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To

Matt Nelson,
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GM BluePlan Engineering Limited

From

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Bumstead Pit Outstanding Concerns Response

The following provides responses to the outstanding concerns raised by LEA Consulting Ltd in regards to the September 2014 Bumstead Pit Scoped Traffic Impact Study and the supporting September 2015 Bumstead Pit Scoped Traffic Impact Study Addendum Letter.

The following are the outstanding concerns maintained by LEA Consulting Ltd:

- ▶ **Employee and Customer Trips** - Paradigm maintains that the previous trip generation of 12 trips (6 truck trips in and 6 truck trips out) per hour developed by Gamsby and Mannerow in their May 2013 report represents the worst-case trip generation. Employee trips and small scale customer trips are considered to occur outside of the peak hours. LEA had requested additional backup for this assumption but none was provided.
- ▶ **Pedestrian Safety** - There are additional community concerns regarding pedestrian movement on Sideroad 60 at the South-East and North-East bends when two aggregate trucks pass their location in opposing direction.
- ▶ **Highway 10 and Sideroad 60** - No swept path analysis was carried out at the Highway 10 and Sideroad 60 intersection. As such it remains unknown if semi-trailer aggregate trucks or WB-19 trucks can safely turn in the intersection.
- ▶ **Pavement Design** - The forecasted AADT volumes under future 2026 conditions suggest a truck percentage on the upper limit of the 10% truck percentage for Table 3.4 of the MTO Pavement Design and Rehabilitation Manual. Furthermore, while the Bumstead Pit application has consistently assumed the future usage of 22-tonne triaxle aggregate truck, there is no way to ensure that higher class trucks will no use the road. As proposed by SPL, pavement design should therefore be undertaken using the AASHTO design method, to account for the different truck loads

expected on Sideroad 60 and the roads expected service life.

Employee and Customer Trips

Based on similar pit operations, staffing level is typically less than five (5) people. This would include one to two people in the scale house and up to three people in the processing and loading areas. In all cases, it is reasonable to expect less than ten (10) on-site staff. Typically staff will arrive / depart the pit before or after the morning and afternoon peak hours and is not expected to add additional trips to the peak hour estimates. If some staff were to arrive / depart during the peak hours, then the additional trips is not expected to change the overall intersection operations.

Further, in this area and based on the nature of the proposal, the amount of “walk-up”/third party trips is expected to be very limited or rare. Further, the scenarios considered are at “peak” operating conditions, during which additional third party trucks, or walk-up customers, would not be able to be processed. The number of staff and/or walk-up customers is therefore, not considered to influence the peak hour traffic flows used during this assessment.

Pedestrian Safety

In the September 2015 Addendum Letter, a swept path analysis was undertaken at the two horizontal curves of Sideroad 60. It was determined that a road widening of 0.65 to 2.0 metres is required to provide the space required to safely accommodate the arrival of two gravel trucks at the same time. This improvement to Sideroad 60 will be included as part of the haul route agreement.

To safely accommodate pedestrians along the two horizontal curves of Sideroad 60, gravel shoulders should be constructed along with the road widening. The gravel shoulder should be constructed in accordance to municipal and provincial design standards and would provide a safe walking space for pedestrians, cyclists, and other users in place of the paved portion of the road.

‘Pedestrian Ahead’ warning signs could also be installed on Sideroad 60 before the two horizontal curves. The ‘Pedestrian Ahead’ warning signs (Wc-7 from OTM Book 6) provides advanced warning to motorists that pedestrians may be in the same area. It is noted that the ‘Pedestrians Ahead’ sign would normally be used in rural areas where, from visual observation, the presence of pedestrians in rather uninhabited areas would come as a surprise to

motorists. The 'Pedestrian Ahead' from OTM Book 6 is illustrated in **Figure 1** below.



Wc-7	75 cm x 75 cm
Font	N/A
Colour	Legend & Border – Black Background – Yellow Reflective
Minimum Sheeting	Type I

Figure 1: Pedestrian Ahead (Wc-7) Warning Sign

The 'Pedestrian Ahead' warning sign could also be installed on Sideroad 60 leading to the Grey County CP Rail Trail. 'Trail Crossing' tabs can be installed below the 'Pedestrian Ahead' warning sign to let motorists know a recreational trail is ahead. An example is illustrated in **Figure 2** below.



Figure 2: Example of Trail Crossing Warning Sign

All warning signs should be installed in accordance with municipal and provincial standards.

As part of the haul route agreement, operator training should be included so that drivers of the gravel trucks using the Bumstead Pit can be educated on the protocol regarding the presence of

pedestrians, cyclists, and horse traffic and be trained to in the required approach to safely overtake the recreational users of the road.

Highway 10 and Sideroad 60

The Ministry of Transportation, Ontario (MTO) has indicated in a letter dated January 27, 2016 that they have no concerns with the operational issues at the intersection of Highway 10 and Sideroad 60. The MTO will continue to monitor the operations at this intersection.

Pavement Design

The pavement design concern will be addressed by GM BluePlan Engineering Limited.

We trust that the outstanding concerns are addressed and accepted.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

A handwritten signature in black ink, appearing to read 'Stew Elkins', with a long horizontal line extending to the right.

Stew Elkins
B.Sc., MITE
Vice-President