

May 27, 2025

Mississippi Valley Conservation Authority 10979 Highway 7 Carleton Place, Ontario K0A 3P1

Attention: Mercedes Liedtke, Environmental Planner

Reference: Hannan Hills Subdivision Response to MVCA Comment Letter County File 09-T-21002 Our File: 118201

Novatech has filed concurrent Draft Plan of Subdivision and Zoning Amendment applications in relation to the above note subdivision in 2021. A revised application package was submitted in June 2024. This letter, along with the revised documents provided and listed below, respond MVCA comments provided in the letter dated August 16, 2024 and accompanying technical memo of the same date. The comments and responses are provided below in **bold** text and numbered according to the numbering sequence in which they were received.

Please find the following documents enclosed:

- Planning Rationale, dated May 2025, prepared by Novatech
- Serviceability and Conceptual Stormwater Management Report, dated May 2025, prepared by Novatech
- Hydrologic Impact Assessment, dated May 2025, prepared by Novatech
- Environmental Impact Study, dated May 2025, prepared by CIMA+
- Geotechnical Memo (in response to Town comments), dated November 25, 2024, prepared by Paterson Group

Stormwater Management

The Preliminary Storm Drainage Area Plan shows two uncontrolled drainage areas (U13 & U14). However, the uncontrolled post-development flow of 146 L/s provided in Table 5.3 appears to include only U13 as per Subcatchment Runoff Summary in the PCSWMM model output. Please clarify how the uncontrolled flow from U14 has been accounted for the total uncontrolled flow.

Novatech Response: Table 5.3 has been updated to reflect the uncontrolled and controlled runoff.

2. The maximum outflow from the dry pond in the PCSWMM model output does not appear to match the controlled post-development flow provided in Table 5.3. Please confirm the allowable release rate from the proposed dry pond.



Novatech Response: See response to Comment 1. Table 5.3 has been updated to show outflow from the pond as controlled flow.

3. Please demonstrate that the flow in the Spring Creek Municipal Drain downstream of the outlet of the dry pond does not exceed the pre-development flows/levels in the receiving watercourse.

Novatech Response: Table 5.3 demonstrates that the post-development flows to the Municipal Drain do not exceed the pre-development flows for all storm events up to and including the 100-year storm event. The only exception is the 25mm 4-hour Chicago event where flows are exceeded by 5 L/s, which does not account for the volume of runoff being infiltrated as part of the water balance measures.

4. Table 5.2 shows that the required 100-year storage volume is 1,661 m3. Please provide available storage volume within the proposed dry pond for the 100-year storm to confirm that the storage requirement is met and describe how the available storage volume is determined.

Novatech Response: The volume provided to the top has been added to Table 5.1 and Table 5.2 (2,048m³) showing that the pond has adequate volume for storms up to and including the 100-year event. A stage-area-storage curve for the pond was used in PCSWMM to determine the available storage volume and what was required in all the storm events. The stage-area-storage curve was determined based on the design presented in Figure 6 (Conceptual Stormwater Management Facility) and is provided in Appendix E. Additional text was added to Section 5.1 to clarify.

5. In Table 5.2 states that a 6-hour Chicago Storm Event was used for the table whereas the same discharge values are shown in Table 5.2 for the 12-hour SCS Storm Event. Table 5.2 should have a note that indicates what type of design storm was used for the storage-discharge values, as indicated in Section 5.1 of the report.

Novatech Response: Table 5.2 was updated to reference the 12-hour SCS storm event.

6. The bottom of pond elevation and the 100-year water level provided in the report (i.e., Table 5.1 and Table 5.2, respectively) are not consistent with Figure 6 Conceptual Stormwater Management Facility Plan. Please review and revise.

Novatech Response: Figure 6 was revised to reflect the water levels listed in Tables 5.1 and 5.2. The Tables were also reworded for consistency and clarity.

7. Section 2.2 of the HIS describes the wetland in relation to subject property but does not quantify the annual volumes associated with the hydrologic function of the wetland. Further, the HIS describes that the subject property is approximately 5.8% of the wetland area. As the wetland area is proposed to be removed, an understanding of the potential impact of the wetland is recommended and targets established to maintain runoff volumes, if necessary. Using a simplified methodology, such as the Thornthwaite-Mather method, please provide an assessment of the annual average volumes associated with the existing conditions for both the wetland and the subject property to establish runoff volume targets for the subject property.



Novatech Response: Quantitative review of the water balance is discussed in Section 2.3. A water balance using Thornthwaite-Mather method has been provided to quantify the infiltration targets and runoff volumes.

8. Section 2.3 of the HIS states that the drainage areas and surface runoff volumes to the municipal drain and the wetland area to the north would not be negatively impacted under proposed conditions. However, these statements were not quantified, and there is a concern that the increase in runoff volumes to the receiving municipal drain may increase downstream erosion. Please provide average annual volumetric calculations and supporting tables confirming the proposed change in hydrologic function for the proposed unmitigated for both the area draining to the wetland and the subject property.

Novatech Response: Water balance calculations have been provided in the HIS to establish runoff volume targets for detailed design. Refer to the HIS for changes to the annual runoff volumes.

9. Section 2.5 of the HIS proposes disconnected roof drains to promote infiltration. However, there is no supporting calculations to confirm if this is viable for meeting the existing conditions infiltration or runoff volumes. Please provide annual average runoff volume calculations and supporting tables confirming that the proposed mitigation strategy is sufficient to maintain infiltration volumes and hydrologic function of the area, including reducing the potential for downstream erosion from increased runoff volumes. If necessary, provide additional measures to increase infiltration and reduce runoff volumes, including exploring the potential use of the dry-pond.

