parking Supply

East / West Streets				
	Block	Supply		
		North Side	South Side	Subtotal
Laurier Ave	King Edward Ave to Henderson	2	-	2
	Henderson Ave to Nelson St	5	5	10
	Nelson St to Friel St	1	-	1
	Sweetland Ave to Russell Ave	-	8	8
	Friel St to Chapel St	6	-	6
	Russell Ave to Chapel St	-	4	4
	Chapel St to Blackburn Ave	2	4	6
	Blackburn Ave to Goulburn Ave	5	2	7
	Goulburn Ave to Marlborough Ave	2	8	10
	Marlborough Ave to Range Rd	6	3	9
Range Rd to Charlotte St	8	-	8	
Osgoode St	Sweetland Ave to Russell Ave	6	-	6
	Russell Ave to Chapel St	-	10	10
	Chapel St to Blackburn Ave	3	-	3
	Blackburn Ave to Goulburn Ave	-	7	7
	Goulburn Ave to Marlborough Ave	5	-	5
Marlborough Ave to Range Rd	-	6	6	
Somerset St	Russell Ave to Chapel St	7	-	7
	Chapel St to Blackburn Ave	4	-	4
	Blackburn Ave to Goulburn Ave	10	-	10
Wilbrod St	Nelson St to Friel St	7	-	7
	Friel St to Chapel St	9	-	9
	Chapel St to Augusta St	10	-	10
	Augusta St to Cobourg St	11	-	11
Stewart St	Nelson St to Friel St	-	11	11
	Friel St to Chapel St	-	13	13
	Chapel St to Augusta St	-	10	10
	Augusta St to Cobourg St	-	9	9
Daly Ave	Friel St to Chapel St	12	-	12
	Chapel St to Augusta St	18	-	18
Besserer St	Friel St to Chapel St	15	-	15
	Chapel St to Augusta St	16	-	16
Total				270

Table 3 – Existing On-Street Parking Supply cont'd

North / South Streets				
North / South Streets	Block	Supply		
		West Side	East Side	Subtotal
Nelson St	Stewart St to Wilbrod St	5	-	5
	Wilbrod St to Laurier Ave	10	-	10
	Laurier Ave to Osgoode St	9	5	14
Sweetland Ave	Laurier Ave to Osgoode St	-	16	16
Russell Ave	Laurier Ave to Osgoode St	22	-	22
	Osgoode St to Somerset St	18	-	18
Chapel St	Rideau St to Besserer St	6	-	6
	Besserer St to Daly Ave	3	-	3
	Daly Ave to Stewart St	4	-	4
	Stewart St to Wilbrod St	3	-	3
	Wilbrod St to Laurier Ave	12	-	12
	Laurier Ave to Osgoode St	11	-	11
	Osgoode St to Somerset St	16	-	16
Blackburn Ave	Laurier Ave to Osgoode St	24	-	24
	Osgoode St to Somerset St	15	-	15
Goulburn Ave	Laurier Ave to Osgoode St	18	-	18
	Osgoode St to Somerset St	20	-	20
Marlborough Ave	Laurier Ave to Osgoode St	19	-	19
Range Rd	Laurier Ave to Osgoode St	-	-	-
Friel St	Daly Ave to Stewart St	5	-	5
	Stewart St to Wilbrod St	6	-	6
	Wilbrod St to Laurier Ave	4	-	4
Augusta St	Rideau St to Besserer St	6	-	6
	Besserer St to Daly Ave	8	-	8
	Daly Ave to Stewart St	3	-	3
	Stewart St to Wilbrod St	6	-	6
Cobourg St	Stewart St to Wilbrod St	6	-	6
Total				280
Grand Total				550

Figure 3 – Existing Permitted On-Street Parking Locations and Restrictions



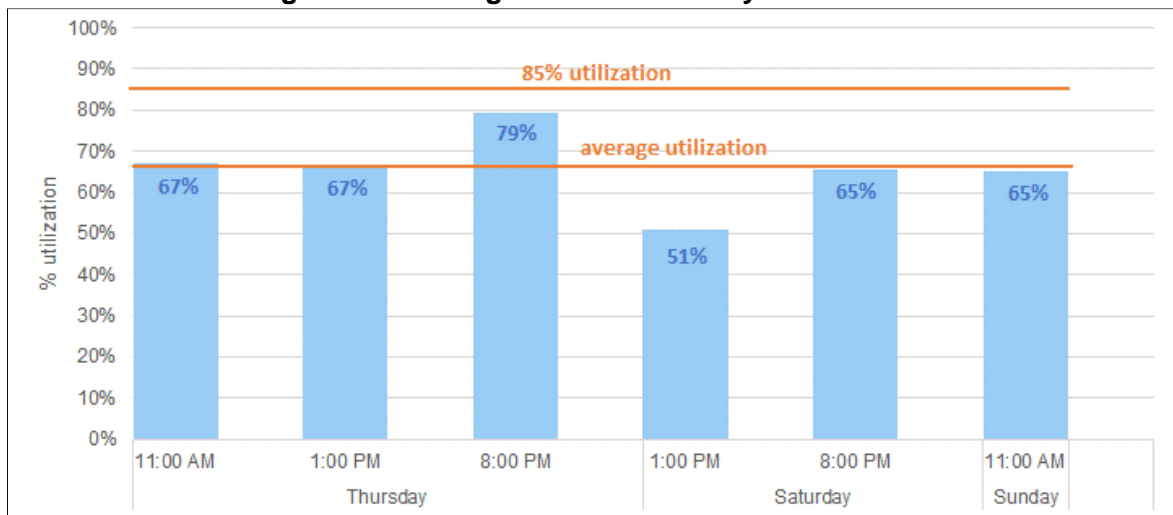
4.3 Parking Survey Results

Table 3 and **Figure 4** provide a summary of the total parking demand and utilization for each of the survey periods.

