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21 November 2017
Project: 170014

Jared Dykstra
Mason Homes Limited
1-70 Innovator Avenue
Stouffville, ON L4A 0Y2

Dear Mr. Dyskstra:

**RE: RESPONSE TO AGENCY COMMENTS RELATED TO PORT HOPE RESIDENTIAL
SUBDIVISIONS TRANSPORTATION IMPACT STUDY (PARADIGM, JULY 2017)**

Paradigm Transportation Solutions Limited (Paradigm) has prepared this letter to provide responses to the transportation study-related comments contained in a 27 October 2017 Memorandum prepared by Municipality of Port Hope staff (Brunilda Tena, Development Services Technician to Theodhora Merepeza, Planning Manager), and a 27 October 2017 Memorandum prepared by CIMA, the Municipality's technical review engineering consultant (Dan Campbell and Will McCrae to Jeanette Davidson, Manager of Engineering).

27 October 2017 Memorandum, Municipality of Port Hope Staff (B. Tena)

Item 7 of this memorandum refers to the Tranplan Associates study, "*Lakeshore Road/Strachan Street Intersection Review, Municipality of Port Hope, Intersection Operational Review, Prepared for The Municipality of Port Hope on behalf of Mason Homes Ltd & AON Inc., September, 2014*". Specifically, Municipal staff focus on "*Section 6 Next Steps*" of that report where the consultant identified a future need to conduct five-year updates of the traffic studies for the subject development, and to review how the right-of-way between conflicting traffic movements at the Lakeshore Road/Strachan Street intersection would be controlled in the future. As indicated in the title of the Tranplan study, the main purpose was to examine the operational issues being experienced at the Lakeshore Road/Strachan Street intersection at the time of the study. Municipal staff conclude that these "*Next Steps*" have not been included in the July 2017 Paradigm Transportation Impact Study.

Regarding the five-year updates, the July 2017 Paradigm study represents an update of the Tranplan January 2010 study, "*Penryn Village Residential Subdivision, Update Traffic Study*". And the current study will be followed by another update five or so years from now in accordance with the review and approval process established by the OMB in the early 2000's. Since this is an established process, which is described in "*Section 1.1 Background*" of the current transportation study, we did not see it as necessary to include a recommendation for the next update study.

Regarding the Lakeshore Road/Strachan Street intersection, we understand that the impetus for the September 2014 Tranplan study was a deficiency in the sight line between northbound traffic on Strachan Street (specifically right-turning traffic under stop control) and eastbound traffic on

Lakeshore Road (free flow at the time) approaching the intersection. This deficiency is created by a combination of the horizontal and vertical alignment of Lakeshore Road to the west of Strachan Street, and consequently, the available sight distance does not meet the Transportation Association of Canada or Ministry of Transportation of Ontario guidelines for the observed 60 km/h operating speed on Lakeshore Road. Tranplan recommended changing the traffic control at the intersection from stop control only on the Strachan Street northbound approach (as it was up to 2014) to all-way stop control (AWSC), and this recommendation was subsequently accepted by the Municipality.

Tranplan's "initial thoughts" and "other considerations" related to the future traffic control at this intersection are summarized below along with our responses as informed by the findings of the current transportation study:

1. **Tranplan:** Continued use of the AWSC for the next five year planning period and/or the completion of the next phase of development north and south of the Lakeshore Road.

Paradigm: *Agree. The existing AWSC remains the best traffic control option considering both the current traffic volumes and the 2022 forecasts contained in the current study. The addition of traffic to this intersection from proposed Phase 4/5 lands is minimal, and the potential addition of traffic from the limited number of blocks considered north of Lakeshore Road is relatively low. Overall, the intersection is shown to operate well within capacity with the additional development traffic and with AWSC. Specifically, and for the highest forecasts, the busiest approach uses less than 20% of the capacity in the AM peak hour and up to 40% of the capacity in the PM peak hour.*

2. **Tranplan:** Consideration of other options for intersection control including:

- Installation of traffic signals
- Conversion of AWSC to two-way stop control (TWSC) with Stop changed to the Lakeshore Road approaches
- Installation of a roundabout

Paradigm:

- *As pointed out in the Tranplan study, installation of traffic signals will not address the sight line issue due to the potential for northbound right turns to be made "on red". Addressing this by adding a no-right-on-red signed turn restriction would be counter to driver expectations in this situation (relatively low volume of traffic and pedestrian crossings), and could be expected to have low compliance. Further, the current and projected traffic volumes are not near the level required to justify signalization*
- *Removing the stop signs on the Strachan Street approaches, and keeping the stop signs on the Lakeshore Road approaches, would help address the sight line deficiency by having eastbound traffic remain under stop control. However, this would also be counter to driver expectations since the higher traffic volumes now and in the 2022 forecasts are on Lakeshore Road, not Strachan Street, and TWSC is typically applied to what are deemed to be the minor street approaches. By comparison, AWSC is clearly better understood and safer than TWSC in this situation*



- *A roundabout intersection design would address the sight line deficiency and provides very good right-of-way control between conflicting movements, but like signalization, is not justified by the relatively low current and projected traffic volumes. As well, a roundabout could have property implications and would have cost implications, both of which would not be factors in continuing with the current AWSC*

3. **Tranplan:** Regular assessment of intersection operations to determine if signal warrants are met and a review of findings of the intersection assessment with neighbours to receive community input.

