LETTER OF AGREEMENT

Township of King Stormwater Management Inspection, Maintenance Prioritization, and Improvements
(hereinafter called the "Project")

THIS AGREEMENT dated the 21st of February 2025.

BETWEEN:

Township of King
(hereinafter called the "**Township**")

AND

TORONTO AND REGION CONSERVATION AUTHORITY
(hereinafter called "**TRCA**")

AND

LAKE SIMCOE REGION CONSERVATION AUTHORITY
(hereinafter called the "**LSRCA**")

Each individually a "Party" and collectively referred to as the "Parties"

WHEREAS the Township of King has allocated a budget with an upset limit of **$170,023.40** exclusive of HST for the completion of the Project;

WHEREAS the Township of King has requested TRCA and LSRCA to undertake the completion of certain inspection, maintenance and monitoring requirements to support the Township's efforts to maintain compliance with the Ministry of Environment, Conservation and Parks' (MECP) Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) and stormwater management improvements at various sites throughout the Township's jurisdiction in compliance with the terms, conditions and provisions of this Letter of Agreement (which, together with any amendments thereto from time to time, is hereinafter called the "Agreement");

WHEREAS there **is** an existing agreement between the parties that includes Phase 3 Stormwater Management Improvements which was signed on August 9, 2024 and has been partially completed and remains in full force and effect (hereinafter referred to as the Existing Agreement).

AND WHEREAS the Township of King awarded the work for the provision of stormwater facility inspection, maintenance and monitoring assessment, and other related improvements services to TRCA and LSRCA pursuant to the agreement and Costing Tables;

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the covenants and agreements contained herein and subject to the terms, conditions and provisions contained herein, TRCA, LSRCA and the Township agree as follows:

ARTICLE 1
GENERAL CONDITIONS

1. Agreement

The Agreement includes the following: (i) Schedule "A" and Schedule "B"; and (ii) any amendment by the Parties executed in accordance with the terms of this Agreement and by the terms of the amendment made part of a Schedule to the Agreement.
.

The Township shall provide TRCA and LSRCA with a copy of the Purchase Order (P.O.). TRCA and LSRCA shall conform to the conditions stated in the Purchase Order issued by the Township Accounting Department. If there is a conflict, this Agreement supersedes any conditions outlined in the Township's Purchase Order.

The Letter of Agreement represents the entire agreement between the parties regarding the Project and replaces any prior understanding or agreement, collateral, oral or otherwise, with respect to the Project except for the Existing Agreement between the parties.

2. Services, Fees and Terms of Payment

The Township hereby retains TRCA and LSRCA as independent contractors to provide the services for the Project as described and provided for in Article 2 and Schedule A (the "Services") of this Agreement, and both TRCA and LSRCA hereby agree to provide and perform the services, in accordance with the terms, conditions and provisions of the Agreement, commencing on the first day of the Term. The services shall include all changes, alterations or additions to the services under Section 14 hereof, and all other services, duties, functions or responsibilities that are not specifically described in the Agreement but that are reasonably and directly required for the proper performance and provision of such services.

Both TRCA's and LSRCA's services will be incorporated within milestone invoicing that TRCA will issue to the Township for review. The Township shall pay the TRCA for provision of the services the fees together with costs, expenses and disbursements incurred by TRCA (collectively, the "Fees") as set forth in Article 3 of this Agreement, upon satisfaction of the milestones and conditions, and in such manner and at such times, as set forth in Article 3. TRCA will be responsible for disbursing payment to LSRCA in accordance with Article 3 of this Agreement.

3. Confidentiality

For purposes of this Section 3, the term "Confidential Information" shall mean all reports, documents, data, studies, surveys, drawings, maps, models, photographs, and other material and information that is the property of the Township and in the possession or under the control of TRCA pursuant to the Agreement; or prepared or assembled by TRCA and LSRCA in connection with the services pursuant to the Agreement; or identified as confidential, communicated or acquired by the Consultant or disclosed by the Township in connection with the Services; or which are comprised of policy, proprietary, technical, business, financial and other information which the Township treats as confidential or which is not available publicly. TRCA and LSRCA along with their partners, directors, officers, appointees, employees, agents, contractors, subcontractors and volunteers, both during and following the Term of this Agreement: (i) shall treat as confidential

and secure all Confidential Information; and (ii) shall not, directly or indirectly, disclose, copy or use any Confidential Information, except as required by law including the *Municipal Freedom of Information and Protection of Privacy Act* (Ontario), without the prior written consent of the Township. Information in the public domain, or disclosed by law or known by third parties shall not be considered confidential information.

TRCA and LSRCA understand and agree that the Agreement and any materials or information provided to the Township through the performance of the Agreement may be subject to disclosure by the Township pursuant to the *Municipal Freedom of Information and Protection of Privacy Act*, or otherwise. This Section 3 survives the completion or termination of this Agreement.

