

5.0 PRINCIPAL FINDINGS AND RECOMMENDATIONS

This traffic impact study was carried out in support of the proposed *Residential Development* to be located in the southeast corner of the Eamers Corners Residential Community, in the vicinity of St. Antoine Street, east of McConnell Avenue and north of the railroad, in the City of Cornwall. The traffic operational analyses described in this report have provided a detailed examination of the anticipated impacts of future background and site-generated traffic for the proposed development. The following are principal findings from the study and recommendations with respect to the proposed development.

- 5.1 The study considered the weekday peak hour periods using AM and PM peak hour vehicular volumes generated by the proposed development.
- 5.2 Under the existing conditions, all movements at the study intersections currently operate at very good LOS "A" with minimum delay during AM and PM peak hours. The only exception is the critical westbound (outbound) movement at McConnell Avenue/St. Antoine Street intersection which currently operates at LOS "C" during the AM and PM peak hours.
- 5.3 For planning purposes, the 2016 traffic volumes were projected ahead to full build-out in 2020 and a 2025 future planning horizon based on an average growth rate of 1.0% per annum for the roads in the study area. The resulting background traffic volumes are illustrated in **Exhibits 2.2**.
- 5.4 Under the 2020 and 2025 background conditions, all movements at the study intersections are forecast to continue to maintain current very good LOS "A" with minimum delay during AM and PM peak hours. The only exception continues to be the critical westbound (outbound) movement at McConnell Avenue/St. Antoine Street intersection which is forecast to operate at LOS "C" during the

AM and PM peak hours.

- 5.5 The forecasts of future site trip generation for the proposed development were developed using the ITE land use *Residential Condominium/Townhouse (LU 230)* and *Single Family (LU 210)* rates. The forecast peak hour vehicular trip generation by the proposed development is summarized below and the resulting number of site generated vehicle trips is given in **Table 3.1** and illustrated in **Exhibit 3.1**.

	<u>AM Pk Hr</u>	<u>PM Pk Hr</u>
<i>Inbound</i>	43	145
<i>Outbound</i>	133	84
<i>Total</i>	176	229

- 5.6 The directional orientation of the site traffic is expected to be similar to the trip patterns observed at the study intersections and consistent with population distribution within commuting distance. The following directional distributions were assumed by the study analysis, see **Exhibit 3.1**:

	Inbound AM (PM)/Outbound AM (PM)	
To/from North	35% (25%)	/ 20% (40%)
To/from South	65% (75%)	/ 80% (60%)

- 5.7 **Exhibit 3.2** shows the projected 2020 and 2025 total traffic volumes with the trips from the proposed development.
- 5.8 Analyses of the future 2020 and 2025 total conditions indicate that with the continued growth in the McConnell Avenue traffic stream and the additional traffic from the proposed development on St. Antoine Street, the critical westbound (outbound) movement at McConnell Avenue/St. Antoine Street intersection during the AM peak hour will continue to deteriorate to LOS "F" with an average delay of approximately 75 seconds producing 95th percentile queue

of approximately 51 metres, (approximately seven vehicles) and the volume to capacity ratio at 0.85, under the 2025 planning horizon, as there are very limited gaps on McConnell Avenue traffic stream.

- 5.9 The Level of Service and the forecast congestion associated with the critical outbound (westbound left and right turns) movements from St. Antoine Street, could be mitigated by signalizing the St. Antoine Street at McConnell Avenue intersection. St. Antoine Street is situated approximately at a mid-point between two signalized intersections, McConnell Avenue/Tollgate Road East to North and McConnell Avenue/11th Street East to South. The long distance between the traffic signals on McConnell Avenue results in very limited gaps to allow the side street traffic to join the main street traffic. The only viable solution may be to signalize the intersection or turn the intersection into a roundabout intersection control.
- 5.10 Ontario Traffic Manual (OTM) Book 12 Signal Warrant Analysis based on Volume Justification 1 and 2 were carried out for St. Antoine Street/McConnell Avenue intersection based on existing, 2025 background and 2025 total traffic conditions. Furthermore, Justification 7 was performed using future 2025 Peak Hour Volumes to test if the traffic signals will be warranted at the St. Antoine Street/McConnell Avenue intersection. The signal warrant analyses indicate that traffic signals are not warranted at St. Antoine Street/McConnell Avenue intersection based on existing and projected traffic volumes.

However, it may be prudent to start planning (and monitoring traffic levels) for signalizing the St. Antoine Street/McConnell Avenue intersection to mitigate the expected level of congestion on St. Antoine Street during AM and PM peak hours.

- 5.11 No other mitigation measures will be necessary for the study intersections to accommodate the proposed residential development.