To: Greg Pinchin  
Copy to: File  
From: Caitlin Sheahan  
Date: June 3, 2020  
Ref: County Transport Site Plan Application and Zoning By-Law Amendment – Traffic Review  
File: 20525-1  

Comments:

County Transport (2706684 Ontario Inc.) is proposing a Zoning By-Law Amendment for their property located immediately east of Highway 37 and south of Blessington Road (Figure 1). The development property is 10.0 hectares (ha) in size; it is currently zoned for agricultural use but is proposed to be rezoned to allow light industrial use. It is proposed to develop the land with three warehouse buildings, eight self-storage buildings, parking areas and laneways to create a truck terminal with associated warehousing (Figure 2). The purpose of this memo is to provide a review of the proposed site plan with regard to the road network and traffic flow.

Existing Conditions
The subject property fronts onto Blessington Road and Highway 37, which is under the jurisdiction of the Municipality of the City of Belleville, Hastings County as well as the Ontario Ministry of Transportation (MTO). Through the study area, Blessington Road is a two-lane road oriented east-west, providing one travel lane in each direction. The road has a rural cross-section with gravel shoulders on both sides as well as roadside drainage ditches. Upon reaching the intersection with Highway 37, however, the road has barrier curb and curb outlets. There are two (2) existing gravel entrances to the subject property. The alignment of Blessington Road in proximity to the site entrances has curvature to the northeast with a radius of approximately 260°. Through the subject area, Blessington Road has a posted speed limit of 80 km/h. Thus a design speed of 100 km/h applies (posted speed limit + 20 km/h).

Proposed Road Network & Access
The current site plan (Figure 2) includes one (1) access point for the development, intersecting Blessington Road at 90° approximately 150m east of Highway 37. The proposed entrance radii and pavement width are consistent with the MTO's standards for commercial entrances where truck access is required (CSAS – 23).
As the proposed new intersection is located 150m east of the Highway 37 intersection, it complies with the Transportation Association of Canada’s (TAC) *Geometric Design Guide for Canadian Roads*, which indicates that the minimum distance between adjacent intersections is 60m. There is an existing residential driveway on the north side of Blessington Road, which will be directly across from the proposed entrance to the site. This is consistent with TAC guidelines, which indicate that entrances on opposite sides of the road should be directly across from each other, where possible.

**Site Generated Trips and Turning Lane Review**

Trip generation rates have been determined from the Institute of Transportation Engineer’s *Trip Generation Manual (9th Edition)*. Based on the proposed land use (i.e. truck terminal / warehousing) the applicable ITE land use category for the site is ‘warehousing’ (ITE land use code 150). The applicable trip rates and corresponding trip estimates for the peak hours are provided in **Table 1**. The gross floor area (GFA) for the site is 1.265 hectares (136,163 ft²).

**Table 1: Trips Generated – County Transport Site**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Daily Trip Rate</th>
<th>PM Peak Hour (4-6 pm) Trip Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehousing</td>
<td>3.56 per 1,000 sf GFA</td>
<td>0.32 per 1,000 sf GFA</td>
</tr>
<tr>
<td></td>
<td>= 484.7 Daily Trips</td>
<td>= 43.6 PM Peak Hour Trips</td>
</tr>
</tbody>
</table>

The development is expected to generate 485 daily trips, with 44 trips in the PM peak hour (both inbound and outbound trips). MTO design criteria indicate that right turn lanes should be considered when the turning volume is anticipated to exceed 60 vehicles per hour at an unsignalized intersection. Based on the projected traffic volumes, no right turn lane is required at the proposed intersection.

The need for a left turn lane at the proposed intersection was also reviewed. **Figure 3** shows the MTO’s Left Turn Warrant Chart for 100 km/h design speed where 40% of the advancing volume will turn left. It is anticipated that traffic leaving the site will generally be left turns, as this is the fastest way to the Highway 401 via Highway 37. The anticipated number of trips generated at peak hours from the development has been plotted on the MTO chart. The chart shows that, in order for a left turn lane to be warranted, over 800 vehicles per hour on Blessington Road would have to pass by the site location. This high amount of opposing traffic is not anticipated to occur at this location; as such, a left turn lane is not proposed at
the intersection. The traffic counts on Blessington Road could not be confirmed at this time due to the lower traffic volumes currently being observed as part of the COVID-19 pandemic. An updated Traffic Study will be provided with current counts for Blessington Road at the time of Site Plan Application.

**Sight Line Analysis**

Based on MTO geometric design standards, the minimum sight line distance for design speeds of 100 km/h is 230 metres. This requirement provides sufficient distance for an approaching vehicle to observe a stationary hazard in the road (such as a vehicle stopped at an intersection waiting to complete a turn) and bring their vehicle to a complete stop prior to the hazard. The available sight lines to the east and west along Blessington Road as determined at the proposed site access meet this minimum requirement of 230m to ensure safe operations for vehicles turning to Blessington Road from the site.
LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN $V_a$ = 35%
$S$ = STORAGE LENGTH
DESIGN SPEED = 100 km/h

TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

Figure EA-25