4. Insurance

TRCA and LSRCA shall separately obtain and maintain, at each party's own expense, the following policies of insurance, in form and content and with an insurer acceptable to the Township, and, unless otherwise stipulated in the Agreement, for the duration of this Agreement and until the date of final acceptance of the services by TRCA and LSRCA and final payment:

TRCA Insurance requirements

Commercial General Liability Insurance in the name of TRCA, and including the Township as additional insured, and in an amount of not less than $5,000,000.00 inclusive per occurrence for bodily injury, death and property damage including loss of use thereof, with a property damage deductible not exceeding $5,000.00. To achieve the desired limit, umbrella or excess liability insurance may be used. The insurance shall be maintained continuously from the commencement of the services until completion and acceptance of the services by the Township and final payment.

Standard Automobile Liability Insurance, which shall have limits of not less than $2,000,000.00 inclusive per occurrence for bodily injury, death, and property damage, with a deductible not exceeding $5,000.00, covering all licensed vehicles owned or leased by TRCA;

Prior to the commencement of services and upon any replacement, renewal, extension or amendment of all or any part of such insurance coverage, TRCA shall promptly provide the Township with satisfactory confirmation of coverage, and, if required, a certificate of these policies including any amending endorsements, signed by the insurer or an authorized agent of the insurer.

LSRCA Insurance requirements

Commercial General Liability Insurance in the name of LSRCA, and including the Township as additional insured, and in an amount of not less than $5,000,000.00 inclusive per occurrence for bodily injury, death and property damage including loss of use thereof, with a property damage deductible not exceeding $5,000.00. To achieve the desired limit, umbrella or excess liability insurance may be used. The insurance shall be maintained continuously from the commencement of the services until completion and acceptance of the services by the Township and final payment.

Standard Automobile Liability Insurance, which shall have limits of not less than $2,000,000.00 inclusive per occurrence for bodily injury, death, and property damage, with a deductible not exceeding $5,000.00, covering all licensed vehicles owned or leased by LSRCA;

Prior to the commencement of services and upon any replacement, renewal, extension or amendment of all or any part of such insurance coverage, LSRCA shall promptly provide the Township with satisfactory confirmation of coverage, and, if required, a certificate of these policies including any amending endorsements, signed by the insurer or an authorized agent of the insurer.

5. Indemnification

TRCA, LSRCA, and the Township shall hereafter indemnify and save harmless each other and their respective Members, directors, officers, appointees, employees, servants, agents, consultants, contractors, representatives and each of their successors and assigns from and against all loss, damage, or injury and all actions, suits, proceedings, costs, charges, damages, expenses, liability, interest, liens, claims or demands ("Claims"), except to the extent caused by the negligence or willful misconduct of the indemnifying party.

6. Arbitration

All matters in dispute under this Agreement may with the consent of both parties be referred to arbitration. The award of the arbitrator shall be final and binding upon the parties. The provisions of the Ontario *Arbitration Act, 1991* shall apply.

7. Successors and Assigns

This Agreement shall endure to the benefit of, and be binding upon, the parties hereto, and their respective heirs, executors, administrators, successors and permitted assigns.

8. Assignment

TRCA and LSRCA shall not assign, encumber or otherwise transfer any interest in this Agreement or any part hereof or any rights granted hereunder, or subcontract any of the services, or direct payment of any amounts payable hereunder to any third party, without the prior written consent of the Township, which consent may be withheld by the Township in its sole discretion, or given subject to such terms and conditions as the Township may require.

9. Term, Termination, Suspension

The Term of this Agreement shall be as defined and provided for in Schedule A, and shall end on the date on which the Project is completed in accordance with this Agreement or at any earlier time if the services are completed and the parties agree in writing or if this Agreement is terminated for any other reason under the provisions of this Agreement.

Either TRCA, LSRCA, or the Township may terminate this Agreement in the event of default by the other upon 90 days written notice to the other party, after the party wishing to terminate has first given notice to the other party of the default of the other party and the other party, within 60 days of such default notice, has not cured such default or is not proceeding continuously and

expeditiously to cure same; provided however, in the case of a monetary default that party wishing to terminate need only notify other party of the monetary default and if it is not cured within 5 days, the party wishing to do so may terminate on a further 5 days' notice.

If this Agreement is terminated by the Township, pursuant to the foregoing, the Township shall only be responsible for the payment of the following amounts, without duplication, as determined by the Township acting reasonably: (i) costs, expenses and disbursements incurred by TRCA and/or LSRCA pursuant to this Agreement up to and including the date of termination; and (ii) fees as calculated pursuant to the Agreement in accordance with the value of the services up to and including the date of termination; and if this Agreement is terminated, the Township shall pay for only those services completed to the Township satisfaction at the date of termination less the amount the Township deducts and sets off for any costs and expenses as reasonably determined by the Township relating to TRCA's and/or LSRCA's breach of this Agreement or to complete the services. If this Agreement is so terminated, any such payments shall constitute full and final satisfaction of all claims of every nature and kind which TRCA and/or LSRCA may have against the Township.

