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Gwen Zhang
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Dear Ms. Zhang:

RESPONSE LETTER TO ADDRESS CITY COMMENTS FOR TRANSPORTATION IMPACT STUDY (388 ARKELL ROAD, GUELPH, ONTARIO)

IBI Group was retained by the Upper Grand District School Board (UGDSB) to complete a Transportation Impact Study (TIS) for a proposed high school at 388 Arkell Road, in Guelph, Ontario, which was submitted on April 19, 2021.

The subject lands are located at the northwest corner of Arkell Road and Victoria Road South. The TIS used a capacity of 1000 students, with two driveways (one restricted right-in / right-out – left-in, and one full movement) fronting Arkell Road, and one driveway (school bus outbound only) fronting Victoria Road South. All three driveways are proposed to be unsignalized, with stop controlled operations on the minor approach (i.e., site driveway leg).

This letter is written to respond to City of Guelph consolidated review comments from the Planning, Engineering, Municipal Services, and Transportation Services departments, received on September 24, 2021. This letter documents the revisions to the TIS Report to address these comments.

Added Sections

- **Transportation Demand Management Review – Section #15:** IBI Group has reviewed transportation demand management strategies in support of the City's TDM goals. This includes infrastructure elements in support of bicycle parking, transit services, walking, travel planning, education, and incentives.
- **School Bus Queuing Review – Section #8.1:** School bus loading provisions are now documented in this section. A school bus pick-up/drop-off area with six marked school bus loading spaces and drive aisle capacity for four additional school buses queued behind while the loading spaces are being utilized.
 - It is expected, based on school size and student ridership, that a supply of 10 school buses is sufficient.
- **Gap Analysis Review – Section #8.2.2:** IBI Group performed a gap analysis review at the three proposed site accesses during the weekday AM and weekday PM peak hours to observe in-field traffic turning capacity under existing conditions.

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- Based on the observed capacity at the three access locations, the observed turning capacity won't be exceeded by the proposed development's forecasted trips.
- **Right-Turn Lane Warrant review – Section #12.1.2:** IBI Group performed a right turn lane warrant analysis at the Arkell Road and Victoria Road intersection using the contents of the Transportation Associate of Canada (TAC) Geometric Design Guide for Canadian Roadways (GDGCR).
 - It should be noted that the right-turn criteria are triggered under both existing and 2033 background traffic conditions, therefore the need to implement any auxiliary right-turn lanes within the study area is not triggered as a result of site-generated travel demands.
- **Pedestrian Crossing on Arkell Road – Section #15.3.1:** IBI Group has inserted a proposed intersection pedestrian signal (IPS) on Arkell Road, approximately 85 meters west of the Arkell Road / Victoria Road intersection. This placement is proposed to align with the walking trail that fronts the south side of Arkell Road
 - It should be noted that, since the spacing between the recommended IPS and traffic signal at the Arkell Road & Victoria Road intersection does not meet the 200 metres spacing requirement provided in the *Ontario Traffic Manual, Book 15 – Pedestrian Crossing Treatments* (June 2016), it is recommended to program the two signals as a cluster (i.e., two signals controlled by one controller).
- **Parking Demand and Supply Review – Section #16.3:** IBI Group has reviewed the applicable City of Guelph Zoning By-law (ZBL) standards to compare the parking supply requirements of the proposed parking.
 - Based on the ZBL, the proposed development is required to supply 246 vehicular parking spaces (243 regular parking spaces and 3 accessible parking spaces) based on the ZBL. As the proposed development proposes to supply 257 parking spaces (249 regular parking spaces and 8 accessible parking spaces), a ZBL surplus of 11 parking spaces is anticipated.
 - The proposed development will also supply e-vehicle parking spaces and bicycle spaces. Details will be included in the site plan control applications.
 - Therefore, the proposed development is expected to provide sufficient supply to accommodate the anticipated parking demand from the proposed development.
- **Growth Rate – Section #4.2:** As per the request from City staff, a growth rate of 2.0% per year was used. Based on a review of background development TIS report growth rates (Exhibit 4-1), it was noted that most reports used a growth rate of less than 2.0% per year.
 - For this report, the 2.0% annual growth rate was only applied to through movements on arterial roads with the exception of arterial-to-arterial intersections, where it was applied to all movements.
 - This growth rate was applied in addition to traffic generation from nine new planned background developments occurring in the study area, as per Section 4.3, to comprehensively account for future background traffic activities in the study area.

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Traffic Analysis

- IBI Group re-analyzed trip generation and trip distribution with the assumption that pick-up/drop-off trips are 95% pass-by (previously assessed as 100%).
- The following intersections and scenarios were added to the Synchro traffic model to assess existing and future intersection operations during the weekday AM and weekday PM peak hours. analysis:
 - 1) Arkell Road / Summerfield Drive (three legged) – stop controlled;
 - 2) Arkell Road / Zeca Drive / Amos Drive (four legged) – stop controlled;
 - 3) Arkell Road / 361 Arkell Road Townhouse Residential Complex Entrance (three legged) – stop controlled; and
 - 4) Arkell Road / Commercial (Hasty Market) Entrance (three legged) – stop controlled.
- The turning movement count (TMC) data for the additional intersections were collected in the field on September 9, 2021 (refer to **Section 2.5**), as historical data was not available for these driveways and intersections. The timing was undertaken to coincide with the school year in session.
 - To account for its effects, TMC data for the Victoria Road / Arkell Road intersection was also collected, and compared to historical data to calculate an adjustment factor (refer to **Exhibit 2-6**) in the east-west through directions for the weekday AM and PM peak hours. This factor was applied to the above four intersections to raise observed traffic volumes to “pre-COVID-19” conditions. This approach is generally considered to be regarded as conservative, as future “normal” traffic levels are still to be determined with changes in workplace attendance frequency.
- The signal timing lengths in the Synchro model that were previously cited as too short have been lengthened. Specifically, to reassess existing and future intersection operations during the weekday AM and weekday PM peak hours of all signalized intersections, a longer cycle length between 90s to 100s was used as per common City of Guelph practice.
- The outputs from Synchro now include indicators of intersection spillback using the symbols “~” and “#”.
 - These changes affect Sections #3 (Existing Conditions), Sections #5, 6, 7 (2023, 2028, 2033 Future Background Conditions), and Sections #9, 10, 11 (2023, 2028, 2033 Future Total Conditions).