

MEMORANDUM

DATE	July 11, 2022
TO	City of Belleville
CC	Jessica Young; Erin Baldwin
SUBJECT	Hanley Park North Traffic Impact Study Peer Review
FROM	Brandon Orr, MCIP, RPP; Andrew J. Larter, EIT.
PROJECT NUMBER	10165

Introduction

TYLin has been retained by the City of Belleville (the “City”) to provide an independent peer review of the traffic impact study (the “TIS” or the “Study”) for the proposed Hanley Park North Subdivision, as prepared by D.J. Halpenny & Associates Ltd. (the “Consultant”), originally dated November 25, 2020, and amended December 8, 2021. The Study examined the impact of the proposed development, which will be located east of Haig Road and north of Victoria Avenue, and will consist of 74 single detached homes and 29 townhouses for a total of 103 dwelling units.

TYLin has prepared the following commentary on the Study through an independent peer review. In preparing this review, we have followed the general structure of and requirements for a traffic impact study set out by the Ontario Ministry of Transportation’s *General Guidelines for the Preparation of Traffic Impact Studies* (the “MTO Guidelines”). Based on pre-study consultation with the City and the Consultant, we understand that the Study was not prepared in accordance with these Guidelines; our review has made use of the Guidelines solely for informing engineering best practice.

We have reviewed the following documents for this review:

- Traffic Impact Study (Revised), Hanley Park North Subdivision East of Haig Road (December 8, 2021), prepared by D.J. Halpenny & Associates Ltd.
- General Guidelines for the Preparation of Traffic Impact Studies (February 2021), prepared by the Ontario Ministry of Transportation Highway Operations Management – Traffic Office.

Review of Background Data – Haig Road and Victoria Avenue

To inform traffic analysis the Consultant obtained a turning movement count (TMC) data for the AM and PM peak periods at the intersection of Haig Road and Victoria Avenue on Tuesday, October 6, 2020. The Study notes correctly that this date fell during the opening weeks of the “second wave” of the COVID-19 pandemic, which may result in unrepresentatively low traffic volumes due to lower-than-typical mobility in response to the ongoing pandemic.

An adjustment factor was derived to represent pre-pandemic conditions including a comparison of AM and PM peak hour traffic counts taken in July 2018 and September 2020 on Russell Road approximately 1.5 kilometres east of Drouin Road in the City of Clarence-Rockland east of the City of Ottawa. The 2020 peak hour volumes obtained here were divided by the equivalent 2018 peak hour volumes, attributing the resulting 11% reduction in the AM peak hour and 15% reduction in the PM to the effects of the pandemic. The Study therefore applied a conservative 15% growth factor to the turning movement count obtained for the Haig Road/Victoria Avenue intersection in October 2020 to adjust for the effects of the pandemic.

The Study justifies its use of traffic data from Russell Road to represent the traffic effects of the pandemic by noting that this location “would be influenced by Ottawa federal government employees working remotely”. However, it is unclear why the location was deemed a suitable proxy for the subject site given the chosen count’s location along a rural portion of Russell Road which is a significantly different built form to the proposed site.

Additionally, traffic counts taken in different times of year (July 2018 and September 2020) are not directly comparable owing to the varying effects of seasonal travel trends and school-related trips. The Study’s choice of two traffic count dates at a single count location is unlikely to form a sufficient sample size when

attempting to accurately quantify the mobility effects of the COVID-19 pandemic.

In the course of our work in the City of Belleville on the Bell Boulevard / North Front Street Corridor Strategy Study, TYLin has analyzed publicly available anonymized mobility data published by Google to investigate the effects of the pandemic on mobility in Belleville and Hastings County. This data indicates that mobility in Belleville dropped between a pre-COVID baseline and the week of October 6, 2020 by a lesser magnitude than that estimated by the Consultant. Therefore, the Study’s assumption of a 15% growth factor to adjust for pandemic effects, although derived from limited data, represents a conservative and defensible estimate.

No Action Needed: Despite the limited relevance of the proxy count location, it is not expected that a re-evaluation of growth factors will yield significantly different study results based on our own traffic data obtained through the Bell Boulevard / Front Street Corridor Strategy Study and in combination with the relatively few trips generated by the site.

Review of Background Data – Haig Road and Oak Ridge Boulevard

No traffic count data was collected for the intersection of Haig Road and Oak Ridge Boulevard; instead, turning movements for this intersection were “determined using a trip generation analysis of the development in the area assuming the completion of the homes along Tessa Boulevard and Mercedes Drive [...] traffic volumes were then balanced with the counts taken at the Victoria/Haig intersection on October 6, 2020”. We find it reasonable to undertake a trip generation exercise to account for homes under construction and not yet occupied, although it is generally a best practice to apply these trips generated on top of collected turning movement counts. Trip generation and balancing cannot account for travel trends in the study area which may not be readily apparent in the absence of a count, such as pass-through traffic.

Given the timing of the report and the unprecedented events of the COVID-19 pandemic, we understand that data collection was a challenge and trip estimation could be a suitable alternative given the circumstances, however further details on the trip generation methodology are needed to provide a rounded assessment.

Action Needed: Required information to be provided include details of the data source for background trip generation (such as the Institute of Transportation Engineers (ITE) *Trip Generation Manual and edition*), land use codes used and assumptions made, as well as a full accounting of the number of background homes/developments being analyzed, trips generated and assigned to the network, and the balancing exercise referenced in the Study. This can be included as a letter attachment to the latest traffic study.