Table 3 – Summary of Parking Demand

Total Study Area				
Survey Period	Parking Supply ²	Parked Cars	% Utilized	Available Spaces
Weekday Mid-Morning	533	358	67%	175
Weekday Afternoon	533	356	67%	177
Weekday Evening	540	428	79%	112
Saturday Afternoon	544	277	51%	267
Saturday Evening	544	356	65%	188
Sunday Mid-Morning	544	355	65%	189
Average	540	355	66%	185

Figure 4 – Parking Utilization Rate by Time Period



The peak occupancy of 79% was observed during the weekday evening, which is expected considering the high residential land uses in the area. Overall, the parking occupancy within the study area ranged between approximately 50% and 80%.

Thus, based on the survey findings, excess parking supply of approximately 175 parking spaces (based on 65% occupancy) are available during weekday/weekend daytime hours, in addition to weekend evening hours, and 110 parking spaces (based on 79% utilization) are available during weekday evening hours. A detailed summary of the parking survey results is provided in **Appendix A**.

² The parking supply reflects parking restrictions during specific time periods (e.g. no parking between 8 am to 2 pm near schools), and closed parking spaces during construction.

5. ASSESSMENT OF POTENTIAL SPILL-OVER EFFECTS

To determine the additional parking demand associated with the proposed All Saints development, the rates provided in the Institute of Transportation Engineers (ITE) Parking Generation Manual (4th Edition) were applied. It is noted that as the Chapel/Lower Event Hall, and the community meeting room and dance studio/ gallery are current land uses which exist within the site, they were not included in the calculation of new parking demand.

The projected parking demand associated with the proposed development is provided in **Table 4** below. The proposed on-site parking supply of 90 spaces was subtracted from the total projected parking demand to estimate the potential spill-over effects. It is noted that although some on-site parking will likely be reserved for residents and office employees, the nature of residential and office land uses allow for the implementation of shared parking agreements as peak demands happen during different times of day. As such, it is expected that the need for reserved residential/office parking spaces will be limited.

Table 4 – ITE Parking Generation

Land Use	Units	ITE Code	Parking Rate	Peak Hour Total Parked Vehicles
General Office	19,773ft ²	701	2.47/1000ft ²	49
Residential Option 1: Condominiums ³	58 units	230	1.38/unit (weeknight)	80
			0.69/unit (weekday)	40
Residential Option 2: Hotel ⁴	100 units (80% capacity)	310	0.64/occupied room	51
			0.90/occupied room	72
Ground Floor Retail	1,335ft ²	820	2.55/1000 ft ² (weekday)	3
			2.87/1000ft ² (weekend)	4
Café	1,894ft ²	939	8.00/1000 ft ² (weekday)	15
			9.78/1000ft ² (weekend)	19
Restaurant	3,014ft ²	932	5.55/1000ft ²	17
Total Weekday Day-time Parking Demand				124
Total Weekday Evening Parking Demand (no office)				75
Total Weekend Parking Demand (no office)				119
Potential Weekday Day-time Parking Spill-over				34
Potential Weekday Evening Parking Spill-over				25
Potential Weekend Parking Spill-over				29

³ The parking generation rate for condominiums during the weekday was assumed to be 50% of the weeknight rate.

⁴ The parking generation included the condominium land use as it is more conservative than the hotel land use. The hotel parking generation is provided for information purposes.

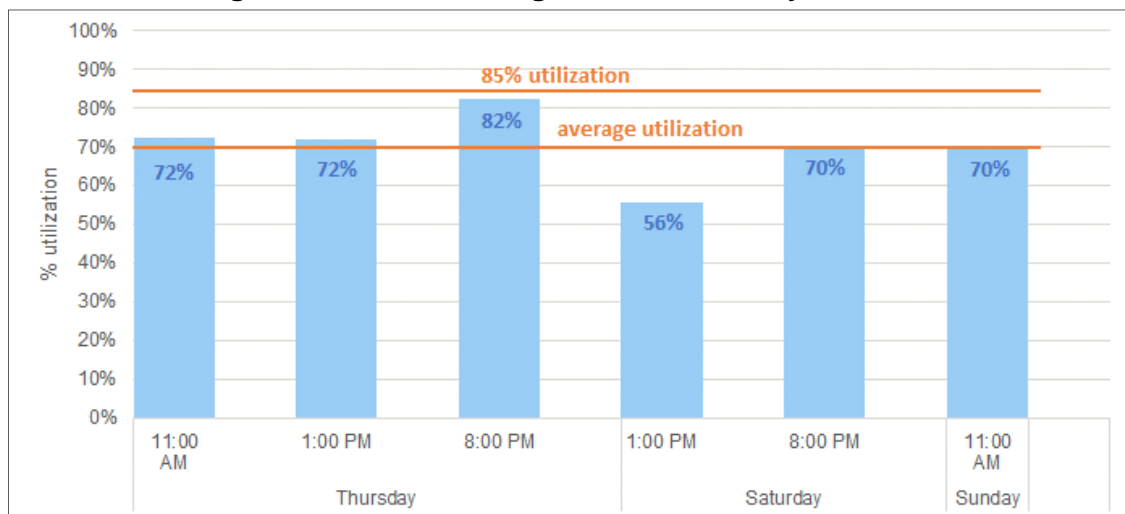
It is important to note that the above parking generation results represent a conservative estimate due to the fact that many of the ITE parking rates are based on trip generators located in suburban areas, with minimal pedestrian/cycling infrastructure and transit service. The Café and Condominium parking generation rates in particular are considered high considering the project context. As discussed in Section 3.0, the All Saints site is located within a highly walkable area, with close proximity to cycling facilities, transit service, and easy connections to future light rail transit service. As such, the parking generation rates presented above are expected to overstate anticipated future parking demand and spill-over effects.

