



November 26, 2021

Project No. ALL-00801912-C0

Victoria Park Community Homes Inc, Hamilton East Kiwanis Non-Profit Homes Inc and  
Caledon Community Collaborative LP (c/o Ellisdon Corp)  
155 Queen Street North  
Hamilton, ON  
L8R 2V6

Project: 60 Caledon Ave, Hamilton  
Subject: 2<sup>nd</sup> ZBA Engineering Submission

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Dear Mr. Gong:

We are very pleased to provide the enclosed documents as part of the 2<sup>nd</sup> engineering submission for the Zoning By-law Amendment (ZBA) for the proposed development located at 60 Caledon Ave in the City of Hamilton. Please find enclosed the following EXP documents which have been recently updated to address recent comments received from municipal and/or agency staff:

- Functional Servicing Report (revised November 25, 2021); and,
- Stormwater Management Report (revised November 25, 2021).

To outline how each comment was addressed, we have provided the original site civil related comments received from municipal/agency staff in *italics* below followed by the EXP responses in **bold** type.

**City of Hamilton (Letter dated August 13, 2021):**

*Development Services Comments:*

1. *The total sanitary flow calculated on Appendix C of the FSR for the proposed development has been calculated based on design flow used in the City's Development Guidelines Chapter E.1.4. However, building C and D population shall be calculated based on using 3.5 people per unit. The City's Development Guidelines Chapter E.1.4 states as assigned density of 30upha (110ppha) for townhouses. Therefore, roughly 3.5 people per unit should be used to calculate the population of the townhouses.*

*We would like to advise that the City of Hamilton does not have specific criteria for number of persons for different type of units for vertical multi-residential development. However, we recommend that the total population for the proposed development to be estimated based on the assumption of 1.7ppu for 1 bedroom and 2.4 persons per unit for 2-bedroom units based on our experiences with the*

*previous similar developments. The assumption of 3.1ppu for 3-bedroom units is acceptable to our office.*

**For buildings C and D population calculations, the recommended assumptions of 1.7 ppu for 1 bedroom, 2.4 ppu for 2-bedroom, 3.1ppu for 3-bedroom were used. Please refer to the updated FSR report for the equivalent population calculations.**

- 2. We would like to advise that Section 5, Sanitary Servicing of the Functional Servicing Report prepared by EXP submitted in support of the re-zoning application does not demonstrate that the downstream city system has adequate capacity to support the proposed intensification. The proponent will be required to submit a sanitary network analysis up to junction with 675mm diameter sanitary trunk sewer at Mohawk Road to demonstrate that there is adequate capacity available within the municipal system to accommodate the development proposed.*

**The Downstream Sanitary Capacity Analysis was completed by EXP staff and has been included in the Appendix D of the enclosed FSR.**

- 3. It appears that the emergency overland flow route at the northwest corner drains to the adjacent privately-owned lands. Please submit signed consent from the adjacent private land owner to allow for this. This can be addressed as part of the Site Plan Control Application.*

**Under existing conditions, there is an approximate area of 0.35 ha that drains to the northwest corner without any SWM controls. Under the proposed grading and SWM plan for the site, all flows up to and including the 100-year storm are to be captured and controlled to the allowable release rates to Caledon Avenue. This means that the existing catchment area will be redirected away from the northwest corner and only emergency flows in excess of the 100-year storm will exit at that location (like under existing conditions). Therefore, the proposed grading and SWM plan will provide a significant reduction in the runoff currently draining to the northwest corner, and we believe that any permission is not required from the adjacent land owner. Overall, this emergency overland flow route is within the drainage rights of the Owner for this site.**

- 4. Please note that the proposed water services require a water meter in a chamber (located at the property line entirely on private land) complete with the appropriate backflow device for the land use.*

**The two water meter chambers with backflow preventors have been shown on the updated preliminary site servicing plan (Drawing SS-1) where the construction details will be provided during the site plan application stage.**

Infrastructure Planning Comments:

- 1. 5 Year target flow (364.9 l/s) for the proposed development is based on 5 year*

*flow from existing catchment 101 (fig 2) considering runoff coefficient,  $C=0.5$  and time of concentration,  $T_c=10$  min. Please confirm with supporting calculations that the considered  $C$  and  $T_c$  values are correct for this sub-catchment (considering existing conditions land use) to confirm that above mentioned target 5 year target flow is correct.*

