



## **354 King Street West Parking Needs Analysis**

Paradigm Transportation Solutions Limited

December 2019

**Project No.: 190322**





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09 December 2019  
Project: (190322)

King West Crossing Limited  
c/o Darko Vranich  
366 King Street West  
Hamilton ON L8P 1B3

Dear Mr. Vranich:

**RE: 354 KING STREET WEST  
PARKING NEEDS ANALYSIS**

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Paradigm was tasked with conducting a parking needs analysis for the 322 student residential units and 154 hotel suites proposed for 354 King Street West (“the Development”). The Development is supplying 255 parking spaces (115 hotel spaces and 140 student residence spaces). This study consists of a review of the City zoning requirements and a parking needs analysis. The Development is located within the northeast corner of King Street West and Queen Street North as shown in **Figure 1**.

As with any equilibrium system, there are a minimum of two components that are required to be in balance and to reach the equilibrium point. With parking systems this requires the balance of parking supply and demand. Reaching an appropriate supply level is equally important as demand. The ubiquitous oversupply of cheap and accessible parking has long been identified as a major contributing factor to the growth in single-occupant vehicle (SOV) travel.

There is a strong focus on the pedestrian environment and an emphasis upon active transportation. As the development proposal places a focus on accommodating a suitable pedestrian environment, one that would encourage active transportation based on the de-emphasis on parking, the use of blanketly applying the Zoning By-law across the development does not reflect these goals.



## Zoning re

## Zoning Requirements

The City’s Zoning By-law 05-200 is the current in-force By-law for the development. The requirements within Zoning By-law 05-200 allows exemptions and sets special off-street parking requirements for certain zoning districts. The most notable example is the Downtown Zone (DZ) district and the Transit Oriented Corridor Mixed-use Medium Density 1 (TOC1) district that are applicable within the study area as shown in **Figure 1**.

### TOC1 Requirements

As the development is located on the west side of Queen Street North, it falls under the TOC1 Zoning Requirements. **Table 1** summarizes the parking requirements for the TOC1 district.

**TABLE 1: ZONING BY-LAW PARKING REQUIREMENTS (TOC1)**

Use	Rooms	GFA	Zoning By-Law 05-200 (TOC1)	
		m <sup>2</sup>	Parking Rate	Parking Spaces Required
Hotel	154	-	1.00 spaces per guest room	154.00
Multiple Dwelling <50 square metres	123		0.30 spaces per unit	36.90
Multiple Dwelling >50 square metres 1-14 Units	14		0.70 spaces per unit	9.80
Multiple Dwelling >50 square metres 15-50 Units	35		0.85 spaces per unit	29.75
Multiple Dwelling >50 square metres 51+ Units	150		1.00 spaces per unit	150.00
Restaurant	-	376	0.00 spaces less than 450 square metres.	0.00
<b>Total Parking Required</b>				<b>380.45</b>

The parking requirements for the development is 381 spaces. The development is proposing 255 parking spaces (140 spaces for the student residence and 115 spaces for the hotel) resulting in a reduction. However, there are a number of considerations that justify a parking supply that is lower than is required under the TOC1 Zoning requirements.

### Downtown Zone (DZ) Requirements

It is important to note that the development bisects the zoning boundary line between the TOC1 district and the DZ district. The DZ district allows further parking reduction for certain uses. These reductions are for hotels that are allowed a 40 percent reduction and, multiple dwellings that are allowed up to a 70 percent reduction when compared to the TOC1 district requirements.

Applying the DZ rates to the hotel and multiple dwelling uses, a total parking supply of 196 spaces would be required. **Table 2** summarizes the parking standard calculation with the DZ rates applied.



**TABLE 2: ZONING BY-LAW PARKING REQUIREMENTS (DZ)**

Use	Rooms	GFA	Zoning By-Law 05-200 (DZ)	
		m <sup>2</sup>	Parking Rate	Parking Spaces Required
Hotel	154	-	0.60 spaces per guest room	92.40
Multiple Dwelling <50 square metres	1-12 Units	12	0.00 spaces per unit	0.00
Multiple Dwelling <50 square metres	13+ Units	111	0.30 spaces per unit	33.30
Multiple Dwelling >50 square metres	1-12 Units	12	0.00 spaces per unit	0.00
Multiple Dwelling >50 square metres	13-50 Units	37	0.50 spaces per unit	18.50
Multiple Dwelling >50 square metres	51+ Units	25	0.70 spaces per unit	17.50
Multiple Dwelling with 3+Bedrooms	1-12 Units	12	0.00 spaces per unit	0.00
Multiple Dwelling with 3+Bedrooms	13+ Units	113	0.30 spaces per unit	33.90
<b>Total Parking Required</b>				<b>195.60</b>

While this development is located on the west side of Queen Street North, if it were to be located on the east side, it would then fall within the DZ district that would require 196 parking spaces. This is a nearly a 50 percent reduction in parking requirements dependent on which side of the street the development is located.