The above results indicate that the typical parking spillover from the proposed development may reach approximately 35 vehicles on weekdays during the day, and approximately 25-30 during weekday evenings and weekends. A review of the capability of the adjacent public parking supply to accommodate the above additional parking demand is provided in **Table 5** below.

Table 5 – Summary of Future Parking Demand

Total Study Area					
Survey Period	Parking Supply	Existing Parked Cars	Potential Spill-over Generated Parking	Future Parking Demand	% Utilized
Weekday Mid-Morning	543	358	34	392	72%
Weekday Afternoon	543	356	34	390	72%
Weekday Evening	550	428	25	453	82%
Saturday Afternoon	550	277	29	306	56%
Saturday Evening	550	356	29	385	70%
Sunday Mid-Morning	550	355	29	384	70%
Average	548	355	30	385	70%

Figure 5 – Future Parking Utilization Rate by Time Period



Based on the projected parking demand, the peak parking occupancy during the weekday evening increases from 79% to 82% utilization, which is still below the target utilization rate of 85% for on-street parking.

To further assess the impact of event bookings at All Saints, which is an existing use, the potential parking spill-over associated with full occupancy of the 300-person capacity Church hall was evaluated during weekend evenings. Based on the City of Ottawa's 2011 Origin-Destination Survey for the Ottawa Inner Area district (**Appendix B**), the automobile driver/passenger mode share is 56% for trips to the district (during the afternoon peak period). Assuming a vehicle occupancy rate of 1.5, a parking demand of approximately 112 additional parking spaces can be estimated during a full-capacity event.

Based on the above, the parking occupancy during such special event bookings is projected to increase from 70% to 90% during weekend evenings. Although this occupancy rate is above the target on-street occupancy of 85%, the occupancy rate remains under capacity and is considered acceptable during special events.

6. CONCLUSIONS/ RECOMMENDATIONS

The existing public on-street parking spaces within a five-minute walk of All Saints were observed to have a peak utilization of 79% (during the weekday evening period), which indicates that at any time, there are expected to be more than 110 public on-street parking spaces available within close proximity to the development.

With the proposed provision of 90 underground parking spaces, parking spill-over within the study area is expected to be below 35 parked vehicles. As such, the peak public on-street parking utilization is expected to increase minimally from 79% to 82% during the peak weekday evening period. It is further noted that the projected increase in on-street occupancy is below the 85% target utilization rate for on-street parking. Furthermore, it is important to note that the above estimates of parking spill-over are conservative, considering the availability of walk access, cycling facilities, on-site bicycle parking, transit service and frequent connections to the future light rail transit stations.

Assuming an event takes place with full 300-person hall capacity during the weekend evening, the parking occupancy within the study area is projected to be approximately 90%, which is considered acceptable during special events. Overall, the study findings are consistent with the fact that the parking demand associated with the 300-person capacity Church has historically been absorbed by on-street parking within the site vicinity.

To maximize the efficiency of the proposed on-site parking supply, it is recommended that a shared parking agreement be implemented between the residential and office uses within the proposed development in order to limit the need for reserved parking spaces, and increase the number of spaces that are available to the public. It is also recommended that any reserved employee parking spaces be available to the public during evenings and weekends.

In summary, based on the parking evaluation presented in this study, the proposed All Saints development is expected to have minimal impact on adjacent on-street public parking. Considering the proposed on-site parking supply of 90 spaces, there is adequate existing residual parking availability to absorb any parking spill-over that may be generated by the development.

Morrison Hershfield Limited

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Transportation Planning Engineer



