

MEMO

July 3, 2026

Ms. Amy MacPherson
Natural Systems Planner
City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1

CC: Jennifer Boyer, South Nation Conservation Authority

RE: Addendum to the Environmental Impact Study (S-4 Expansion Lands)

Dear Ms. MacPherson,

The purpose of this addendum is to provide an updated impact environmental assessment as it relates to the conceptual servicing designs for the S-4 Leitrim Urban Expansion Area and the adjacent Leitrim Provincially Significant Wetland (PSW). This document serves as a technical update to the Environmental Impact Statement (EIS) (October 2025), and builds on the environmental management objectives established in the previous Environmental Management Plan (EMP) for the adjacent "Idone" lands.

In response to South Nation Conservation (SNC) review comments, this addendum incorporates the updated engineering conceptual design parameters and technical clarifications reviewed against natural heritage and other environmental sensitivities.

This addendum references several technical documents to support the proposed servicing strategy and environmental impact assessment. The following key reports have been referenced throughout this document to provide the necessary background and design detail:

- / **Environmental Impact Statement (EIS)**, prepared by Arcadis (October 2025)
- / **Environmental Management Plan for the Remer and Idone Lands**, prepared by Golder Associates Ltd. (February 2016)
- / **Serviceability Report**, prepared by Arcadis (June 1st, 2026)
- / **Geotechnical Investigation Report** (PG6912-1 Revision 7), prepared by Paterson Group (June 2, 2026)
- / **Hydrogeological Study** (PH5087-REP.01.R3), prepared by Paterson Group (June 1, 2026)
- / **Year 5 Constructed Channel Monitoring Report**, prepared by Cambium Inc. (October 2024)
- / **Natural Heritage Existing Conditions Report**, prepared by Arcadis (March 2025)

Description of Preferred Stormwater Management Solution

The S-4 Leitrim Urban Expansion Area is divided into two distinct drainage catchments based on existing topography. The servicing strategy provides a conceptual design to achieve water quality and quantity control in accordance with pre-development conditions, while ensuring compliance with the City's Official Plan and detailed design requirements.

To address comments regarding grading, drainage, and sediment and erosion control, the upcoming detailed engineering submission will be governed by the following design principles. The final Grading and Drainage Plan will be prepared in accordance with the City of Ottawa Sewer Design Guidelines, prioritizing the maintenance of existing flow paths and ensuring that all watercourses impacted by the development are explicitly identified and

protected. Concurrently, the Sediment and Erosion Control Plan will be governed by the City of Ottawa's Erosion and Sediment Control Guidelines for Urban Construction (2006).

Eastern Catchment Facilities and Infrastructure

The eastern catchment will outlet to Dun Skipper Drive via a new storm sewer extension in Bank Street, utilizing the previously allocated 523 L/s capacity associated with the planned Earl Armstrong Extension.

Additionally, a dry pond will be implemented on-site to provide major system retention for the eastern portion of the site. The design of this northeast stormwater pond has been evaluated and confirmed to function appropriately given the estimated groundwater levels observed on-site, as documented in the Paterson Group Geotechnical Investigation Report (PG6912-1 Revision 2, August 8, 2025). This report confirms that the design accounts for the site's specific subsurface and high groundwater conditions, ensuring long-term operational stability.

Western Catchment Facilities and Infrastructure

The western catchment discharges to a new linear wetland facility designed to provide quality and quantity control in accordance with pre-development conditions. Consistent with airport safety requirements prohibiting permanent wet ponds in this vicinity, this facility is designated as a "dry" stormwater management feature and will not attract waterfowl. The facility will achieve "Enhanced" water quality treatment, corresponding to 80% Total Suspended Solids (TSS) removal.

Area A2—defined as the portion of the development lands located south of the future Earl Armstrong Road alignment—poses a topographic constraint to the stormwater design. To manage runoff from this area, the proposed grading design conveys flow northward to the constructed channel, ensuring appropriate routing to the designated stormwater facilities.

Post-development peak flows, calculated at 0.66 cms (660 L/s) based on the completed water budget analysis, will be attenuated to the allowable release rate of 660 L/s before being discharged to the existing constructed channel. The facility is designed as a multi-stage system to manage both frequent and extreme events. As part of channel optimization, the existing non-functional rock weir at the INT-3 / Reach S4-F junction will be removed to restore hydraulic connectivity. Naturalized banks will be reinstated at the Scratch Ditch outlet to correct localized erosion and improve ecological connectivity. The ownership and maintenance responsibility for this linear stormwater management feature will be finalized during the Draft Plan of Subdivision process, in accordance with City of Ottawa requirements regarding municipal easements or ownership.

