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November 29, 2017

Dave Aston, MSc, MCIP, RPP
Vice President
MHBC Planning, Urban Design & Landscape Architecture
540 Bingham Centre Drive, Suite 200
Kitchener, ON · N2B 3X9

Re: Traffic Assessment
284-286 Albert and 84-86 Hickory Streets

Dear Dave,

This traffic assessment letter is being provided in support of the development applications at 284-286 Albert Street and 84-86 Hickory Street West in Waterloo for a multi-residential student apartment. Full Site Plan Approval and the proposed Zoning By-law amendment for the project requires the lifting of a Holding Provision and one of the elements that is needed to lift the Holding Provision is to verify that sufficient transportation capacity and transportation infrastructure is available within the surrounding road network affected by the development. This letter provides an estimate of traffic generation for the proposal and an opinion regarding the traffic impacts.

The site is located in the Northdale area of Waterloo on the north side of Hickory Street West between Albert Street and Hemlock Street as shown on the attached location plan. This area is ideal for students attending the University of Waterloo and Wilfred Laurier University to live given its location close to the two campuses and the amenities in the area geared to the student population. In addition to being walking distance from both campuses, the area is well-served by transit and active transportation infrastructure. In the future, rapid transit stations will serve the area at the Research & Technology Park, the University of Waterloo and Seagram Drive.

The proposal (Site Plan attached) includes 124 one- and two-bedroom apartment units with a total of 151 bedrooms geared to students in a seven-storey building with a single driveway access to Hemlock Street. Parking is required in accordance with the zoning by-law at a rate of 0.25 spaces per bedroom (0.20 for residents and 0.05 for visitors) for a total requirement of 39 parking spaces. 63 spaces are proposed.

Traffic generation estimates were developed based on surveys at three similar properties in the area: 201, 202 and 203 Lester Street. All three buildings are multi-storey residential buildings. 201 and 202 Lester Street are entirely residential, while 203 Lester Street has some commercial uses, but the below-grade parking is predominantly used for the residential uses. The three buildings were chosen because they are fully-occupied, large buildings with residential uses geared to students. They are also similarly situated between the University of Waterloo and Wilfred Laurier University and have similar transportation characteristics to the subject site.

The multi-storey housing stock in the area that is geared to students is mostly five-bedroom units. There are a few buildings with one- and two- bedroom units that have recently been completed. Traffic generation rates were assessed per bedroom in order to relate the surveys to the proposal.

The surveys were undertaken during the weekday morning (7:00 to 9:00 a.m.) and afternoon (4:00 to 6:00 p.m.) peak periods as follows.

- 203 Lester Street – Wednesday, March 18, 2015. Surveys were conducted at the driveway connection to the below-grade parking. Only cars entering and exiting the below-grade parking were included. Although there are commercial uses in the building, residential parking is predominantly underground along with eight (8) assigned spaces for commercial tenants resulting in a conservative capture of residential traffic.
- 201 and 202 Lester Street – Thursday, March 19, 2015

The summary of the surveys and the estimates for the Site are included in **Table 1** below.

Property	Units	Bedrooms (b)		AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
201 Lester	68	340	trips	4	2	6	6	3	9
			rate/100b	1.2	0.6	1.8	1.8	0.9	2.6
202 Lester	66	330	trips	3	6	9	11	11	22
			rate/100b	0.9	1.8	2.7	3.3	3.3	6.7
203 Lester	85	425	trips	2	4	6	5	4	9
			rate/100b	0.5	0.9	1.4	1.2	0.9	2.1
Average rates			rate/100b	0.9	1.1	2.0	2.1	1.7	3.8
Chosen trip rates			rate/100b	1.3	1.7	3.0	3.8	3.2	7.0
Site Traffic	124	151	trips	2	3	5	6	5	11

Table 1: Traffic Generation Estimate

The surveys indicate very low residential traffic generation rates in these buildings in the weekday peak hours. For comparison, average rates from the Institute of Transportation Engineers Trip Generation Manual (9th Edition) for high-rise apartment uses (land use code 222) are 0.30 and 0.35 trips per unit in the weekday morning and afternoon peak hours. Two likely explanations are as follows.



1. Car ownership in this area of high student population is low. The zoning by-law parking requirement in Northdale is 0.25 spaces/bedroom where elsewhere, if the housing was not geared to students, parking would likely be required at between 1.0 and 1.5 spaces per unit, and the units would have one or two bedrooms.
2. The use of cars by students does not follow a typical residential pattern where drivers leave the site and go to work in the morning, returning in the afternoon. Students who have cars in these buildings do not typically use them to drive to school, given the close proximity of the two Universities. The students have cars for other purposes, like shopping, visiting and travelling out of town on weekends which results in travel outside the peak periods.

A review of traffic generation at similar buildings in the area suggests that the proposed building at the subject site will generate five (5) to 11 trips in the weekday morning and afternoon peak hours entering and exiting the site.