APPENDIX A: Full Parking Survey Data

All Saints Church Parking Survey - Full Data from All Survey Periods

Street	Side	From	To	Number of spaces	Thursday, 11:00 AM	Closed Spaces for Thursday 11 AM	Thursday, 1:00 PM	Closed Spaces for Thursday 1 PM	Thursday, 8:00 PM	Closed Spaces for Thursday 8 PM	Saturday, 1:00 PM	Closed Spaces for Saturday 1 PM	Saturday, 8:00 PM	Closed Spaces for Saturday 8 PM	Sunday, 11:00 AM	Closed Spaces for Sunday 11 AM	Notes
Laurier	N	King Edward	Henderson	2	2		1		1		0		0		0		
	N	Henderson	Nelson	2	1		1		2		0		1		1		
	S	Henderson	Nelson	3	3		2		3		3		2		3		
	S	Henderson	Nelson	3	1		3		0		2		2		2		
	N	Nelson	Friel	2	0		0		0		0		1		1		
	S	Sweetland	Russell	1	1		1		2		1		0		1		
	S	Sweetland	Russell	2	3		2		2		0		0		2		1 illegal at 11 AM Thursday
	S	Sweetland	Russell	1	1		1		0		0		0		0		
	S	Sweetland	Russell	5	5		5		5		3		3		1		
	S	Sweetland	Russell	2	2		2		2		1		2		0		
	N	Friel	Chapel	1	1		0		0		0		0		0		
	N	Friel	Chapel	1	0		0		0		0		0		0		
	N	Friel	Chapel	2	2		2		1		2		2		2		
	S	Russell	Chapel	3	3		3		3		1		2		1		
	N	Chapel	Blackburn	1	1		1		1		1		1		1		
	S	Chapel	Blackburn	2	2		2		2		1		1		2		1 illegal at 8 PM Thursday
	N	Blackburn	Goulburn	4	4		4		5		2		3		4		1 illegal at 8 PM Thursday
	N	Blackburn	Goulburn	2	2		2		3		1		2		2		1 illegal at 8 PM Thursday
S	Blackburn	Goulburn	2	2		2		1		2		2		2			
S	Blackburn	Goulburn	1	0		0		0		0		1		1			
N	Goulburn	Marlborough	2	4		4		3		2		2		2		2 illegal at 11 AM, 1 PM Thursday	
N	Goulburn	Marlborough	2	1		2		1		1		1		1			
S	Goulburn	Marlborough	3	3		3		2		0		3		0			
S	Goulburn	Marlborough	5	5		5		5		0		2		2			
N	Marlborough	Range	3	3		3		0		0		1		1			
S	Marlborough	Range	3	3		3		2		0		1		0			
N	Range	Charlotte	8	5		4		3		0		0		0			
Laurier Subtotal				71	63	0	60	0	49	0	23	0	35	0	32	0	
Osgoode	S	Marlborough	Range	3	3		1		2		0		2		0		
	S	Marlborough	Range	3	3		1		2		0		0		0		
	N	Marlborough	Goulburn	1	0		1		1		0		0		0		
	N	Marlborough	Goulburn	1	1		1		1		0		1		1		
	S	Goulburn	Blackburn	3	3		3		2		2		1		1		
	S	Goulburn	Blackburn	3	3		3		2		1		0		2		
	N	Blackburn	Chapel	1	1		1		1		0		1		1		
	N	Blackburn	Chapel	3	3		3		2		1		2		3		
	S	Chapel	Russell	1	0		0		1		1		1		1		
	S	Chapel	Russell	2	0		1		2		2		3		6		
	N	Russell	Sweetland	3	3		2		4		3		3		2		
	N	Russell	Sweetland	1	1		1		1		1		1		1		
Osgoode Subtotal				37	24	0	24	0	33	0	17	0	21	0	25	0	
Somerset	N	Russell	Chapel	6	2		3		4		4		5		5		
	N	Chapel	Blackburn	1	1		1		1		1		1		0		
	N	Blackburn	Goulburn	3	2		2		2		2		1		2		1 illegal at 11 AM Sunday
Somerset Subtotal				21	15	0	17	0	16	0	11	0	10	0	12	0	
Wilbrod	N	Nelson	Friel	1	1		2		2		1		2		2		1 illegal at 1 PM, 8 PM Thursday, 8 PM Saturday, 11 AM Sunday
	N	Nelson	Friel	2	2		2		2		2		2		2		
	N	Nelson	Friel	1	0		0		1		1		1		1		
	N	Nelson	Friel	2	2		2		2		1		2		2		
	N	Nelson	Friel	1	1		1		2		1		1		1		
	N	Nelson	Friel	2	1		2		1		2		2		2		
	N	Friel	Chapel	2	1		1		1		1		1		1		
	N	Friel	Chapel	3	0		3		0		3		3		0		No parking 8 AM - 6 PM
	N	Friel	Chapel	2	0		2		2		1		1		1		No parking 8 AM - 6 PM
	N	Chapel	Augusta	2	1		3		2		1		2		2		
	N	Chapel	Augusta	3	3		3		2		2		3		2		
	N	Chapel	Augusta	2	3		2		2		2		2		1		1 blocking driveway at 11 AM Thursday
	N	Chapel	Augusta	2	2		2		2		1		2		2		
	N	Augusta	Cobourg	1	1		1		1		1		1		1		
	N	Augusta	Cobourg	3	2		3		0		1		1		2		
N	Augusta	Cobourg	4	3		3		3		1		2		2			
N	Augusta	Cobourg	1	1		1		0		1		1		1			
N	Augusta	Cobourg	3	3		2		3		3		2		3			
Wilbrod Subtotal				37	27	5	30	5	30	0	24	0	31	0	28	0	
Stewart	S	Cobourg	Augusta	2	2		2		0		1		1		1		
	S	Cobourg	Augusta	2	2		2		1		1		1		0		
	S	Cobourg	Augusta	1	1		1		0		1		0		1		
	S	Cobourg	Augusta	2	2		1		1		1		0		1		
	S	Cobourg	Augusta	2	2		2		2		1		1		1		
	S	Augusta	Chapel	5	4		5		3		1		4		3		
	S	Augusta	Chapel	1	0		0		0		1		0		0		
	S	Augusta	Chapel	2	1		2		2		2		2		2		
	S	Augusta	Chapel	2	2		2		1		1		2		0		
	S	Chapel	Friel	3	2		3		3		2		3		2		
	S	Chapel	Friel	1	0		1		1		0		2		1		1 illegal at 8 PM Saturday
	S	Chapel	Friel	4	3		4		3		2		4		4		
	S	Chapel	Friel	1	1		0		1		1		1		1		
	S	Chapel	Friel	4	2		2		4		2		3		3		
	S	Friel	Nelson	2	0		1		2		0		2		1		
S	Friel	Nelson	5	2		3		5		2		5		4			
S	Friel	Nelson	1	0		1		0		1		1		1			
S	Friel	Nelson	1	0		0		0		0		0		0			
S	Friel	Nelson	2	0		0		0		0		0		0			
Stewart Subtotal				43	26	0	32	0	29	0	20	0	32	0	26	0	