With respect to overland flow routing, the system is designed so that most storm overland flow from INT-3, the Scratch Ditch, and site sumps is directed into the linear stormwater management facility or the conveyance channel. This ensures that runoff is appropriately managed before entering the receiving watercourses.

Receiving Stormwater Infrastructure

The stormwater management strategy for the S-4 Leitrim lands utilizes two primary receiving facilities to manage post-development flows in accordance with the findings of the Arcadis Serviceability Report.

The eastern catchment outlets to the municipal storm sewer network, which ultimately conveys flow to the existing Findlay Creek Stormwater Management Facility (SWMF). As detailed in Section 7.3 of the Arcadis Serviceability Report, this regional facility provides final water quality and quantity control for a significant portion of the Leitrim development area, ensuring that discharges from the eastern catchment are managed within the broader municipal network.

The western catchment discharges into the existing constructed channel located along the western boundary of the site. This channel serves as the primary receiving body for the S-4 lands, directing flows toward the Leitrim Wetland Buffer. As described in Section 7.6.2.1 of the Arcadis Serviceability Report, the current design strategy focuses on optimizing this channel by removing the non-functional rock weir at the INT-3 / Reach S4-F junction and reinstating naturalized banks. This optimization enhances hydraulic connectivity and ensures that the channel maintains its design function as a controlled conveyance pathway while protecting the adjacent natural heritage features.

Impact of the Proposed Stormwater Management Strategy on the Wetland

The stormwater management solution for the S-4 Leitrim lands addresses the hydrologic and hydrogeologic requirements of the Leitrim Provincially Significant Wetland (PSW). For the purpose of this assessment, the Casino Wetland is considered to be a component of the Leitrim PSW based on information included in the Environmental Management Plan (EMP) completed for the adjacent Remer and Idone lands, prepared by Golder Associates Ltd. (February 2016). This assessment integrates findings from the Paterson Group Hydrogeological Study (2026) and concludes that the proposed development will result in minimal negative hydrogeological impacts on the PSW.

Water Budget Impacts

It is understood that the Leitrim PSW may be sensitive to changes in groundwater elevations, groundwater recharge and surface water runoff – as would be the case with most wetland features. The hydrogeological assessments completed for the adjacent Remer and Idone lands, as documented in the Environmental Management Plan and Hydrogeological Assessment for the Remer and Idone Lands, Ottawa, Ontario prepared by Golder Associates Ltd. (February 2016 and January 2016, respectively), confirms that groundwater flow in the overburden generally follows the local topography, while recharge to the Leitrim Wetland is primarily derived from the permeable sand and gravel ridge.

Consistent with the Remer-Idone EMP and Hydrogeological Assessment, groundwater flow within the S-4 development lands follows local topography and is characterized by two catchment areas as shown on Paterson Drawing PH5087-6 included in the Figures Section of the Hydrogeological Study prepared by Paterson (June 1, 2026). Under pre-development conditions, the western catchment area is inferred to have a westerly groundwater flow direction towards to the Leitrim PSW. To mitigate the potential reduction in groundwater recharge contributions to the wetland under post-development conditions, the proposed civil design includes an increased footprint of the Leitrim PSW catchment area (western catchment) within the S-4 boundary as shown on Drawing PH5087-7 included in the Figures Section of the Paterson Hydrogeological Study. To quantify these changes, Paterson completed an annual catchment specific water budget assessment which is included in Appendix 2 of the Hydrogeological Study. While onsite infiltration within the western catchment is estimated to decrease from approximately 8,582,400 L/year to 4,525,165 L/year under post-development conditions, the larger post-development catchment area will increase the volume of water conveyed to the wetland by directing surficial flows through the wetland stormwater management facility, with runoff increasing from 5,721,600 L/year to 47,142,722 L/year. As a result, it is estimated that there will be a net increase in flows to the wetland (combination of groundwater recharge and runoff volumes) from 14,304,000 L/year to 51,667,887 L/year. Therefore, it is anticipated that there will be an increase in hydration to the Leitrim PSW under post-development conditions.

The western catchment stormwater infrastructure has been designed to manage both the quality and quantity of runoff before it enters the receiving channel system and Leitrim Wetland. In particular, the linear wetland facility will provide “enhanced” water quality treatment, corresponding to 80% Total Suspended Solids (TSS) removal, thereby reducing sediment loading and protecting downstream wetland functions.

