

29 May 2023  
Project: (210722)

St. Davids Riverview Estates  
1755 Stevensville Road  
Stevensville ON L0S 1S0

## **RE: TAWNY RIDGE ESTATES – PHASE 2, NOTL - TRANSPORTATION RESPONSES**

In 2022, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study for a residential Subdivision, west of Tanbark Road and south of Warner Road in the Town of Niagara-on-the-Lake. Several comments have been received by the public with respect to the November 2022 TIS.

The comments are identified, with our responses summarized below.

### **Comment 1**

There is a large legal disclaimer related to information supplied by other parties, which Paradigm have heavily relied on to reach their conclusions. That to me questions the validity of the data, the conclusions, any recommendation provided by them, and whether they are comfortable standing behind their analysis. The disclaimer is as follows: "To the extent that this report is based on information supplied by other parties, Paradigm Transportation Solutions Limited accepts no liability for any loss or damage suffered by the client, whether through contract or tort, stemming from any conclusions based on data supplied by parties other than Paradigm Transportation Solutions Limited and used by Paradigm Transportation Solutions Limited in preparing this report.

Disclaimers like this are common practice in our field and are part of all our reports where third party data has been used. They address the fact that, although data provided by third parties has been produced and processed from sources which are believed to be reliable, because we did not collect the data ourselves, we cannot guarantee their accuracy. The disclaimer does not invalidate the report's conclusions and recommendations but alerts individuals referencing the study as to the potential pitfalls.

#### Comment 2

Niagara on the Lake welcomes 3.5 million visitors a year. While Town Staff had requested traffic counts be conducted by Paradigm during peak tourist season Paradigm did not conduct traffic counts at those peak times. This shortcoming would obviously distort any analysis for York Road, Four Mile Creek, and ingress/egress related to Warner Rd. and Tanbark.

The TIS was scoped with the Town of Niagara on the Lake. The Town advised traffic counts to be conducted during peak tourist season (between Victoria Day and Canadian Thanksgiving Monday) or calculated using a WADT to SADT factor. Appendix A of the TIS contains the correspondence with the Town. The TIS adhered to this requirement and utilized counts completed in June 2019.

#### Comment 3

For unsignalized intersections, Paradigm's analysis apparently assumes that traffic on the mainline is not affected by the traffic on the side streets. Evaluation criteria used to “analyse” signalized and unsignalized intersection capacity was based on a 23-year-old 2000 Highway Capacity Manual, which might be considered to be based on outdated data and not applicable.

The Highway Capacity Manual methodology employs the following concerning the analysis of two-way stop-controlled (TWSC) intersections:

- ▶ Rank 1 major-street movements are assumed to be unimpeded by any movements of lower rank. This rank also implies that major-street movements of Rank 1 are not expected to incur delay or slowing as they travel through the TWSC intersection.
- ▶ Movements of Rank 2 (left turns from the major street and right turns from the minor street) must yield to conflicting major-street through and right-turning vehicular movements of Rank 1 as well as conflicting pedestrian movements of Rank 1. The movement capacity of each Rank 2 movement is equal to its potential capacity, factored by any impedance due to pedestrians.

The assumption in the calculations is that if a vehicle has an exclusive lane, the delay will not be incurred, given the movement will operate under free-flow conditions. The Niagara Region recognizes Highway Capacity Manual 2000 as part of intersection capacity analysis.



#### Comment 4

There does not appear to be any disclosure of Paradigm's assumptions regarding car ownership in this development, which is critical in determining vehicle traffic impacts, frequency, safety, etc. With a high-density development there will be in the neighbourhood of another 121 vehicles entering and existing that development, excluding visitors.

The trip generation estimates were developed based on third-party industry data from the Institute of Transportation Engineers (ITE). Regarding vehicle per household assumption, ITE identifies that the average characteristics for single-family detached dwelling units surveyed consisted of 3.6 residents per dwelling unit and 1.5 vehicles per dwelling unit.