As the surrounding built form, transportation network and, amenities are similar for either the east or west sides of Queen Street North; the supply of parking should be similar rather than requiring one side of the roadway to provide nearly double the parking supply.

### Parking Needs Analysis

The purpose of this analysis is to establish whether there is sufficient on-site parking to adequately meet the development’s peak parking demand. Peak parking demand refers to the maximum amount of parking that would be used at a particular time and place. It is a critical factor in evaluating parking solutions. Parking demand is affected by various factors such as trip rates, time of day, parking duration and geographic location.

### Student Residence

A review of actual parking demands that are likely to be generated by the student residence has been considered to assess, independent and separate from a review of Zoning By-Law requirements. To determine the “real” demand for the student residence, parking data for a student residence at 75 Columbia Street West in the City of Waterloo was reviewed. The development is located about one kilometre from both University of Waterloo and Laurier University and is located adjacent to several transit routes. The uses, location to post-secondary education and transportation network surrounding this proxy site is similar to that of the proposed developments. The parking utilization surveys were carried out in 15-minute increments from the hours of 7:00 PM to 7:00 AM.



A comparable site within Hamilton could not be located given this type of development is relatively new/ The site selected and survey times was confirmed with the City of Hamilton as being an acceptable proxy site as outlined in **Appendix A**.

The student residence proxy site experienced a maximum parking rate of 0.08 spaces per bedroom. By comparing these rates to the Zoning requirements, the “real” demand is noted to be four times less than what is prescribed in the Zoning requirements for multiple dwellings located in TOC1 district, resulting in a significant oversupply of parking for the student residence. **Appendix B** provides the parking survey data.

## Hotel Demand

As Paradigm does not have any comparable proxy data collected at a hotel, a review of industry collected parking rates has been completed. The Institute of Transportation Engineers (ITE) produces a periodic report titled Parking Generation<sup>1</sup>, which is the prevailing national standard in determining parking demand for a development. ITE standards are based on parking demand studies submitted to ITE by a variety of parties, including public agencies, developers and consulting firms. The most recent parking generation manual available is the 5<sup>th</sup> edition and is a comparative starting point to determine assumptions for the hotel land use.

This ITE peak period parking demand rates have been used as guidelines to benchmark how the City’s requirements compares to parking rates collected at hotel sites. The average peak period parking demand rate calculation is meant to represent the number of parked cars at the peak period divided by the quantity of the independent variable, such as number of rooms.

According to parking standard calculations from ITE, hotel requirements range from 0.37 – 0.76 parking spaces. The higher end of the parking ratio (0.76) is comparable to a suburban location whereas the lower end (0.36) is comparable to a centre city core. As the development bisects the zoning boundary for the DZ district, the parking rates at the lower end are considered to be reflective of the Development.

## Projected Parking Demand

A summary of the peak parking demands for each of the component uses contemplated within the development is provided in **Table 3**. The following summarizes the parking demand rates utilized:

- ▶ Student Residence demand is reflective by a peak parking demand of 0.08 spaces per bedroom, consistent with the parking demand information collected at a comparable site within the Waterloo Market.
- ▶ Hotel demand is reflective by a peak parking demand of 0.37 spaces per room, consistent with the parking demand information as outlined in the ITE periodic report Parking Generation.

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<sup>1</sup> Institute of Transportation Engineers. Parking Generation Manual (5<sup>th</sup> Edition), Washington DC, 2018.



The peak parking demand for the whole project is 138 spaces.

**TABLE 3: PROJECTED PARKING DEMAND**

Use	Units	Bedrooms	Parking Demand	
			Parking Rate	Parking Spaces Required
Hotel	154	-	0.37 spaces per suite	57.0
Student Residence	-	1,002	0.08 spaces per bedroom	80.2
<b>Total Parking Required</b>				<b>137.1</b>

### Transportation Demand Management (TDM)

In addition to the proposed supply being sufficient, the Applicant will be implementing a variety of Transportation Demand Management measures (TDM) to reduce vehicle trips and parking demand. It is expected that these measures, combined with the parking supply and availability of the future LRT Line located adjacent to the development along King Street West will provide further incentives in reducing parking demand. The TDM plan will focus on making the site a model of sustainable transportation by promoting alternative modes of transportation over the use of private automobiles. The plan calls for implementation of a comprehensive suite of strategies aimed at reducing the need for vehicle ownership:

- ▶ Sidewalk connections linking the dwelling units to the existing municipal sidewalks;
- ▶ Located adjacent to Light Rail Transit;
- ▶ 166 Long-term bicycle parking;
- ▶ 5 Short-term bicycle parking;
- ▶ Welcome packet provided to residents outlining schedules for local and regional transit services, bicycle and trail networks and the location of retail and recreational establishments;
- ▶ Unbundled parking for the student residence;
- ▶ Should the SOBI wish to locate a station on the property at their own expense, the development would work with SOBI to accommodate a mutual aggregable location; and
- ▶ Allocate two (2) surface parking spaces for the use of a carshare vehicle.



