June 26, 2024

Ms. Koren Lam, MSc.
Senior Planner
Lanark County
99 Christie Lake Road,
Perth ON, K7H 3C6

Re: OTT-00262415-A0 166 Boyd Street
Responses to Review Comments

Dear Ms. Lam,

Please find attached EXP Services (EXP) responses to the Lanark County's letter dated February 13, 2023. This letter includes comments from the County, Town, MVCA and other agencies. The original comments are provided below, with our response to each provided in red. Responses are provided for the Engineering (infrastructure and transportation) comments only.

MVCA Comments (Jane Cho, Water Resources EIT)

1. The Grading Plan shows that the 5-year water elevation in the dry pond is 143.25 m. An orifice flow at elevation of 143.25 m provided in Table D-8 is 108.43 L/s, which exceeds the pre-development 5-year storm runoff rate of 64.5 L/s noted in Table 7-2. Is there a reason for using a bigger diameter orifice (i.e., 250 mm) to release excess runoff that is greater than the existing level?

   EXP has updated the dry pond design and proposed orifices configuration. Two round orifices are proposed to provide overall stormwater quantity control. Orifice 1 is 370 mm diameter and invert elevation is 143.10m. Orifice 2 is 105 mm diameter and invert elevation is 142.25m. The hydraulic performance of two proposed orifices have been reviewed via hydraulic modeling analysis via PCSWMM. Detailed discussion is included in the Servicing and SWM report (report), Section 8.10.

2. Please clarify how the 5-year post-development flow rate of 50.4 L/s noted in Table 7-3 is determined. Demonstrate that the post-development peak outflows match the allowable release rates for all storms.

   EXP has updated the Storm Servicing & Stormwater Management section in the report. The peak discharges from the Boyd site under the post-development conditions is discussed in Section 8.11. All post-development peak discharges are lower than the per-development peak discharges.

3. In the existing condition, it is assumed that stormwater runoff from the site flows to Boyd Street and discharges to the existing storm sewer on Boyd Street. Under the post-development condition, all flows up to and including the 100-year event (i.e., 137.15 L/s) from the site will be connected to the existing storm sewer on Arthur Street. Please confirm the capacity of the existing storm sewer system on Arthur Street.

   The peak discharge from the Boyd site under the pre-development conditions was modeled in PCSWMM. The modeled 100-year pre-development peak discharge is 175.5 L/s (See Section 8.4 of the report). The hydraulic capacity of the existing 600 mm diameter storm sewer on Arthur Street was calculated as per the pipe slope of 0.5% as indicated in the as-recorded drawing. The estimated full pipe capacity is 434 L/s. The post-development release rate was restricted to the pre-development release rate as requested in the pre-consultation meeting.

4. Criteria #3 in Section 7.2 states: “Measures to maintain infiltration should be considered and integrated into the stormwater management design where possible.”. MVCA recommends that Low Impact Development (LID) measures as part of the stormwater management plan should be implemented where feasible. Please discuss the proposed infiltration practice and demonstrate how infiltration measures will be integrated into the stormwater management design. Please refer to Runoff Volume Control Targets for Ontario Final Report (MOECC, October 2016) for Low Impact Development (LID) stormwater management guidelines.

   As per the Geotechnical Investigation Report (EXP, April 29, 2021), the Boyd site is generally underlain by bedrock. The surface of the bedrock is at a depth of 0.1 m to 0.7 m below the ground surface. It is our understanding that the infiltration practices as recommended in MOECC for Low Impact Development Design Guidelines are not feasible for the Boyd site. It is proposed to utilize lot level controls to direct the runoff, as much as possible, to the pervious area of each Block.

5. Geotechnical investigations may be required to determine the site-specific infiltration rate and the minimum clearance to the seasonally high groundwater elevation.

   Please refer to the response above.

6. As per the Post-Development Storm Catchments plan, emergency overland flow is to be directed to the north corner of the dry pond and the municipal right-of-way. Please identify it as an emergency overland flow route and clearly show it on the plans.

   The emergency spillway has been added to the grading plan (C-200). Detailed discussion is included in Section 8.12 of the report.

7. Please provide detailed design and/or calculations (i.e., cross-sections of the dry pond including inlet(s) and outlet(s), sides slopes, emergency overflow, infiltration capacity, drawdown time, etc).

For detailed design of the proposed dry pond see drawing: C-202. The hydraulic modeling analysis has been conducted to evaluate the dry pond capacity for various design rainfall events. See Section 8.9.3 of the report for the detailed discussion.

8. Please provide calculations to show how the provided storage volume within the dry pond is determined.

   The hydraulic modeling analysis has been conducted to evaluate the dry pond capacity for various design rainfall events. See Section 8.9.3 of the report for the detailed discussion. Table D-2 in Appendix D shows the Stage Area Table of the proposed dry pond.