**In Figure 2 in the SWM report, the total runoff coefficient (RoC) for Catchment 101 is calculated based on the calculated hardscape and landscape areas, which are 0.9 ha and 1.65 ha respectively. The total RoC is calculated to be 0.48 and 0.50 of RoC is used to be conservative.**

**In regards to the time of concentration ( $T_c$ ), we acknowledge this comment as we are currently using the minimum  $T_c = 10$  min for the preliminary SWM design calculations. During the detailed design stage, it is recommended to discretize the existing catchment further into sub-catchments to accurately assess the  $T_c$  calculation.**

- 2. Please review and confirm the storage volume requirements for different proposed storage elements and orifice sizes based on any required revision to target predevelopment flow based on the above mentioned.*

**As per the response to Item 1 above, the target maximum allowable flow rate has been maintained as 364.9 L/s in the preliminary SWM design calculations, but will be refined further at the detailed design stage.**

- 3. Please mention proposed underground storage model – Stormtech Chambermaxx (as per the servicing plan) in section 4.5 of the SWM report.*

**The selected product has been updated to an ADS MC-3500 model, and the corresponding descriptions have been updated in Section 4.5 of the SWM report. The ADS specification have been provided in Appendix C for additional reference.**

- 4. Section 4.6 of the report mentions 2 OGS proposed (no model mentioned) but no supporting OGS calculations provided. Please provide supporting OGS calculations.*

**The selected OGS model is CDS-6-C (On Line) has been mentioned in Section 4.6 of the SWM report and the OGS specifications have been provided in Appendix C.**

- 5. Please note that Level 1 stormwater quality control should be provided considering treatment train design principles in accordance with City of Hamilton and MECP standards. Please note that the actual ETV test performance data posted in the ETV website should be used for sizing of a hydrodynamic separator unit. In addition, please note that the max TSS removal efficiency of the Hydrodynamic separator unit cannot exceed the max performance stated on the ETV website.*

**This comment has been noted, and the final OGS details are to be confirmed through the detailed design process at the site plan application stage.**

6. *As per section 4.7 of the report at the detailed design stage, supporting LID design calculations should be provided for any proposed LID measure.*

**Comment noted.**

Preliminary Site Servicing Plan

Review Comments:

1. *Underground storage: for each proposed underground storage, please mention following information on the drawing:*
- a. *Top and bottom elevation including length, width and number of chamber units proposed*

**This comment has been addressed and the information is shown on the updated SS-1 drawing.**

- b. *Please mention 100 year water level, corresponding 100 year required volume and volume provided in the underground storage chamber*

**Comment addressed and shown on the updated SS-1 drawing.**

2. *Roof storage: for each proposed roof storage, please mention following information on the drawings:*
- a. *Type, size, no of flow control and location of the control*
  - b. *Corresponding 100 year required volume and max volume available.*

**Comment addressed and shown on the updated SS-1 drawing.**

3. *Please show proposed storm sewer size, length, and slope on the drawing*

**Comment addressed and shown on the updated SS-1 drawing.**

4. *Please show invert of proposed 155mm and 145mm orifices.*

**The orifice sizes have been updated to 130 mm and 165 mm, where the inverts are shown on the updated SS-1 drawing.**

Water servicing Comments:

1. *Please note that the building floor area, building height, building materials,*

*occupancy and exposure distance should be checked to be compliant with the RFF calculations at the site plan approval and building permit stages.*

**Comment noted.**

2. *The City's target available fire flow (AFF) for multi-residential land use is 150 L/s*

**Comment noted. Based on the results of the completed hydrant flow test, the residual pressure was approx 80 psi for 150 L/s.**

*Sanitary Sewer Servicing:*

1. *The proposed development may trigger the upsizing of the municipal sanitary sewer. The applicant is required to provide the impact analysis of the downstream sewer.*

**The findings from our downstream sanitary capacity analysis show that adequate capacity is available within the downstream municipal system without any required improvements. Please refer to Appendix D of the FSR.**

*Minor Storm Servicing:*

1. *The SWM report should include the total pre-development flow rates from the site and a table showing existing, proposed, controlled proposed flow rates from the site.*

**Comment has been addressed.**

2. *The drainage plan catchment numbers should match the calculations in appendix.*

**Comment has been addressed.**

We trust this information meets your requirements. If you require any further details or have any questions, please feel free to contact the undersigned directly.

Sincerely,

EXP Services Inc.



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