



April 14, 2022  
File: GE-00240

VIA EMAIL

Municipality of Middlesex Centre  
10227 Ilderton Road  
Ilderton ON N0M 2A0

Attention: Rob Cascaden, P. Eng.  
Director, Public Works and Engineering

**Reference: Stormwater Management for Proposed Development  
MN 22447 Komoka Road  
Komoka, Ontario**

LDS Consultants Inc. is in receipt of the peer review comments which were prepared by IBI Group (April 4, 2021), following their review of LDS' written correspondence dated February 11, 2022 and the Conceptual Stormwater Management Strategy which was prepared in support of the proposed residential development which is planned for MN 22447 Komoka Road, in Komoka, Ontario.

At this time, the owner is seeking to obtain planning approvals to be able to proceed with next steps in preparing detailed development plans and project drawings, which can be circulated back to the municipality for Site Plan approval.

It is important to note that the aforementioned documents were prepared to address a request from Middlesex Centre Council (from their meeting held on January 12, 2022), requesting additional information to demonstrate that the proposed development could proceed within the subject lands, with a stormwater management strategy that would provide sufficient water quantity controls to attenuate post-development run-off levels to pre-development levels for all storm events up to and including a 250-year event. The Conceptual Stormwater Management Strategy utilizes opportunities to control and infiltrate clean stormwater runoff, without significantly impacting the capacity of the onsite pond. This approach has the added benefit of being able to work in conjunction with possible future plans by the municipality to utilize the existing pond, as part of the community stormwater management strategy.

To facilitate review of our response to IBI's comments, we have provided the following excerpts from IBI's letter, followed by our response.

#### **Response to IBI Review Comments**

1. The modelling for the SWM has taken into consideration only the drainage area for the proposed development (2.6ha) into the receiving pond. This is acceptable for this Conceptual SWM report in order to determine the effects from only the new development itself, however at the detailed design stage all external areas should be considered when determining effects of water level changes within the existing pond including the pond itself.

LDS Response: We are in agreement with this comment. At this time, the property owner (Mr. Powell) is seeking to obtain planning approvals, and the scope of work which is appropriate for a planning application is generally not as detailed as an engineering design submission.

2. As noted in the municipality's previous comments it would be beneficial to include a summary of the stormwater approach used for the adjacent Bella Lago site to the south and the commercial site to the west and how those sites were designed to utilize the existing pond. These sites should be labelled on a plan. The report should review how the current function varies from the design function. This might help support the projected impacts from the proposed development.

LDS Response: Undertaking an assessment of the performance of the SWM functionality for the adjacent sites is outside of the scope which is required in determining if the proposed development can be serviced from a stormwater management perspective.

3. The report notes that the external drainage will be re-routed through the site via open channels or closed pipes. It is suggested that the SWM brief include how the existing drainage easements on the site will be dealt with when the site is developed. A comment will be required whether an amendment will be required to the existing ECA's and if a new ECA will be required for the SWM measures proposed for the development area.

LDS Response: This will depend on the ultimate design volumes, and will be worked out through detailed design. At this time, it is appropriate to acknowledge that there are options on routing existing external drainage through the site.

4. IDF parameters are to be taken from "SWM Policy Manual, Municipality of Middlesex Centre" (June 2011) (Section 4.4.2.5, Table 4.2), rather than from the City of London requirements. A 24 hour storm event will be required to be modelled as well.

LDS Response: Acknowledged. This approach will be used in the detailed design process.

5. Imperviousness factors require confirmation. Table 9 shows a TIMP of 43% and Section 3.5 notes 50% imperviousness.

LDS Response: Acknowledged. The detailed design submission will be based on the finalized development concept and site plan. At this time, the percent impervious surface is an estimate based on the current concept plans. For these preliminary calculations, the value in Table 9 (43%) should be taken as correct.

6. The report notes that there is only a 1mm increase in the pond water level for the development, however it is unclear how this was determined. The last sentence in Section 3.5 seems to indicate that all runoff ultimately ends up in the pond due to the hydraulic connection to the surrounding soils. Has this been accounted for in the calculation? Please clarify.

LDS Response: The volume of stormwater runoff (and infiltration) captured onsite is averaged over the surface area of the water feature, resulting in the 1 mm rise in water level.