In addition to stormwater treatment, the proposed works will improve the function of the receiving constructed channel. The removal of the non-functional rock weir at the INT-3 / Reach S4-F junction and the reinstatement of naturalized banks will improve hydraulic connectivity, address localized erosion, and support the ecological restoration objectives documented in the Year 5 Constructed Channel Monitoring Report (Arcadis Serviceability Report, Appendix E). It is understood that the rock weir was informally constructed to accommodate ATV use and does not provide a documented surface water control function.

These design measures are intended to be consistent with the drainage approach described in the Remer-Idone EMP. That report recognizes that pre-development surface drainage in the adjacent lands generally follows existing topography. It also identifies constructed conveyance channels and directed major system flow as appropriate tools for maintaining surface water contributions to the wetland, while controlling sedimentation, erosion, and water quality impacts. Accordingly, development-related changes to surface water runoff are not expected to adversely affect recharge of the downstream Leitrim Wetland as any reduction in localized groundwater recharge within S-4 will be mitigated by directing flows to areas within the same subwatershed, where infiltration will occur offsite, thereby maintaining the natural function of the hydrologic and hydrogeologic systems. Within this context, the

proposed S-4 stormwater strategy maintains controlled conveyance toward the receiving channel and wetland buffer and provides treatment and attenuation prior to discharge to preserve the overall hydrologic/hydrogeologic function of the wetland.

Impact on Vegetation and Wildlife

The stormwater management strategy is integrated with the site's overall ecological objectives, ensuring that the hydrological function of the Leitrim PSW supports local vegetation communities and wildlife habitat. By regulating surface water volumes and removing suspended solids, the design prevents sedimentation and erosion that could degrade the wetland buffer and the constructed channel's ecological features. This protection of the hydrological regime preserves the established plant community composition and the overall functional integrity of the wetland habitat. Furthermore, field surveys have identified Species at Risk (Butternut and Black Ash) within the study area; these will be subject to further assessment and potential authorization under the Endangered Species Act, 2007, to ensure appropriate mitigation.

Impact Mitigation

To minimize potential environmental impacts during construction and operation, the project incorporates robust mitigation protocols as outlined in the Paterson Group geotechnical and hydrogeological investigations (2026) and the Arcadis *Serviceability Report*. Given the shallow groundwater table and site hydrogeological constraints, the design utilizes conventional stormwater management infrastructure, supplemented by clay trench plugs (seals) within mainline servicing trenches to prevent groundwater drawdown and maintain the local water table.

The Sediment and Erosion Control Plan will prioritize the installation of perimeter controls prior to any site disturbance and the implementation of staged sediment control measures. Rigorous maintenance protocols will be enforced throughout the construction phase to ensure zero discharge of sediment-laden runoff into the Leitrim PSW. Importantly, habitat features integrated into the conveyance channel for ecological purposes will be strictly excluded from sediment cleaning maintenance activities to preserve established aquatic habitat.

Ongoing performance of the constructed channel will be monitored to ensure hydraulic function remains consistent with the findings of the *Year 5 Constructed Channel Monitoring Report*. Furthermore, maintaining a stable hydrologic environment supports the long-term viability of habitats utilized by local fauna, including species of conservation concern such as the eastern wood-pewee and wood thrush. The commitment to naturalizing banks and eliminating erosion points preserves these ecological corridors, allowing for the continued success of established restoration efforts and providing a stable foundation for ongoing biological productivity.

Conclusion

In conclusion, the submitted *Environmental Impact Study* (EIS) (October 2025) and *Tree Conservation Report* (TCR) (October 2025), complemented by the finalized engineering discussion outlined in this addendum, provide a robust technical rationale to support the lifting of the Future Neighbourhood Overlay and the approval of the Draft Plan of Subdivision. Recently updated hydrologic and hydrogeological assessments—including the findings of the Paterson Group geotechnical investigation (June 2, 2026)—confirm that the proposed servicing strategy, specifically the implementation of the western linear wetland facility and eastern storm sewer extensions, successfully maintains the existing hydroperiod of the Leitrim PSW. This analysis demonstrates that the project is designed to avoid negative environmental impacts, preserve established vegetation, and uphold the functional integrity of the wetland within pre-development parameters.

As the development advances toward the Detailed Design stage, final mitigation and tree preservation measures will be integrated into the comprehensive site engineering, landscaping, and infrastructure plans. This phased implementation approach ensures that all regulatory and environmental requirements are fully addressed in alignment with the approved stormwater management strategy. We remain committed to coordinating these final design elements with the City and relevant authorities to ensure the long-term success and ecological health of the S-4 Leitrim Urban Expansion Area and the adjacent Leitrim Wetland.

Sincerely,



Alex Zeller, M.Sc.

Principal – Natural Environment

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