

2-23-08



Memorandum

To: Glen Millar P.Eng.
Lambton County
Copy: Christopher Balasa, P.Eng.
Henry Huotari, P.Eng.
From: Stephen Brook P.Eng.

Date: 6 February 2008

Project: TW1329

Re: Lambton County Road 79 (Nauvoo Road) - Posted Speed

Delcan Corporation has reviewed the speed limits that are currently posted along Lambton County Road 79 as part of the proposed improvements to Nauvoo Road (C.R. 79) and the interchange with Highway 402. The roadway is currently posted at 90 km/hr from a point north of Watford and through the interchange with Highway 402.

The Transportation Impact Assessment that was completed as part of the Warwick Landfill Expansion Environmental Assessment identified safety concerns resulting from:

- The sight distances available for motorists at the ramp terminals for the interchange with Highway 402, given the profile of Nauvoo Road, and
- The speed differential between an increased number of slower moving trucks accelerating as they turn onto Nauvoo Road and the faster through traffic along Nauvoo Road that with a posted speed of 90 km/hr may at times be travelling at 100 to 110 km/hr.

Through the interchange with Highway 402, Nauvoo Road will fall under the jurisdiction of the Ontario Ministry of Transportation (MTO). Safety is a primary consideration in any roadway design and it is MTO's current practice to utilize design speeds for the roadways that are 20 km/hr higher than the posted speed limit. The use of a design speed that is higher than the posted speed limit is a standard practice which provides an additional factor of safety within the roadway geometry while also accommodating a variety of factors including slower perception reaction times for some drivers and longer stopping distances for truck traffic.

Delcan has confirmed that improving the profile of Nauvoo Road to accommodate a 110 km/hr design speed is not feasible since this would require replacing the entire structure over highway 402. A recent survey of the corridor identified that the curvature of the structure could only accommodate the required sight distances for a design speed of approximately 100 km/hr. With the current approach grades to the structure however, the available sight distance at the existing ramp terminals

(171 metres) must be considered inadequate as this only satisfies the stopping sight distance requirements for a 90 km/hr design speed.

Given the sight distance constraints that exist within the subject section of Nauvoo Road, Delcan would recommend that the County reduce the current posted speed to 80 km/hr between the Village of Watford and Egremont Road. An 80 km/hr posted speed limit through this area would improve the safety of the corridor for motorists and area residents by:

- Setting the posted speed limit that would now be a minimum of 10 km/hr lower than the design speed the existing roadway was constructed to,
- Reducing the differential speed between slower moving (truck) traffic and through traffic along County Road 79 (speed differential is commonly recognized to be a contributing factor in traffic collisions) and
- Ultimately allowing MTO to maintain their normal design standards of providing a design speed that is 20 km/hr greater than the posted speed limit once the proposed grade revisions to the interchange approaches are completed.

The reduced posted speed limit would help to reduce potential conflicts during construction and should ultimately further benefit area residents since a lower traffic speed along Nauvoo Road would also reduce:

- The resulting traffic noise levels along the corridor , and
- Potential dust levels along the corridor which was a concern that was expressed during the completion of the Environmental Assessment.

S. Brook