IBI Group and the City of Waterloo recently released the Northdale Streetscape Master Plan and Class Environmental Assessment Study (November 2016). Data in the study suggests that traffic volumes on Albert Street are currently about 400 to 700 vehicles per hour in each direction during the weekday street peak hours. The volumes are approaching the threshold for the major collector road designation for Albert Street.

Hickory Street West to the east of Hazel Street is currently carrying about 100 vehicles in each direction in the weekday peak hours, which is approaching the threshold for its local road designation. The plan recommends the conversion of Hickory Street to one-way westbound operation from Hazel to Albert Streets, in part to reduce traffic volumes on Hickory Street West and cut-through traffic in the neighbourhood generally.

The recommended layout of the surrounding road network (see attached plan) will direct traffic for the proposal to approach via westbound Hickory Street or northbound Hemlock Street and exit via southbound Hemlock Street or westbound Hickory Street to Albert Street. For traffic accessing the site in both the inbound and outbound directions, routing options are available that connect the site well to the surrounding arterial road network at Columbia Street West, King Street and University Avenue.

The additional traffic (five AM and 11 PM peak hour trips) is minimal and would not result in traffic volumes on Hickory Street that are inappropriate for a local road with the proposed improvements in the Northdale Streetscape Master Plan. It is my opinion that the incremental increase in traffic will not have a significant impact on transportation capacity and the transportation infrastructure within the surrounding road network.



If you have any questions about the information presented in this letter, please contact me to discuss.

Sincerely,



Julia Salvini, MEng, PEng
President

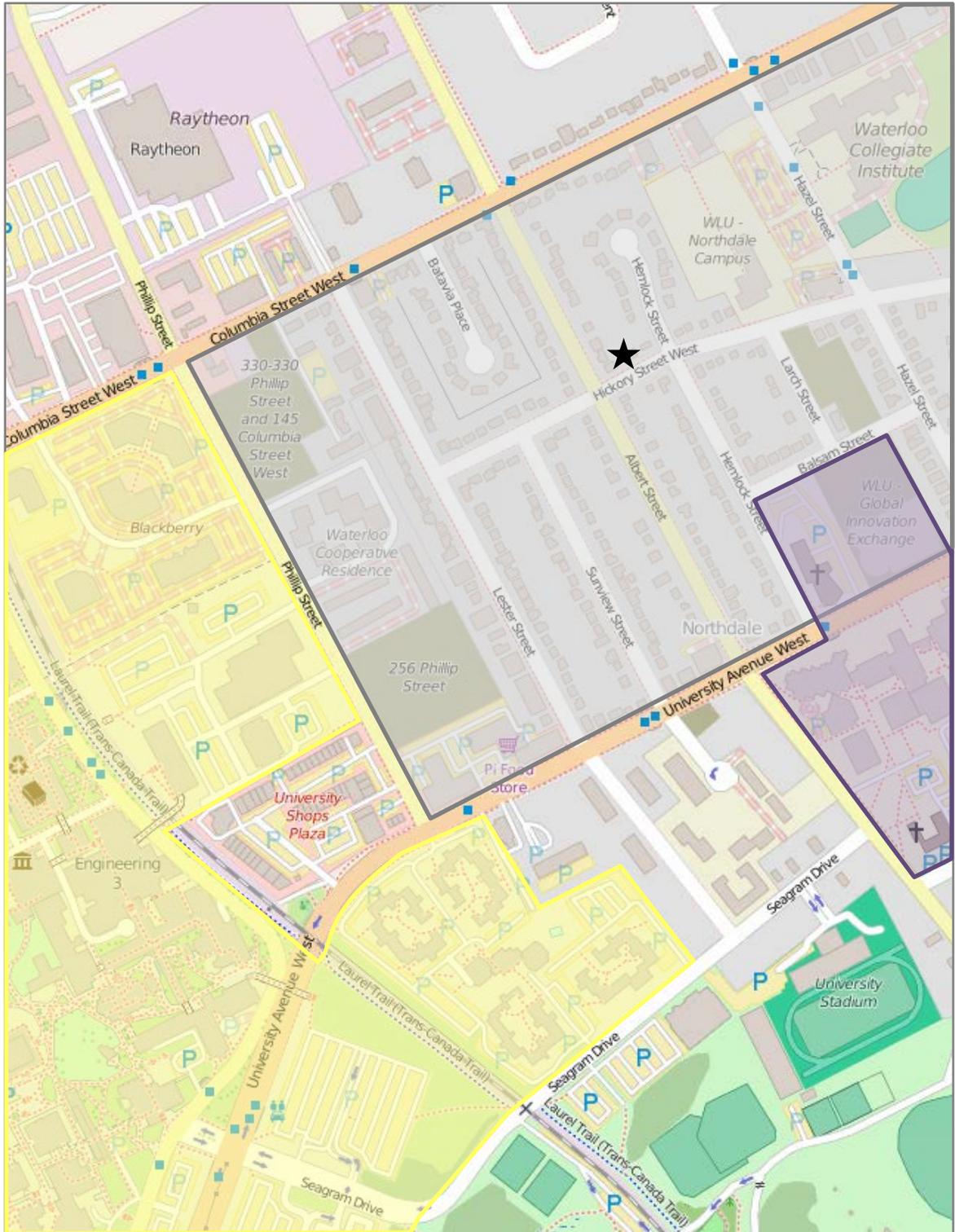
Cc: Lin, ZhiZhong & Li, JingShi
Reuben Grin, WalterFedy