#### Comment 5

Paradigm's conclusions state "The proposed new roadway onto Warner Road, opposite Angels Drive, will be constructed to provide a safe and efficient access point to the overall development, given its location and roadway geometry. The street connections will be designed with adequate width to provide for reasonable entry and exit from the development and accommodate emergency response vehicles; the proposed locations afford safe sight lines for all turning movements and approaches." However, it appears that Paradigm has not analysed the impact of residents backing their vehicles out of their driveways along Warner Rd. or Tanbark.

Tanbark Road is classified as a local roadway within the Town's Official Plan to provide access to individual properties. As noted in **Section 6.2** of the TIS, a sight distance review was completed along Tanbark Road that identified that given the roadway is relatively straight and flat, there is sufficient sight distance along the street.

The Town's Zoning By-law also regulates the minimum front and side yard requirements and building setbacks from the road right-of-way. The expected setback influences each lot's geometric design characteristics of accesses and sight distance. The proposed lots along Tanbark Road will be designed to meet the Town's requirements with respect to setbacks, ensuring the field of view is maintained for vehicles exiting the driveways either through a forward or reversing movement.

The proposed development provides no residential lots with frontage to Warner Road.



#### Comment 6

The scope of the study did not analyse the traffic flows at other important locations: Angels Drive and Tanbark; Warner Rd and Four Mile Creek; York Rd and Four Mile Creek (where there has already been considerable discussion regarding congestion and the need for a traffic circle); Speeding on Tanbark and Four Mile Creek (already an issue) and; St. Davids School student and parent traffic egress/ingress in the morning and afternoon, related safety concerns given the lack of crosswalks in the neighbourhood, and speeding.

The **approved study area** by the Town of Niagara-on-the-Lake and Niagara Region confirmed the following four intersections:

- ▶ York Road at Tanbark Road;
- ▶ Warner Road at Tanbark Road
- ▶ Tanbark Road at Pinecraft Drive
- ▶ Warner Road at Angels Drive

Concerning the intersections not included in the analysis, the following is noted:

- ▶ Angels Drive at Tanbark Road; the analysis notes that 10% of the site traffic would travel along Angels Drive, representing 1 to 3 vehicles per hour in each direction. This amount of traffic would not have an impact on the traffic operations.
- ▶ Four Mile Creek at Warner Road is also expected to have minimal volumes added to the intersection as only 4% of the site traffic would travel to/from the east along Warner Road, representing 1 to 2 additional vehicles per direction during the peak hours. This amount of traffic would not have an impact on the traffic operations.
- ▶ York Road at Four Mile Creek Road, it is understood that the Region has undertaken a Class Environmental Assessment<sup>1</sup> to investigate potential operational and safety improvements to the intersection. Class EA concluded that the intersection will be upgraded from an all-way stop control to a roundabout to meet the future needs of the surrounding community from the perspective of all road users, supporting multi-modal travel and improving road-user safety. Additional traffic from the proposed development will not have an impact to recommended improvement options.

The Region is aware of the concerns around speeding and school traffic, and will be addressed through the Region's Vision Zero program and consultation with the school board.

---

<sup>1</sup> Niagara Region - York Road and Four Mile Creek Road Municipal Class EA, Appendix B – Transportation Assessment, CIMA+, April 2021.



#### Comment 7

The study has relied on a 2019 historical traffic count which they believe provides a sound basis for developing reasonable travel volumes of the study area. A 2% compounded rate of increase was factored in to adjust historical values to 2022/2023 levels. The reliance on 2019 data and a 2% adjustment factor seems to ignore and understate the large amount of development that has occurred in St. Davids since 2019 which has created additional traffic that isn't factored into the Paradigm Study. One needs to look no further than the development on the west side of Four Mile Creek across from the Cold Storage and the Chocolate Factory. The success of the Grist Restaurant on Four Mile Creek attracts considerable visitors to its eating establishment. Both of these developments make the 2019 historical traffic count irrelevant even with an adjusting 2% compound factor.

Applying a general factor to historical counts is consistent with the Region's Transportation Impact Study Guidelines and other planning studies completed in the area. As the study was undertaken during the fall season, new traffic counts could not be collected between the peak tourist season (Victoria Day and Canadian Thanksgiving Monday). As a result, historic June 2019 traffic counts were utilized with an adjustment factor of 2% per annum. The Class EA completed for intersection improvements at York Road and Four Mile Creek Road also used a 2% per annum adjustment factor.