All Saints Church Parking Survey - Full Data from All Survey Periods

Street	Side	From	To	Number of spaces	Thursday, 11:00 AM	Closed Spaces for Thursday 11 AM	Thursday, 1:00 PM	Closed Spaces for Thursday 1 PM	Thursday, 8:00 PM	Closed Spaces for Thursday 8 PM	Saturday, 1:00 PM	Closed Spaces for Saturday 1 PM	Saturday, 8:00 PM	Closed Spaces for Saturday 8 PM	Sunday, 11:00 AM	Closed Spaces for Sunday 11 AM	Notes	
Daly	N	Friel	Chapel	2	0		0		1		1		2		1			
				1	1		1		1		0		1		0		0	
				1	0		0		1		1		1		1		0	
	N	Chapel	Augusta	2	2		0		2		2		2		2		2	
				6	2		3		6		2		2		5		4	
				7	5		6		7		2		4		5		5	
				4	4		4		3		1		2		2		1	
Daly Subtotal				30	19	0	20	0	25	0	11	0	19	0	14	0		
Besserer	N	Augusta	Chapel	5	3		3		5		3		3		3			
				1	1		1		0		1		1		1		1	
				1	0		0		1		1		0		0		0	
				1	0		0		0		0		0		0		0	
				3	1		0		3		3		3		3		2	
				1	0		0		0		0		0		0		0	
	N	Chapel	Friel	1	1		0		0		0		0		0		0	
				3	1		0		1		1		1		1		1	
				5	1		0		3		4		4		3		4	
				1	0		0		0		0		0		0		1	
				9	6		4		4		8		7		9		7	
Besserer Subtotal				31	14	0	8	0	21	0	20	0	20	0	19	0		
Nelson	E	Laurier	Osgoode	4	4		4		4		3		4		3			
				1	0		0		1		0		1		1		1	
	W	Laurier	Osgoode	2	2		1		2		2		2		1			
				7	6		1		7		5		5		6			No parking (school bus loading zone) weekdays 2-4 PM
				2	2		2		2		1		2		2		2	
W	Wilbrod	Stewart	5	4		5		4		4		6		3				
			3	2		3		2		3		3		2		2		
Nelson Subtotal				29	24	0	20	0	27	0	21	0	28	0	23	0		
Sweetland	E	Osgoode	Laurier	1	1		0		1		1		1		1		1	
				3	1		2		3		3		2		1		1	
				1	1		0		1		1		0		0		1	
				1	1		1		1		1		1		1		1	
				2	2		2		2		1		2		1		1	
				3	0		1		3		2		2		2		1	
				1	1		1		1		1		1		1		1	
				1	1		1		1		1		1		1		0	
				1	1		0		1		1		1		1		0	
				2	2		2		2		1		2		2		0	
				Sweetland Subtotal				16	11	0	10	0	16	0	13	0	13	0
Russell	W	Laurier	Osgoode	4	3		2		4		0		3		4			
				2	1		1		2		1		2		2		2	
				1	1		1		1		1		2		1		1	
				2	1		1		2		2		2		2		2	
				1	1		1		1		1		1		1		1	
				2	2		2		2		1		2		2		2	
				5	2	3	1	3	4	3	0	3	2	3	1	3	2	3
	5	1	3	0	3	2	3	1	3	2	3	2	3	2	3	3	Construction trucks / equipment blocking stalls all study period	
	W	Osgoode	Somerset	6	0		0		4		1		1		1		2	
				4	0		1		4		1		2		1		1	
				1	1		1		0		0		0		1		0	
				1	0		0		1		0		0		0		0	
				1	0		0		0		0		1		0		1	
				1	0		1		1		1		1		1		0	
				1	0		1		1		1		1		1		0	
				1	1		0		1		1		1		2		1	
				1	0		0		1		1		1		1		1	
1				1		1		1		1		0		1		0		
Russell Subtotal				40	15	6	14	6	32	6	14	6	26	6	21	6		
Chapel	W	Rideau	Besserer	4	2		2		2		1		1		0			
				2	2		0		1		2		1		2			
	W	Besserer	Daly	3	0		0		2		1		1		0			
				2	1		2		2		0		2		0			
	W	Daly	Stewart	1	1		1		1		1		1		1			
				1	1		1		1		0		1		1			
	W	Stewart	Wilbrod	3	0		1		3		1		3		2			
				4	2		3		1		2		4		2			
	W	Wilbrod	Laurier	2	0	2	0	2	2	0	1	1	1	1	1	1		No parking, weekdays 7 AM - 7 PM
				5	5		4		5		0		4		5			
				1	0		0		0		0		0		0		1	
	W	Osgoode	Laurier	2	1		1		1		1		1		3			1 illegal at 11 AM Sunday
				6	3		1		5		2		5		6			
				3	3		2		3		2		3		4			
				2	0		2		2		1		1		2			
				1	1		0		0		0		1		1		1	
				1	1		1		1		1		1		0		1	
W		Somerset	Osgoode	1	0		0		1		1		0		1		1	
				1	0		0		1		1		0		0		0	
				1	0		0		1		1		0		1		1	
				1	0		0		1		0		1		1		1	
				1	0		0		1		1		0		1		1	
				2	1		1		2		2		1		2		2	
Chapel Subtotal				55	24	2	23	2	43	0	24	0	37	0	43	0		