Paradigm: *Agree. In accordance with the five-year transportation study updates, part of the current study included the operational analysis of this intersection (very good level of service and well within capacity with AWSC), and the planning process requires public consultation and the opportunity for community input regarding this intersection as well as the entire study area. The same requirements will apply in the next five-year transportation study update in support of future development applications.*

4. **Tranplan:** Reduction of the speed limit on Lakeshore Road to 40 kph. This would lower the required TSD to 100 – 110 m which is available.

Paradigm: *Disagree. TSD refers to “turning sight distance”, and specifically for the subject intersection, the required distance that a northbound motorist stopped on the Strachan Street approach should be able to see to the west in order to more safely make a right turn onto Lakeshore Road given the prevailing speed of eastbound traffic on Lakeshore Road. Reducing the posted maximum speed limit from the current 50 km/h to 40 km/h would be an attempt to influence motorists to travel at slower speeds, which would theoretically make the sight line deficiency less of a hazard, or not a hazard at all, according to design guidelines for lower speed operations. Typically, lowering the speed limit to address a design deficiency without implementing any additional measures to slow vehicles down is not an acceptable solution. This is especially relevant in this situation since Tranplan had determined through field studies that the 85% percentile operating speed for eastbound Lakeshore Road traffic was 60 km/h (i.e. 85% of the traffic was travelling at or less than 60 km/h and 15% was travelling at a speed greater than 60 km/h).*

Tranplan closed the discussion of “Next Steps” by noting that the future transportation study updates would have a broader scope than their 2014 operational review of the Lakeshore Road/Strachan Street, would include the detailed plans for the next phases of development, and would contain more accurate traffic forecasts as the basis for assessing the traffic control requirements of this intersection. The current 2017 transportation impact study provides those “more accurate traffic forecasts” for the development conditions possible over the next 5 years, and the operation of the Lakeshore Road/Strachan Street intersection has been thoroughly analyzed. The conclusions from this assessment are that all-way stop control continues to be the recommended form of control since it addresses the sight line deficiency and safety concern, provides more than adequate capacity, the traffic volume forecasts would not justify signalization, signalization does not address the sight line deficiency, and roundabout control is not justified and may not be feasible due to potential property requirements as well as cost considerations. And finally, subsequent studies undertaken for the next five-year review period will re-assess the traffic operations and requirements at this intersection.



27 October 2017 Memorandum, CIMA (D. Campbell and W. McCrae)

CIMA staff commented that Victoria Street/Strachan Street should be designed to prevent an eastbound through movement into the neighbouring residential subdivision. They cite previous conditions/studies that led to an apparent understanding that the traffic generated by the proposed development would be directed to the arterial roadways to avoid any infiltration into existing neighbourhoods.

As currently shown in the 2017 transportation study, and without a restriction on eastbound (or east-west) movements at Victoria Street/Strachan Street, there is a potential increase of up to 30 vehicles eastbound on Strachan Street (east of Victoria Street) during peak hour periods, and a similar increase in westbound traffic on this section of Strachan Street. In total, the future daily traffic on Strachan Street east of Victoria Street could be up to approximately 800 vehicles per day under these conditions, which is within the typical guideline of 1,000 vehicles per day for roads with a Local functional classification. Notwithstanding, this would be large increase in traffic activity compared to existing conditions where the daily traffic volume would be approximately 200 to 250 vehicles.

From a design perspective, it may not be possible to physically prevent eastbound, and presumably westbound, traffic crossing the Victoria Street/Strachan Street intersection without introducing an offset between the new west leg and the existing east leg. And introducing an offset could add additional traffic operations complexities, safety concerns, and emergency access issues as well as having property implications on the west side of Victoria Street. A practical solution would be to post “No Straight Through” regulatory signs (sign code Rb-10 in Book 5 of the Ontario Traffic Manual) for the eastbound through movement (cited as a concern by CIMA), and possibly for the westbound through movement as well. This would direct new development traffic to and from the north along Victoria Street, which is a collector road, to the arterial roads (Toronto Road, Lakeshore Road, and Ridout Street). As well, it would also direct new development traffic to and from the south via Victoria Street where it would logically and reasonably use the collector road system (Victoria Street, Trafalgar Street, and Dorset Street).

CIMA indicated that the transportation study should consider the restriction of new development traffic from using Strachan Street in the analysis of future traffic operations. While the traffic forecasts and analyses could be revised as suggested, it can be concluded that since the volume of new traffic assigned to/from existing Strachan Street was very low (on average, approximately one vehicle every two minutes eastbound and westbound during peak hours), there will be no significant effect on the analysis results presented to date. And similarly, the conclusions and recommendations of the transportation study with respect to traffic impacts on the study area road network would be unchanged.



If you have any questions or comments, please contact the undersigned.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

A handwritten signature in brown ink that reads "Garry Pappin". The signature is written in a cursive style with a horizontal line at the end.

Garry Pappin
BES, CET, LEL
Senior Transportation Consultant