The Region of Niagara collects Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) for their regional road network<sup>2</sup>. AADT data is provided for 2015 and 2018 along York Road. Based on the data collected by the Region, the AADT volumes indicate that York Road is seeing a volume decrease of 2.64% per annum within the study area. Concerning SADT, the data suggests a reduction of 4.18% per annum. **Table 2** summarizes the data.

**TABLE 2: YORK ROAD AADT VOLUMES**

York Rd (Concession 7 to Four Mile Creek Rd)	Year		Growth Rate per Annum 2015-2018
	2015	2018	
AADT	6,900	6,200	-2.64%
SADT	7,000	5,900	-4.18%

Even though a decrease in traffic has been observed along York Road over four years, we believe that using a 2% per annum growth rate accurately represents general growth observed for the area and accounts for the general increase in traffic resulting from infill developments.

<sup>2</sup> <https://niagaraopendata.ca/dataset/regional-road-traffic-volumes>



#### Comment 8

Forecasted trip generation by Paradigm (page 13) is not based on actual numbers collected in St. Davids. Rather, Paradigm relies on The Institute of Transportation Engineers Trip Generation Manual (published in September 2021 with data probably a couple of years old). It appears that this is a U.S. based data base and is not Canadian. The Trip Generation Manual is also based on a summary of the trip generation data that have been voluntarily collected and submitted rather than actual trips made which is a large shortcoming. And, there are other shortcomings to the Manual as described more fully in an article on this website -

The TIS was scoped with the Town of Niagara on the Lake, confirming that the Institute of Transportation Engineers (ITE) Trip Generation Manual could be used to develop the trip estimates. The ITE Trip Generation manual is a nationally recognized resource and the preeminent source for estimating vehicle trip generation for various land uses. It is the primary source of vehicle trip generation data for transportation impact analyses in the United States and Canada. Countless municipalities, including the Niagara Region and the Town of Niagara-on-the-Lake, support it.

The ITE Trip Generation Estimates calculated that the site would generate 38 trips during the weekday AM peak hour and 48 trips during the Weekday PM peak hour. The following are the ITE trip rates for the site based on the various land uses utilized:

- ▶ Weekday AM Peak Hour - 0.51 trips per unit
- ▶ Weekday PM Peak Hour - 0.65 trips per unit

Paradigm has also reviewed a traffic count completed at Tanbark Road and Hickory Lane. Hickory Lane provides exclusive access to 50 dwelling units; a site-specific trip generation rate has been calculated to determine the trip generation considering the local characteristics. The traffic count identifies that the local area provides the following trip rates:

- ▶ Weekday AM Peak Hour - 0.32 trips per unit
- ▶ Weekday PM Peak Hour - 0.48 trips per unit

Applying the "calculated" trip rate based on the local count data to the proposed 74 dwelling units equates to 24 trips during the weekday AM peak hour and 36 trips during the weekday PM peak hour.

Application of the ITE trip generation rates is noted to project a higher number of trips when compared to the local data. This provides further confidence that the ITE trip generation rates are appropriate for estimating site-generated traffic volumes as they provide a conservative estimate.



#### Comment 9

The trip distribution analysis for the site was developed based on a 6-year-old 2016 Transportation Tomorrow Survey in the GTA. This Survey is not current and in a totally different geographical area with different characteristics.

The Transportation Tomorrow Survey (TTS) is a confidential and voluntary travel survey on how Ontarians in the Greater Golden Horseshoe and surrounding areas use the transportation system. The TTS has been conducted every five years since 1986. The collected data helps local and regional governments, province and transit agencies make transportation planning and investment decisions.

The TIS was scoped with the Town of Niagara-on-the Lake and Niagara Region, confirming that the 2016 Transportation Tomorrow Survey shall be used to develop the trip distribution. In addition, trips noted to be local with Niagara-on-the-Lake were further refined based on the existing traffic count data. An update to the TTS is planned for 2023. However, until the 2023 survey is completed, 2016 is the most current data available.

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