All Saints Church Parking Survey - Full Data from All Survey Periods

Street	Side	From	To	Number of spaces	Thursday, 11:00 AM	Closed Spaces for Thursday 11 AM	Thursday, 1:00 PM	Closed Spaces for Thursday 1 PM	Thursday, 8:00 PM	Closed Spaces for Thursday 8 PM	Saturday, 1:00 PM	Closed Spaces for Saturday 1 PM	Saturday, 8:00 PM	Closed Spaces for Saturday 8 PM	Sunday, 11:00 AM	Closed Spaces for Sunday 11 AM	Notes	
Blackburn	W	Laurier	Osgoode	11	5		5		10		7		9		11		1 illegal at 11 AM Thursday, 11 AM Sunday	
				4	1		1		4		1		3		3			
				6	1		1		4		4		1		6			
				3	0		3		4		1		0		3			2 parked in loading zone at 8 PM Thursday
				1	1		0		1		0		0		1			
				1	1		1		1		1		0		1			
	W	Osgoode	Somerset	2	1		1		2		2		1		2			
				1	0		0		1		1		0		0			
				1	2		1		1		1		1		1			
				1	1		1		1		1		1		1			
				1	1		1		1		1		1		1			
				1	1		1		1		1		1		1			
				1	1		0		1		1		1		1			
				1	0		0		1		1		1		1			
				1	1		1		1		0		1		1			
				1	0		1		1		1		1		1			
				2	2		1		3		1		0		2			1 illegal at 8 PM Thursday
Blackburn Subtotal				39	19	0	19	0	38	0	25	0	21	0	37	0		
Goulburn	W	Somerset	Osgoode	2	2		2		2		0		1		1			
				1	1		1		1		1		0		1			
				1	1		1		1		0		1		1			
				4	2		4		4		1		2		2			
				1	1		1		1		1		1		1			
				1	0		1		0		1		0		0			
				2	1		2		2		1		1		1			
				3	1		3		3		1		2		1			
				2	2		2		1		1		1		1			
				2	2		2		1		0		1		2			
	W	Osgoode	Laurier	1	1		1		0		1		1		0			
				2	1		2		2		1		1		1			
				1	1		0		1		1		1		1			
				3	3		4		1		1		0		2			1 blocking driveway at 1 PM Thursday
				2	2		2		2		1		0		2			
				3	3		3		2		1		2		3			
				2	1		2		2		2		1		2			
Goulburn Subtotal				38	30	0	38	0	29	0	18	0	20	0	27	0		
Marlborough	W	Laurier	Osgoode	5	3		4		3		3		5		3			
				1	1		1		1		1		1		1			
				1	1		1		2		0		1		1			1 illegal at 8 PM Thursday
				1	1		0		1		1		1		1			
				4	3		3		1		2		2		2			
				2	2		2		1		2		1		1			
				4	3		4		3		2		2		4			
				1	1		1		1		1		0		1			
Marlborough Subtotal				19	15	0	16	0	13	0	12	0	15	0	11	0		
Friel	W	Laurier	Wilbrod	3	0		3		3		1		1		2		Friel Street closed from Wilbrod to Laurier on weekday	
				1	0		1		0		1		0		2		Friel Street closed from Wilbrod to Laurier on weekday	
	W	Wilbrod	Stewart	2	2		2		1		2		2		2			
				2	2		1		1		1		1		2			
	W	Stewart	Daly	2	2		0		2		3		2		2			
				1	1		0		1		1		1		1			
Friel Subtotal				15	8	4	4	4	8	4	9	0	10	0	14	0		
Augusta	W	Stewart	Wilbrod	3	3		3		2		1		2		1			
				3	3		2		1		2		2		1			
	W	Stewart	Daly	2	2		2		0		2		0		2			
				1	1		1		1		1		1		0			
	W	Daly	Besserer	4	2		3		3		3		3		4			
				4	4		2		2		2		4		0			
W	Besserer	Rideau	2	2		1		2		1		1		1				
			3	0		1		1		1		1		3				
Augusta Subtotal				23	18	0	15	0	13	0	13	0	14	0	12	0		
Cobourg	W	Wilbrod	Stewart	5	5		5		5		2		3		4			
				1	1		1		1		0		1		0			
Cobourg Subtotal				6	6	0	6	0	6	0	2	0	4	0	4	0		
Grand Total				550	358	17	356	17	428	10	277	6	356	6	355	6		