## Conclusions

The proposed site provides for a total of 255 parking spaces (115 hotel spaces and 140 student residence spaces). The parking requirement for the development under the City of Hamilton's Zoning By-Law 05-200 TOC1 district is 381 parking spaces for the whole project (154 hotel spaces and 227 student residence spaces).

While this development is located on the west side of Queen Street North, if it were to be located on the east side, it would then fall within the DZ district that would require 196 parking spaces. This is an important factor as the zoning boundary bisects Queen Street North and provides for radically different parking requirements based on which side of the roadway the development is located. As the surrounding built form, transportation network and, amenities are similar for either the east or west sides of Queen Street North; the supply of parking should be similar rather than requiring one side of the roadway to provide nearly double the parking supply.

In addition, data collected at a local level and through industry standard data is reflected of real-world conditions and supports a lower level of parking demand than what is proposed under both the TOC1 and DZ requirements. The projected demand provides a statistically valid justification that the proposed parking supply of 255 spaces is sufficient for the intended use.

Yours very truly,

**PARADIGM TRANSPORTATION SOLUTIONS LIMITED**



**Adam J. Makarewicz**  
Dipl.T., C.E.T. MITE  
Senior Project Manager



**Stew Elkins**  
B.E.S., MITE  
Vice President





## APPENDIX A – STUDENT RESIDENCE SITE SELECTION

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## Adam Makarewicz

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**From:** Jill Juhlke  
**Sent:** 2-Dec-19 10:10 AM  
**To:** Adam Makarewicz  
**Subject:** FW: 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

Approval below...

**Jill Juhlke, C.E.T.**  
*Senior Project Manager*



### Paradigm Transportation Solutions Limited

5A-150 Pinebush Road, Cambridge ON N1R 8J8  
p: 905.381.2229 x301  
e: [jjuhlke@ptsl.com](mailto:jjuhlke@ptsl.com)  
w: [www.ptsl.com](http://www.ptsl.com)

---

**From:** Shepherd, Tyler <[Tyler.Shepherd@hamilton.ca](mailto:Tyler.Shepherd@hamilton.ca)>  
**Sent:** October 8, 2019 9:03 AM  
**To:** Jill Juhlke <[jjuhlke@ptsl.com](mailto:jjuhlke@ptsl.com)>  
**Subject:** RE: 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

God Morning Jill:

While we prefer a Hamilton site, we are fine with your proposed proxy site.

**R.C. Tyler Shepherd, Dipl. T.,**  
Parking Technologist, Development Planning  
Planning and Economic Development Department  
Phone: 905.546.2424 x 6364  
Email: [tyler.shepherd@hamilton.ca](mailto:tyler.shepherd@hamilton.ca)  
<https://www.hamilton.ca/develop-property>  
*Parking is the first thing you need, but the last thing you think of...*

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**From:** Jill Juhlke <[jjuhlke@ptsl.com](mailto:jjuhlke@ptsl.com)>  
**Sent:** October 7, 2019 5:04 PM  
**To:** Shepherd, Tyler <[Tyler.Shepherd@hamilton.ca](mailto:Tyler.Shepherd@hamilton.ca)>  
**Subject:** RE: 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

Hi Tyler,

Just following up on this since we haven't heard anything.

Thanks,

**Jill Juhlke, Dipl.T., C.E.T., MITE**  
Senior Project Manager



**Paradigm Transportation Solutions Limited**

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---

**From:** Shepherd, Tyler <[Tyler.Shepherd@hamilton.ca](mailto:Tyler.Shepherd@hamilton.ca)>  
**Sent:** September 20, 2019 10:46 AM  
**To:** Jill Juhlke <[jjuhlke@ptsl.com](mailto:jjuhlke@ptsl.com)>  
**Subject:** RE: 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

Good Moring Jill:

Sorry for the delay. I have talked with the planner on file to start the discussion. We will have a more definitive answer early next week for you.

