Josh Richardson, P. Eng
Manager, Design
MTE Consultants Inc.
520 Bingemans Centre Drive
Kitchener, ON N2B 3X9

May 27, 2025

Dear Mr. Richardson:

RE: Witmer Road Reconstruction Design Report, Township of Wilmot

We were retained by the Citizens for Safe Ground Water (CSGW) to provide professional engineering services in relation to the Zone Change Application 11/19, Jackson Harvest Farms Ltd./IBI Group, 1894-1922 Witmer Road, and related matters. Subsequently, we were retained by CSGW to review and provide comments on the Witmer Road Reconstruction Design.

Based on correspondence with CSGW and the Township we understand that MTE was retained to prepare the design, hold a public meeting/open house to present the roadway design and to receive comments. Through the Township, CSGW has requested the Witmer Road design drawings. To date, the Witmer Road Reconstruction Design Report prepared by your office (the 'MTE report') represents the disclosure to this request.

I have not been retained to attend the public meeting occurring today; however, on behalf of the CSGW, please accept the following as formal comments to the engineer of record and the Township related to the MTE report and the Witmer Road reconstruction design.

Background

TNS was retained in 2020 to provide professional engineering advice to CSGW in relation to road safety concerns they expressed related to potential transportation impacts of the Application. TNS prepared a letter report to the CSGW dated March 10, 2020 (the '2020 TNS report') and a safety review report dated May 4, 2021 (the '2021 TNS report'). My understanding is these letters were shared with the Region of Waterloo and the Township. A number of the transportation safety issues outlined in these reports were conveyed to Township Council in March of 2022, to the Ontario Land Tribunal (OLT-22-003789) and to the Township's external solicitor on March 6, 2024.

Project Design Life

While Witmer Road is being reconstructed as part of an agreement with a specific pit application and land use, the design life of the project should be 15 to 20 years, over which time further

development is planned in the area and will increase thru traffic and truck traffic on Witmer Road. The pit owners retained Paradigm Transportation Solutions Limited to prepare a transportation impact assessment (the 'Paradigm TIS') associated with the approved aggregate pit. The Paradigm TIS report outlined other planned developments in the area that will involve additional traffic including truck traffic on Witmer Road. A design year of 15 to 20 years should be considered in the current design.

Roadway Classification

On page 1 of the MTE report it is acknowledged that Witmer Road is currently classified as a local road. The MTE report does not provide an assessment of the future operations with the planned land uses or in the design year. It is industry good practice to design a roadway to known and foreseeable future conditions.

As per the Township of Wilmot Infrastructure Standards and Specifications 2022[1] (the 'Township's Standards'), Section 5: Roadways:

- The geometric design of Township roads shall, as a minimum, conform to standards set out in the latest edition of the Geometric Design Guide for Canadian Roads and Streets (the 'TAC Geometric Design Guide') issued by the Transportation Association of Canada (TAC), and the Ontario Provincial Standards (OPS).
- Collector roads means Class 3 and Class 4 highways as determined under the Table to Section 1 of the Minimum Maintenance Standards for Municipal Highways, O. Reg. 239/02 (MMS). Collector roads provide for both traffic service and land access.

Based on the Township's Standards, the roadway classification and function of Witmer Road will change with the additional truck traffic associated with the planned resource extraction uses and will function as a rural collector roadway.

I understand through discussions with the Township that they are currently updating the above standards in relation to roadway classification methods; however, there a no conclusion as to their content and new standards are not expected until next year.

Local standards and practices should be applied in the current roadway design. In the absence of the soon to be revised Township road classification standards, the TAC Geometric Design Guide should be applied to inform the design decision related to roadway classification. It is known and foreseeable that Witmer Road connects to an arterial Region road, will likely exceed the volume thresholds of a local rural road over its design life and that future traffic volumes will not be predominantly local passenger vehicles. The Paradigm TIS volume predictions indicate that with the planned pit development, daily truck traffic will almost double the traffic volmue on Witmer Road and truck percentages will be between 40-50% of the daily traffic. The above conditions do not reflect a local roadway classification.

[1] Township of Wilmot Infrastructure Standards and Specifications, Approved by Township of Wilmot Council on April 25, 2022.

Design Speed

On page 1 of the MTE report it is indicated:

> "*In consultation with Wilmot Township, it was agreed that this project will utilize a posted and design speed of 70km/h with efforts intended to be made to incorporate design aids to try and encourage drivers to adhere to the lower posted limit.*"

It is industry good practice to assume a design speed 10 to 20 km/h over the posted limit, and to post a limit that is based on speed studies, 85th percentile speed, or engineering tools such as the TAC Guidelines for Establishing Posted Speed Limits. It cannot be determined from the MTE report, what standards, guidelines or policies were applied in determining the 70 km/h posted/design speed.

The MTE report suggests that the following would be effective at traffic calming and compliance with the proposed 70 km/h speed limit:

- Posting of a 70 km/h speed limit;
- Installation of white edge lines; and
- Installation of shoulder rumble strips.

Based on my 30 years of transportation and road safety experience, I am unaware of research or industry good practice that suggest that the above traffic control devices or roadside design features will affect road user speed choice. The TAC Geometric Design Guide and most industry studies acknowledge speed limit changes are unlikely to be effective, especially on higher speed roads through a relatively unconstrained rural environment. The placement of edge lines and rumble strips along the edge of a rural travel lane represent a safety improvement to reduce road departure potential but have no demonstrated traffic calming effect on operating speeds.

Approach Sight Distance at the Queen Street and Witmer Road Intersection

At the Queen Street and Witmer Road intersection, a minimum approach sight distance is not available between eastbound and northbound traffic, should a side street motorist fail to yield the right of way. It is recommended that an appropriate approach sight distance consistent with TAC guidance be provided in the design to improve safety for all road users. The assessment and rationale for this remedial action is outlined in the TNS 2021 report.

Roadside Safety and Shoulder Widths

The MTE report outlines one location to provide industry-accepted guide rail to address roadside slopes. The location currently has cedar posts and appears to have been installed for delineation, as opposed to roadside protection (i.e., No cable is present on the cable guide rail). It does not appear that the MTE report includes a fulsome review of roadside safety consistent with the TAC Geometric Design Guide.

The current roadway platform and roadside design (i.e., clear zones) of Witmer Road would be considered substandard based on the Township's Standards (i.e. the TAC Geometric Design Guide). and industry good practice in Ontario. The MTE report recommends that a grass rounding and 3:1 or 2:1 fore slopes to be maintained beyond a 1.0 m paved shoulder. Slopes of 3:1 within the required clear zone of a roadway should be designed with the assumption that an errant vehicle may travel to the bottom of the slope. The 3:1 slope should be free of trees and other fixed objects. A 2:1 slope with any substantial depth is considered a critical slope which has the potential to cause vehicle roll-overs.

Roadside safety should be considered on all rural roads with posted/design speeds of 60 to 80 km/h and above. Wider shoulders consistent with a rural collector road standard and/or guide rail installation would increase the roadside safety of the design.

If you have any questions related to the above, please do not hesitate to contact me.

Regards,

[redacted]

Russell Brownlee, M.A. Sc., FITE, RSP1, P. Eng.
Transportation Safety Engineer