9. Table D-8: Inlet Control Device (ICD) Sizing does not reflect the proposed dry pond grades. Please review and revise.

   The dry pond and the outlet control orifices design has been evaluated in the hydraulic modeling analysis in PCSWMM. Detailed discussions are included in Section 8 of the report. The PCSWMM model is submitted for further review.

10. The post-development runoff coefficient provided in the report is not consistent with the value used for OGS specifications. Please review and revise.

    The calculated runoff coefficient for the Boyd site under the post-development conditions is 0.62. Information on the OGS design is included in an Appendix.

11. Section 8 of the report indicates heavy-duty silt fencing to be used around the construction area whereas the Erosion and Sediment Control Plan shows light-duty silt fencing. Please revise.

    The erosion and sediment control plan drawings and report have been coordinated.

Comments from the Town of Carleton Place (Niki Dwyer, November 18, 2022)

Traffic Impact Study:

12. Updated traffic counts are required to account for development that has occurred between 2017 and 2022. This information is necessary prior to draft decision consideration.

    EXP has provided updated traffic counts within the revised Traffic Impact Study report dated June 2024. The counts were conducted in January 2024.

13. TIS has failed to consider the impact of traffic resulting from the opening of Boyd Street and the cumulation of trip data from recent development.

    The revised Traffic Impact Study report considers the traffic impacts of the opening of Boyd Street. Existing traffic patterns were re-distributed to account for the connection of Boyd

Street from Taber Street to Arthur Street. The re-distrusted traffic was accepted by the Town prior to the submission of the report.

14. Overall the TIS needs to be amended to consider the overall traffic patterns of the neighborhood, not simply the vehicle movement from this particular site.

    The revised Traffic Impact Study accounted for the overall traffic patterns within the neighborhood.

15. Report should also review and consider the policies of the Transportation Master Plan.

    The revised Traffic Impact Study considered the policies of the Transportation Master Plan.

<u>Servicing and SWM Report and Accompanying Plans:</u>

16. TWSI's to be shown on plans.

    TWSI's have been shown in the drawings.

17. The heavy-duty road structure outline in the details shall be utilized for the on-site and offsite roadway construction.

    The proposed pavement structure is noted in the drawings.

18. Confirm why a concrete island is proposed in the center line of Boyd St.

    A concrete island is not proposed.

19. Confirm sidewalk specifications on the southeast side of Arthur Street. The proposed sidewalk conflicts with the existing cedar hedge. The removal of the hedge will need to be communicated with the adjacent property owner.

    Additional survey information is being completed by the legal surveyor to establish the property line and the hedge location for the extension of Boyd Street.

20. Indicate the sidewalk widths on the grading plans.

    The sidewalk width is shown on the Detail sheet in the road section. It is also dimensioned on the grading plan.

21. Boyd St. roadway from Arthur St. to Taber St. does not exist and will be the responsibility of the developer to construct the road from the limits of Taber St. to Arthur St. The construction of this roadway is not clearly identified.

    The development on Boyd Street from Arthur Street towards Taber Street is shown on the plans.

22. On-site sidewalks will need to connect to the multi-use pathway.

    The sidewalks are connected to the multi-use pathway.

23. Boyd St. curb alignment will need to provide an 8.5m roadway. Current edge of asphalt was installed 0.5m short to allow to future curb installation.

    The proposed Boyd Street roadway is updated to be 8.5m wide.

24. As indicated in the pre-consultation meeting minutes the multi-use pathway will need to be constructed from the proposed subdivision to Woodward St. the current design does not reflect this.

    Plan C-201 shows the extension of the multi-use pathway from the edge of the proposed subdivision to Woodward Street.

Grading:

25. Drawings do not clearly show the road construction to connect to the Jackson Ridge subdivision. Additional finish grade elevations to be illustrated along with plan and profile drawings.

    Additional finished grade elevations have been added along Boyd Street.

26. Rear yard drainage within the center units will need to include rear yard catch basin to convey surface drainage into the storm system.

    I rear yard catchbasin is added behind Block 14.

27. Proposed elevations for the roadway, curb and sidewalk along Boyd St. to be provided.

    Additional detail has been added to the drawing set.

Sanitary:

28. The sanitary sewer between the southern leg of the crescent and Arthur Street is not needed. The servicing study indicates we asked for it. I do not see the benefit.

    A sanitary sewer in Boyd Street is proposed from the southern leg of the crescent to Arthur Street.

29. Confirm sanitary sewer pipe material.

    Sanitary sewer pipe material is PVC SDR 35. It is included in the construction notes.

30. Doghouse manhole to be specified with the sanitary connection to existing sanitary sewer.

    A doghouse manhole has been indicated on C-100.

31. Additional set of manholes will be required on this block of townhomes to avoid the additional bends on the services and crossing over adjacent homeowners' frontages.