APPENDIX B: 2011 Origin-Destination Survey - Ottawa Inner Area District

Ottawa Inner Area

Demographic Characteristics

Population	86,790	Actively Travelled	72,340
Employed Population	45,370	Number of Vehicles	32,580
Households	45,430	Area (km ²)	16.4

Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	21,170	18,680	39,850
Part Time Employed	2,550	2,960	5,520
Student	8,310	9,560	17,870
Retiree	5,810	7,960	13,770
Unemployed	1,430	1,280	2,710
Homemaker	30	1,810	1,850
Other	1,030	1,030	2,050
Total:	40,340	43,290	83,630

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	9,170	11,080	20,240
Licensed Drivers	28,610	29,590	58,200
Telecommuters	460	300	760
Trips made by residents	119,140	130,660	249,800

Selected Indicators	
Daily Trips per Person (age 5+)	2.99
Vehicles per Person	0.38
Number of Persons per Household	1.91
Daily Trips per Household	5.50
Vehicles per Household	0.72
Workers per Household	1.00
Population Density (Pop/km ²)	5290

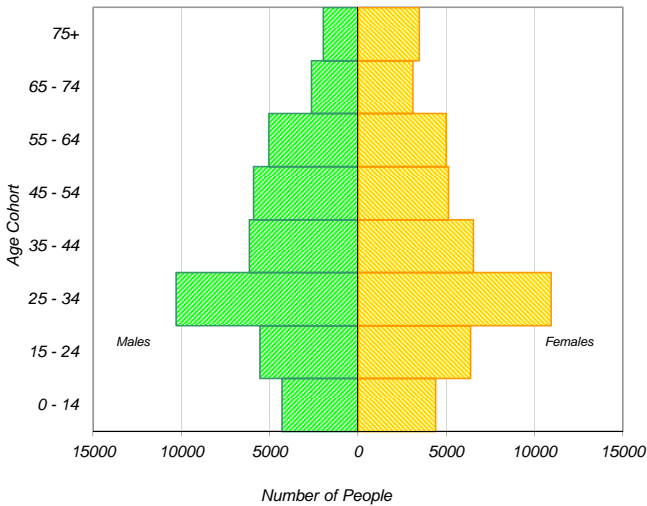


Household Size		
1 person	22,750	50%
2 persons	14,360	32%
3 persons	4,230	9%
4 persons	2,600	6%
5+ persons	1,480	3%
Total:	45,430	100%

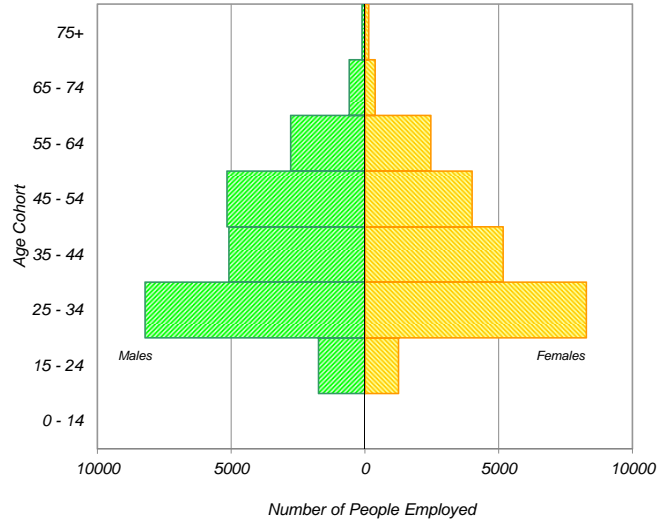
Households by Vehicle Availability		
0 vehicles	18,620	41%
1 vehicle	21,890	48%
2 vehicles	4,220	9%
3 vehicles	590	1%
4+ vehicles	120	0%
Total:	45,430	100%

Households by Dwelling Type		
Single-detached	6,530	14%
Semi-detached	2,860	6%
Townhouse	3,320	7%
Apartment/Condo	32,720	72%
Total:	45,430	100%

Population



Employed Population

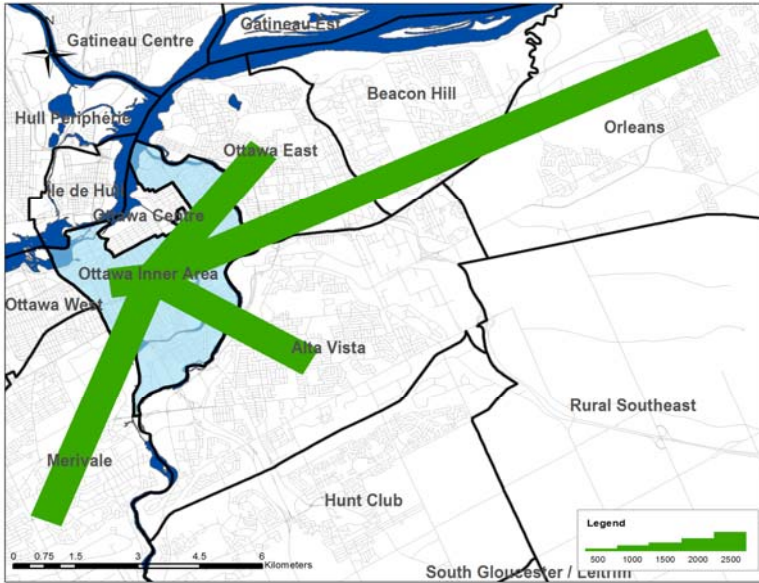


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Origins of Trips to Ottawa Inner Area