7. Further to the point above, please clarify the intent of the hydrologic modelling. The report notes that SWM will be provided by infiltration galleries/LID's and that post-development flows are to be restricted to pre-development levels. The modelling does not seem to account for infiltration. Is the intent for excess volume to be retained, restricted and then released into the existing pond or is a portion/all the runoff to be infiltrated? What values have been used to determine the increase in the pond level, noting that there is a comment in the letter that the current pond directly connects with the shallow groundwater.

Regarding the storage requirements shown in Table 10, the modelling seems to assume that flows are restricted to each storm event pre-development level. Please confirm. If this is the case, it may be difficult to achieve this variation of restrictions with a smaller drainage area such as this. It may be necessary to over-restrict the larger storm events to the 2-year level in order to obtain a feasible design. If infiltration is used for some discharge, this should also be reflected in the stage-storage modelling. Please clarify. A conceptual design may be required to better determine this.

LDS Response: The specific details for how stormwater run-off is contained and discharged/released is an undertaking during detailed design. The sand and gravel soils in the area are conducive to infiltration. The form which is utilized for infiltrating stormwater runoff will be selected based on site layout, site grading and other factors, which are not currently available in sufficient detail.

8. LID's/Infiltration Features: We note that a Geotechnical Investigation report was prepared in March 2021 providing theoretical infiltration rates. It is suggested that prior to the submission of the SWM report with the detailed site plan, an update be prepared to confirm infiltration rates and groundwater elevations in the areas of any proposed Infiltration Galleries and LID's. The sizing of any infiltration gallery and LID's should be confirmed/designed with an appropriate safety factor based upon measured infiltration rates.

LDS Response: LDS agrees with this statement; however, it is important to note that infiltration rates will be a function of the soils which are present when grading work is complete, and carrying out field measurements should not be done prematurely.

9. Directions are to be made consistent throughout the report. In one section the pond is noted to be east of the development and in another section it is noted to be south of the development. A plan labelling the pond outlet location would be helpful as well as showing the location of the previously constructed/removed "dam". It is suggested that the pond outlet be relocated to the south corner away from the existing home.

LDS Response: Acknowledged. However, it is noted that the location of the various site features was not specifically delineated for an external peer reviewer – at the time the report was prepared, it was anticipated that engineering staff at the municipality would have adequate familiarity of the site to understand the referenced locations. Further, it is curious that IBI takes the liberty to make a statement suggesting the relocation an established outlet, without any technical support or justification.

10. Further conceptual information is requested on Figure 3 (Post Development Conditions). It would be helpful to understand:
- How/where SWM controls are to be provided for the site (location of infiltration galleries/LID's etc.);
  - How the SWM for the overall external areas currently function and how they will function post development; and
  - How/where external drainage areas will be routed,

LDS Response: The items noted above would follow during the detailed design stage. At the planning stage, the requirement is to confirm that there are strategies available to management the change in stormwater runoff, which would be anticipated as a result of the proposed development.

11. UTRCA review and approvals will ultimately be required for the stormwater management.

LDS Response: Acknowledged. LDS is aware of the regulatory approvals from the Upper Thames River Conservation Authority (UTRCA) and from the Ministry of Environment, Conservation and Parks (MECP) for the ultimate stormwater management plan.

#### **Additional Comments**

In summary, the peer review comments which have been provided generally identify items which are part of the detailed design and engineering process, which has not yet been undertaken for the site, since the property owner is currently still seeking planning approvals. LDS acknowledges those items and elements of the stormwater management strategy which will be required as part of a complete engineering submission. The comments do not identify any deficiencies which would apply to a planning-level application.

Mr. Powell has expended considerable time and resources to ensure that any future development of his lands can be done in a responsible and sound manner, and has gone well beyond what is typically required for obtaining planning approvals. Mr. Powell has demonstrated his ongoing commitment to work collaboratively with the municipality to bring forward a development plan which will ultimately benefit the municipality and the community.

After planning approvals are granted, there are prescribed processes in place to review and approve the ultimate Site Plan, and to ensure that adequate engineering design and controls are implemented in any future development.

We trust the above is satisfactory for your present requirements.

Respectfully,

**LDS CONSULTANTS INC.**



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