    A detailed review was completed of main line sewers and service laterals. The manhole locations were adjusted. The service laterals should now not be crossing over the adjacent homeowners' frontage.

Storm

32. The dry pond is not truly a dry pond in that it is used for conveyance. The sewers should be continuous to the flow restrictor with excess flow backing up into the dry pond. The current configuration will end up looking like a ditch with cattails growing in the bottom of the conveyance channel which will inevitably form.

    The dry pond design has been modified. Onsite runoffs are collected by the proposed storm sewer system and discharge directly to the outlet flow control structure. Excess runoff flow will back up to the dry pond. Minor rainfall flows will discharge to the existing 600 mm storm sewer without flowing through the dry pond.

33. 3.0m easements will need to be conveyed to the Town for the rear yard catch basin leads. An R-Plan will need to be provided to confirm this.

    3.0 m easements are added for the rear yard catchbasin leads. An R-Plan will be prepared by the legal surveyor.

34. Confirm storm sewer pipe materials.

    Storm sewer pipe material is PVC SDR 35.

35. Road catch basins to be located outside of driveways.

    The catch basin locations have been shifted slightly.

36. Servicing plans need to clearly indicate that the units are to be equipped with a sump pump. Note: Sump pump detail will need to be provided for each building permit application.

    Storm lateral are proposed to each unit.

37. The dry pond is not truly a dry pond in that it is being used for conveyance. The sewers should be continuous to the flow restrictor with excess flow backing up into the dry pond. The current configuration will end up looking like a ditch with cattails growing in the bottom of the conveyance channel which will inevitably form. A structure should be added from the outlet to inlet for the storm sewer so there is no water being discharged into the dry pond.

    The dry pond design has been modified. Onsite runoffs are collected by the proposed storm sewer system and discharge directly to the outlet flow control structure. Excess runoff flow will back up to the dry pond. Minor rainfall flows will discharge to the existing 600 mm storm sewer without flowing through the dry pond.

38. Details need to be provided on orifice sizes for the inlet control devices and which structures incorporate an I.C.D.

    The dry pond and the outlet control orifices design has been evaluated in the hydraulic modeling analysis in PCSWMM. Detailed discussions are included in Section 8 of the report. Dry pond inlet/outlet control structure was included in the drawing C201.

39. Pond is being utilized to provide surface drainage during a rain event for the rear yards. The intent of the dry pond is to be utilized during a major rain event larger than the 5-year, not for surface drainage.

    Ponding boundaries have been added to rear yard catchbasins and roadway catchbasins which are in a sag location.

40. Please illustrate ponding limits within the right of way.

    Ponding boundaries have been added to roadway catchbasins which are in a sag location.

Watermain

41. It will be the responsibility of the Developer's contractor to perform any watermain connection(s) required. This shall be completed in the presence of a designated municipal water operator and the selected contractor shall prove to the satisfaction of the Town that they are competent to perform the works prior to initiating construction. A note to this effect to be illustrated on the drawings.

    A note has been added to the drawing as requested.

42. Confirm hydrant specifications, please note that Storz connections will not be accepted.

    All fire hydrants to be installed as per OPSD 1105.010.

43. Copper water service material was noted, however please be advised that the Town does accept ipex water services.

    Both types of water services have been noted on the drawings.

44. Bottom of hydrant flange elevations to be illustrated on the grading plans.

    Hydrant flange elevations have been noted.

45. The watermain connection from the proposed development to the Jackson Ridge development (to be installed by Cavanagh) is currently being reviewed will need to be determined if the connection is necessary prior to granting an approval.

    Noted.

Miscellaneous:

46. The proposed corner townhome block have servicing which does not respect the property lines. This needs to be corrected.

    Servicing details have been updated.

47. Plan/Profile drawings required to be submitted for the on-site works and Boyd St. sewer and water construction as outline in the Town's CLI ECA.

    Plan and profile drawings have been included in this submission for review.

48. For work along Boyd St. the developer will be required to receive an excavation permit from the Town.

    Noted. It is added to the general construction notes.

49. Prior to the removal of any hedges or fences along the western property line the Town would like to receive confirmation that the existing homeowner agrees with the proposal.

    Noted.

50. Legend needs to be included in the respective drawing (grading plan, servicing plan).

    Legends have been added to additional drawings.

51. CLI ECA application will need to be submitted for the storm and sanitary sewer along with a form 1 for new watermain installation.

    Noted.

52. Retaining walls shown at property line will require additional detail and will need to be offset to allow for construction without impacting neighboring properties with excavation and footings.

    Retaining wall details are added in the drawings with a proposed 0.15m offset distance to the property line.

53. The servicing study indicates that the existing services to the demolished home are to be capped at the property line. This is incorrect, all abandoned existing services are to be capped at the mains.

    This has been updated.

Should you have any questions during your review please contact either of the undersigned.

Sincerely,

EXP Services Inc.

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