***R.C. Tyler Shepherd, Dipl. T.,***  
Parking Technologist, Development Planning  
Planning and Economic Development Department  
Phone: 905.546.2424 x 6364  
Email: [tyler.shepherd@hamilton.ca](mailto:tyler.shepherd@hamilton.ca)  
<https://www.hamilton.ca/develop-property>  
*Parking is the first thing you need, but the last thing you think of...*

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**From:** Jill Juhlke <[jjuhlke@ptsl.com](mailto:jjuhlke@ptsl.com)>  
**Sent:** September 20, 2019 9:20 AM  
**To:** Shepherd, Tyler <[Tyler.Shepherd@hamilton.ca](mailto:Tyler.Shepherd@hamilton.ca)>  
**Cc:** Andrew Brown <[abrown@ptsl.com](mailto:abrown@ptsl.com)>  
**Subject:** FW: 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

Hi Tyler,

Just following-up on my email below.

Any input you could provide would be apricated.

Thanks,

**Jill Juhlke, Dipl.T., C.E.T., MITE**  
Senior Project Manager



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---

**From:** Jill Juhlke

**Sent:** September 13, 2019 4:21 PM

**To:** Shepherd, Tyler <[Tyler.Shepherd@hamilton.ca](mailto:Tyler.Shepherd@hamilton.ca)>

**Cc:** Andrew Brown <[abrown@ptsl.com](mailto:abrown@ptsl.com)>

**Subject:** 190492 (804-816 King St W) UHOPA-19-004 and ZAC-19-009 Proxy Site

Hi Tyler,

Unfortunately the manager was "out to lunch" when I visited 1686 Main St W. I don't think we are going to get access into the underground garage at the site. Therefore, we will not be able to use it as a proxy.

As per our conversation earlier today, it seems like neither one of us are aware of a similar site within Hamilton that will be a good proxy site candidate. Given this, would the City accept a proxy site in Waterloo? There are quite a few purpose-built student residences on Columbia Street West near Hazel Street (municipal address numbers 69, 75 and 81). They have surface parking, are located on two bus routes (one on Columbia, one on Hazel) and about one kilometre from both the University of Waterloo and the LRT. As well, University of Waterloo has a transit pass program in place similar to McMaster University. Overall, the Columbia sites are quite similar to the proposed development so hopefully you will accept one of these as a proxy site.

Please let me know.

Thanks,

**Jill Juhlke, Dipl.T., C.E.T., MITE**

*Senior Project Manager*



## Paradigm Transportation Solutions Limited

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## APPENDIX B – STUDENT RESIDENCE PROXY DATA

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**Location - 75 Columbia Street West**

**Date - Tuesday October 15 2019 - Wednesday October 16 2019**

**Time - 7:00pm - 7:00am**

Base parking demand = 9 (7:00 PM)

110 Total bedrooms

Time	In	Out	Demand	Spaces per bedroom
19:00-19:15	1	1	9	0.08
19:15-19:30	0	1	8	0.07
19:30-19:45	2	1	9	0.08
19:45-20:00	0	1	8	0.07
20:00-20:15	0	0	8	0.07
20:15-20:30	1	1	8	0.07
20:30-20:45	0	0	8	0.07
20:45-21:00	0	0	8	0.07
21:00-21:15	2	1	9	0.08
21:15-21:30	1	1	9	0.08
21:30-21:45	0	1	8	0.07
21:45-22:00	1	0	9	0.08
22:00-22:15	1	1	9	0.08
22:15-22:30	1	1	9	0.08
22:30-22:45	1	1	9	0.08
22:45-23:00	0	0	9	0.08
23:00-23:15	2	2	9	0.08
23:15-23:30	0	0	9	0.08
23:30-23:45	0	0	9	0.08
23:45-00:00	0	0	9	0.08
00:00-00:15	0	0	9	0.08
00:15-00:30	1	2	8	0.07
00:30-00:45	0	0	8	0.07
00:45-1:00	0	0	8	0.07
1:00-1:15	0	1	7	0.06

Time	In	Out	Demand	Spaces per bedroom
1:15-1:30	1	0	8	0.07
1:30-1:45	0	0	8	0.07
1:45-2:00	0	0	8	0.07
2:00-2:15	0	0	8	0.07
2:15-2:30	0	0	8	0.07
2:30-2:45	0	0	8	0.07
2:45-3:00	0	0	8	0.07
3:00-3:15	0	0	8	0.07
3:15-3:30	0	0	8	0.07
3:30-3:45	0	0	8	0.07
3:45-4:00	0	0	8	0.07
4:00-4:15	0	0	8	0.07
4:15-4:30	0	0	8	0.07
4:30-4:45	0	0	8	0.07
4:45-5:00	0	0	8	0.07
5:00-5:15	0	0	8	0.07
5:15-5:30	0	0	8	0.07
5:30-5:45	0	0	8	0.07
5:45-6:00	1	0	9	0.08
6:00-6:15	0	0	9	0.08
6:15-6:30	0	0	9	0.08
6:30-6:45	0	0	9	0.08
6:45-7:00	0	0	9	0.08
7:00-7:15	0	0	9	0.08