Review of Background Data – Growth Rates

The growth rates used in the Study to grow background traffic data from 2020 levels to the future horizon years of 2029 and 2034 were derived by calculating an annual average compounded growth rate from the City of Belleville's population growth between the 2011 and 2016 Statistics Canada Censuses. This produced an average growth rate of 0.505% per year; the Study therefore used a rate of 1.0% per annum as a conservative assumption, which we find to be reasonable.

No Action Needed: We note that, after the completion of the traffic study by the Consultant, Statistics Canada released 2021 Census data which revealed that Belleville's population grew at an average annual rate of approximately 1.67% between 2016 and 2021. The consultant would not have had access to this information during the preparation of the study and given the available network capacity identified through operational analysis; it would not have significantly changed the study conclusions. However, should additional density or site plan changes be pursued, updated

census growth value based on 2021 data should be used for future assessments.

Review of Trip Generation

The trip generation analysis conducted for the subject site is satisfactory. Land use codes from the ITE *Trip Generation Manual* (10th Edition) appear to have been selected and trips calculated appropriately.

The Study assumes a reduction in vehicular trips of 5% to account for trips made using public transit; however, no justification or methodology is provided to derive this figure, and it appears to have been selected based on engineering judgment, however there is no supporting rationale.

Action Needed: A rationale for the selected reduction in vehicle trips due to transit mode share should be explicitly stated. Transit ridership, census data, or a reference to a previously produced municipal document that supports the assumption would be acceptable. This can be included as a letter attachment to the latest traffic study.

Review of Trip Distribution and Assignment

Trip distribution was undertaken using the directionality of the turning movement count obtained at the intersection of Haig Road and Victoria Avenue as a template, with adjustments made "[in consideration of] the shortest most convenient routes to employment and retail areas". This is a methodology that is often used in the absence of better data such as origin-destination surveys, planning models, or market studies to inform a more robust trip distribution.

No Action Needed: We understand that there are significant limitations on obtaining this data within Belleville. Given its absence and the relatively small study area, the methodology followed in the Study is appropriate, however we note that should the site plan change significantly the distribution would need to add

more detail on how the distribution percentages relate to the degree of employment and retail land uses. An example would be:

- To/From the East along Victoria .10%
 - To access [insert assumption]

Review of Operational Analysis and Site Access

The Study made use of Highway Capacity Software (version 7.9.5) to conduct operational analysis in accordance with the *Highway Capacity Manual 2010* and *Highway Capacity Manual (6th Edition)*. Both study area intersections (Haig Road/Victoria Avenue and Haig Road/Oak Ridge Boulevard) are found to continue to operate at acceptable levels of service in the AM and PM peak hours of both the 2029 and 2034 horizon years, representing subdivision completion and a horizon of 5 years post-completion, respectively, without the need for any roadway or intersection modifications. We found this capacity analysis to be satisfactory and in accordance with the MTO Guidelines, which permit the use of Highway Capacity Software for intersection capacity analysis.

No Action Needed: Sufficient analysis and data was provided to support the results, with the caveat that other action items identified in this review do not significantly alter operational assumptions.

Other Considerations Not Discussed in Study

We note that there was no discussion provided on the parking implications or requirements and a supporting rationale for the provided supply. There was also no discussion of existing or planned active transportation infrastructure within the vicinity of the study area or consideration for shifting vehicular trips from the proposed development to active transportation modes. Within the Hanley Park North study area there is the presence of cycling lanes on the newly constructed extension of Haig Road

from Oak Ridge Boulevard to Station Street/Farley Avenue). Discussion of active transportation infrastructure and trips is required under MTO Guidelines for traffic impact studies, and we would advise its addition for the completeness of the Study.

Action Needed: A written confirmation of the parking requirements and their satisfaction to municipal zoning by-laws must be stated with supporting evidence. A written brief should be provided to summarize active transportation connections to the proposed site and acknowledge the existing and planned sidewalks and bike lanes, as per the City's Transportation Master Plan, as well as how the site interfaces with them. This can be included as a letter attachment to the latest traffic study.

Conclusion

Our peer review of the Hanley Park North Traffic Impact Study prepared by D.J. Halpenny & Associates Ltd. has revealed the following action items to support the stated study results:

- **Information on Background Trip Generation:** Required information to be provided include details of the data source for background trip generation (such as the Institute of Transportation Engineers (ITE) *Trip Generation Manual and edition*), land use codes used and assumptions made, as well as a full accounting of the number of background homes/developments being analyzed, trips generated and assigned to the network, and the balancing exercise referenced in the Study.
- **Transit Mode Share Rationale:** A rationale for the selected reduction in vehicle trips due to transit mode share should be explicitly stated. Transit ridership, Census data, or a reference to a previously produced municipal document that supports the assumption would be acceptable.
- **Parking Requirements & Active Transportation Summary:** A written confirmation of the parking requirements and their satisfaction to municipal zoning by-laws must be stated with supporting evidence. A written brief should be provided to summarize active transportation connections to the proposed site and acknowledge the existing and planned sidewalks and bike lanes, as per the City's Transportation Master Plan, as well as how the site interfaces with them.

The information can be included as one combined letter attachment to the latest traffic study and should be acceptable should the information provided not significantly alter the study operational assumptions and results.

If you have any questions or comments regarding the contents of this memo, please contact the undersigned.

Yours truly,



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