Attach: Site Location Plan
Site Plan
Preferred Northdale Streetscape Traffic Flow Concept



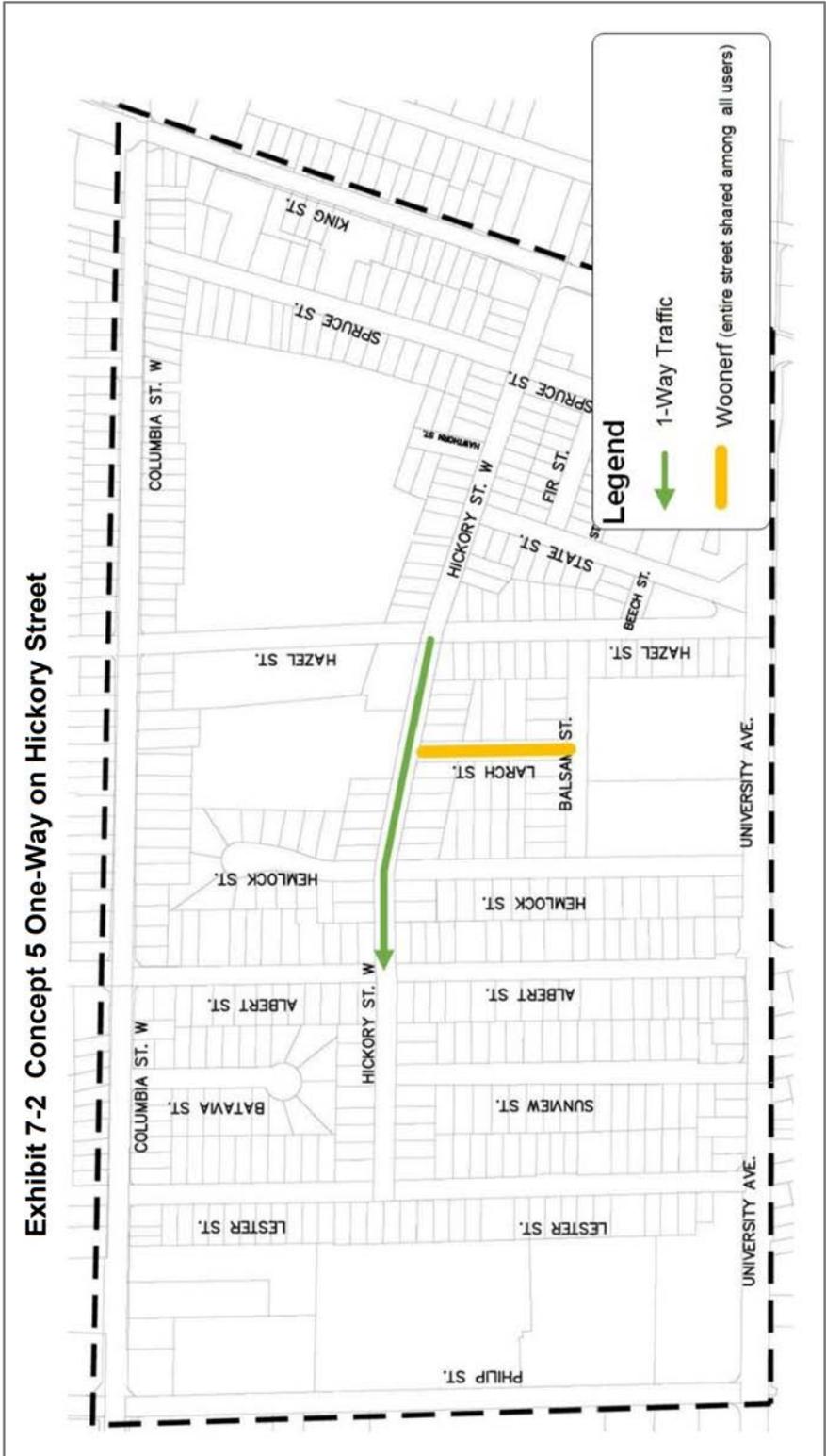
Attachments





Site Location Plan

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Preferred Northdale Streetscape Traffic Flow Concept

Source: November 2016 IBI Group Class EA Northdale Neighbourhood Streetscape Master Plan, City of Waterloo