AM Peak Period



Summary of Trips to and from Ottawa Inner Area

AM Peak Period (6:30 - 8:59)

Districts	Destinations of Trips From		Origins of Trips To	
	District	% Total	District	% Total
Ottawa Centre	9,420	21%	1,160	2%
Ottawa Inner Area	17,180	37%	17,180	28%
Ottawa East	1,960	4%	3,670	6%
Beacon Hill	1,450	3%	1,380	2%
Alta Vista	4,270	9%	4,970	8%
Hunt Club	830	2%	3,060	5%
Merivale	3,260	7%	4,710	8%
Ottawa West	1,750	4%	3,080	5%
Bayshore / Cedarview	830	2%	2,860	5%
Orléans	630	1%	4,800	8%
Rural East	70	0%	250	0%
Rural Southeast	60	0%	830	1%
South Gloucester / Leitrim	250	1%	530	1%
South Nepean	340	1%	2,270	4%
Rural Southwest	150	0%	580	1%
Kanata / Stittsville	970	2%	3,350	5%
Rural West	20	0%	380	1%
Île de Hull	1,330	3%	440	1%
Hull Périphérie	670	1%	1,350	2%
Plateau	0	0%	1,040	2%
Aylmer	200	0%	1,050	2%
Rural Northwest	40	0%	240	0%
Pointe Gatineau	130	0%	1,470	2%
Gatineau Est	110	0%	700	1%
Rural Northeast	0	0%	500	1%
Buckingham / Masson-Angers	10	0%	240	0%
Ontario Sub-Total:	43,440	95%	55,060	89%
Québec Sub-Total:	2,490	5%	7,030	11%
Total:	45,930	100%	62,090	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	33,110	19%	37,330	21%	11,400	11%
School	4,810	3%	34,570	20%	10,560	10%
Shopping	19,380	11%	7,740	4%	11,860	11%
Leisure	15,940	9%	18,120	10%	16,560	15%
Medical	3,560	2%	4,220	2%	2,120	2%
Pick-up / drive passenger	7,310	4%	10,650	6%	5,660	5%
Return Home	84,260	48%	56,020	32%	44,570	41%
Other	6,860	4%	6,870	4%	5,630	5%
Total:	175,230	100%	175,520	100%	108,360	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	20,960	73%	23,220	52%	5,450	32%
School	3,200	11%	16,280	36%	6,270	37%
Shopping	440	2%	240	1%	290	2%
Leisure	790	3%	750	2%	940	5%
Medical	460	2%	500	1%	240	1%
Pick-up / drive passenger	1,120	4%	2,330	5%	1,490	9%
Return Home	1,180	4%	900	2%	1,170	7%
Other	590	2%	730	2%	1,320	8%
Total:	28,740	100%	44,950	100%	17,170	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	1,250	3%	880	2%	510	2%
School	90	0%	2,360	7%	770	3%
Shopping	4,250	9%	1,950	5%	3,320	13%
Leisure	3,140	7%	4,730	13%	3,240	13%
Medical	540	1%	490	1%	480	2%
Pick-up / drive passenger	2,490	5%	2,410	7%	1,560	6%
Return Home	32,930	71%	21,350	59%	14,280	56%
Other	1,690	4%	1,770	5%	1,350	5%
Total:	46,380	100%	35,940	100%	25,510	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	459,110		24%
AM Peak Period	90,860	20%	19%
PM Peak Period	107,830	23%	24%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	76,930	44%	76,620	44%	23,390	22%
Auto Passenger	21,230	12%	21,160	12%	8,750	8%
Transit	49,630	28%	49,160	28%	10,530	10%
Bicycle	6,860	4%	6,780	4%	7,380	7%
Walk	16,280	9%	17,130	10%	55,680	51%
Other	4,280	2%	4,670	3%	2,640	2%
Total:	175,210	100%	175,520	100%	108,370	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	11,370	40%	18,290	41%	3,490	20%
Auto Passenger	2,040	7%	4,080	9%	1,520	9%
Transit	7,060	25%	18,340	41%	2,220	13%
Bicycle	1,780	6%	1,990	4%	1,400	8%
Walk	5,410	19%	1,160	3%	7,530	44%
Other	1,070	4%	1,060	2%	1,020	6%
Total:	28,730	100%	44,920	100%	17,180	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	20,690	45%	15,420	43%	5,250	21%
Auto Passenger	5,070	11%	3,950	11%	2,110	8%
Transit	15,190	33%	7,820	22%	2,430	10%
Bicycle	2,440	5%	2,130	6%	1,750	7%
Walk	2,100	5%	5,840	16%	13,460	53%
Other	900	2%	770	2%	480	2%
Total:	46,390	100%	35,930	100%	25,480	100%

Avg Vehicle Occupancy	From District		To District		Within District	
24 Hours	1.28		1.28		1.37	
AM Peak Period	1.18		1.22		1.44	
PM Peak Period	1.25		1.26		1.40	

Transit Modal Split	From District		To District		Within District	
24 Hours	34%		33%		25%	
AM Peak Period	34%		45%		31%	
PM Peak Period	37%		29%		25%	