Novatech Response: Water balance calculations have been provided in the HIS to establish runoff volume targets for detailed design. Mitigation measures are discussed further in the HIS. Due to high groundwater and shallow bedrock, it was not feasible to use the dry pond as an infiltration basin.

10. Based on the removal for the test for pollution in the updated Ontario Regulation 41/24, review of quality treatment is deferred to the municipality.

Novatech Response: Noted.

EIS and HIS Comments

1. Please add the area of MVCA's 30 m regulation limit to the wetland that is proposed for development to the HIS Table 1.

Novatech Response: The areas within the 30m regulation limit has been added to Table 1.

2. The EIS indicates that the buffer areas will be cleared and graded with the rest of the site, while Table 1 of the HIS indicates that the wetland habitat in that area will be retained. Please clarify if the watercourse setback buffer areas will be cleared and graded as part of the proposed development and to what extent.



- a. If the proposal is for removal; please provide an assessment on how this will impact the wetland soils and hydrologic function of the areas within the watercourse corridor and setback buffer.
- b. If these areas are to be cleared and graded then there is no "retained wetland" onsite, instead Table 1 of the HIS should be updated to state that 0.36 ha of wetland will be restored on site.
- c. Please provide details on what is proposed to be included in the "rehabilitation of the buffers". Will the mitigation measures recommend the re-use of on-site wetland soils?

Novatech Response: Areas of the retained wetland within the buffers that may be disturbed during construction would be rehabilitated. The rehabilitation is discussed in the EIS, which includes planting of native vegetation. The HIS indicates that the native soil is to be re-used and the grades to be reinstated to match existing. Further details of the rehabilitation measures would be provided at the time of detailed design.

3. What is the amount and extent of fill to be brought into the site to achieve sufficient soil depth to install servicing?

a. How will the slope grading be profiled in relation to the watercourse setback and wetland restoration areas?

Novatech Response: Up to 2m of fill would be added to the proposed development to allow for servicing and house construction. Grading changes would occur along the depth of the perimeter lots so as to match existing conditions at the retained wetland buffer. Per the HIS, disturbed grades within the wetland during construction would be rehabilitated.

4. The Preliminary Grading and Servicing Plan within the Stormwater Report (Novatech, 2024) shows that the rear yard overland flows for the northern parcels will be collected in a rear yard swale that then outlets to the stormwater system. How will base flow and hydrology of the watercourse and proposed areas of restored wetland be maintained pre to post under these circumstances?

a. Please confirm the use of LID infiltration techniques within the intended swale area.

Novatech Response: A water balance has been provided in the HIS to show the difference between pre-development and post-development unmitigated infiltration. The rear yard drainage systems abutting the existing drains would be designed to promote infiltration adjacent to the rehabilitated wetland areas adjacent to the drains. Details on potential LID measures are discussed further in the HIS.

5. The HIS indicates that the onsite wetland habitat will be removed and thus infiltration measures to keep it hydrated are not required. MVCA notes that wetland habitat will be reinstated onsite and infiltration measures may still have a role in maintaining the hydrology of these features. Please provide a discussion coordinated between the EIS, HIS and the Stormwater Plan.

Novatech Response: Discussion has been coordinated between the EIS, HIS and Stormwater. Infiltration measures are being proposed along the perimeter wetland being retained/rehabilitated, and within the site.



6. Wetland soils are known to absorb runoff and help mitigate flooding and erosion. Please provide further impact assessment discussion on the impacts of removing 2.69 ha of wetland from the downstream end of the overall wetland and how the hydrology of the wetland and the Spring Creek Municipal Drain watershed will be maintained pre to post.

Novatech Response: A water balance has been provided in the HIS. The site is located within the downstream portion of the wetland and is not impacting the remaining wetland. The development has shallow bedrock with high groundwater and the existing ditch along the northwest boundary of the development intercepts the groundwater flows and directs them to the Municipal Drain.

7. Impacts to the on-site natural heritage features have been discussed, however the cumulative impacts of successive development within this catchment area have not been thoroughly discussed in regard to environmental or hydrologic impacts. There are other active development applications adjacent and within the catchment area with anticipated pressures on the wetlands.

Novatech Response: There are existing constructed drains located between the site and the upstream offsite wetlands. Review of the previous development and the impact of the existing municipal drainage features on the wetlands is beyond the scope of this project.

- 8. MVCA notes that the proponent will require a detailed wetland compensation and restoration plan for conceptual agreement prior to proceeding to detailed design.
 - a. The EIS indicates that a wetland compensation and restoration plan will be submitted to MVCA at detailed design. However, overall compensation amounts and locations are to be submitted during the draft plan approval, and further details may be refined during detailed design.
 - b. Define the amounts and proposed locations for the various proposed types of on-site habitat enhancements. MVCA requests a figure and summary table be created to show how and where the loss of 2.69 ha of wetland habitat will be compensated.
 - c. It should also include a recommended timeline for post construction effectiveness monitoring, and plantings survival/replacement assessments.

Novatech Response: Refer to the updated EIS by CIMA+.

9. MVCA recommends that an overall development plan package harmonize and summarize all recommended impact mitigation measures that are to be carried forward into Detailed Design.

Novatech Response: A summary of mitigations measures has been included in the Serviceability and Conceptual SWM Report.

10. A more through integration of the technical studies (EIS, HIS, SWM) is requested as different terminology is being used and some recommendations have not been included in the preliminary stormwater designs.

Novatech Response: The reports have been updated for consistency between reports.



Sincerely,

NOVATECH

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Alex McAuley, P.Eng. Senior Project Manager Land Development Engineering

cc: Koren Lam, County of Lanark Melanie Knight, Municipality of Mississippi Mills Julie Stewart, Cavanagh Developments