10. Inspection and Deficiencies

The Township, or persons authorized by the Township, shall have the right, at all reasonable times, to inspect or otherwise review the services both on completion and as work in progress and for that purpose shall have the right to enter, at reasonable times, the premises where they are being performed, to determine whether such services adhere to the Agreement. The Township may give reasonable notice to TRCA and LSRCA, with particulars, that the services are not being performed in a manner reasonably satisfactory to the Township or in accordance with the Agreement, and setting out the deficiencies requiring correction. Upon receipt of such notice, TRCA and/or LSRCA shall, at its own expense, immediately take action to correct the deficiencies, which shall be rectified within 60 days of delivery of such notice. Should TRCA and/or LSRCA fail to correct such deficiencies, the Township may, in its sole discretion, elect to grant TRCA and/or LSRCA further time to correct the deficiencies, without prejudice to the Township's right to terminate this Agreement forthwith.

11. Independent Contractor

TRCA and LSRCA are both independent contractors providing services to the Township and neither TRCA or LSRCA nor any employees or agents of TRCA and LSRCA are or shall hold themselves out as being or shall be construed as employees, servants, agents or partners of or joint venturers with the Township.

12. Records and Audit

TRCA and LSRCA shall prepare and maintain proper and accurate books and records of accounts respecting the services, the payment of Fees and the TRCA's and LSRCA's business with the Township under the Agreement.

In order to provide data for the calculation of fees on a time basis (where applicable), TRCA and LSRCA shall keep a detailed record of the (where applicable) time spent by and the salaries paid to its staff employed on the Project.

The Township at its own cost may audit all financial and related records associated with the terms of this Agreement including timesheets, reimbursable out of pocket expenses, materials, goods, and equipment claimed by TRCA and LSRCA. TRCA and LSRCA shall at all times during the term of this Agreement, and for a period of 7 years following completion of the Agreement, keep and maintain records of the work performed pursuant to this Agreement. This shall include proper records of invoices, vouchers, timesheets, and other documents that support actions taken by TRCA and LSRCA. TRCA and LSRCA shall at its own expense make such records available for inspection by the Township at all reasonable times.

13. Changes, Alterations and Additional Services

Upon notice to TRCA and LSRCA, the Township may, in writing at any time after the execution of this Agreement or the commencement of the services, delete, extend, increase, vary, reduce or otherwise alter the services forming the subject of the Agreement if accepted by all parties, and if such action by the Township necessitates additional staff or services, TRCA and LSRCA shall be paid in accordance with Article 3 for such additional staff employed directly therein, together with such expenses and disbursements as allowed under Article 3. In the case of a change in the requirement for services as provided in the foregoing sentence, credits or charges to the Township will be agreed between the parties, and if not so agreed, will be determined by arbitration as provided in this Agreement.

ARTICLE 2
SERVICES

14. Services

TRCA and LSRCA agree to provide the services as defined and provided for in the Agreement, and any related goods and materials, as described and provided for in the Agreement, in accordance with the terms, conditions and provisions of the Agreement, and in accordance with the timelines, schedules and benchmarks set out in the Agreement.

15. Representations and Warranties Respecting Services

Notwithstanding the foregoing (i) TRCA's and LSRCA's liability herein shall be limited to the amount of insurance it is required to obtain as herein provided and to the extent corrections or revisions are required to the services for any reason. (ii) In no event shall the Township be liable for any special, indirect, incidental or consequential damages, including loss of profits or revenue howsoever caused, whether or not such damages are foreseeable or TRCA has been advised of the possibility of such damages.

ARTICLE 3
FEES, DISBURSEMENTS AND TERMS OF PAYMENT

1. Fees

The Township shall pay TRCA the Fees provided for in the Agreement, calculated and payable in the manner set out in Schedule A, and otherwise as set out in Article 3, and subject to any expenses, taxes, and/or disbursements, as set out in the Schedule A. No fees or costs, expenses or disbursements for any additional work beyond the provision of the services will be considered unless pre-approved in writing by the Township. Any work undertaken by LSRCA will be incorporated in the milestone invoicing presented by TRCA to the Township and reimbursed by TRCA after payment from Township has been received through the STEP-Water agreement or as provided herein this Agreement.

2. Payments

TRCA will invoice the Township for technical services that support activities associated with the inspection and maintenance prioritization efforts undertaken by TRCA and LSRCA on a semi-annual basis in accordance with TRCA's pay periods, timelines, payment and other schedules and benchmarks set out in Schedule A. A final invoice accounting for the difference between the credited amount and actual service efforts from TRCA and LSRCA will be issued by TRCA at the appropriate time by the end of Q1 2027 after the project is complete.

Each such invoice shall contain such details as the Township shall require and, without limiting the generality of the foregoing, shall set out the services completed, and Fees incurred to the end of the applicable quarter including harmonized sales tax (HST), along with the timelines, payment and other schedules and benchmarks to which such work relates as noted in Schedule A.

Payment to TRCA is due on delivery. All accounts outstanding after 45 days will be charged interest calculated at 1.5% per month.

The Township shall advise TRCA should it have any objection to any invoice, and the parties shall work co-operatively to resolve the matter, and failing resolution, the matter shall be referred to arbitration in accordance with the provisions of this Agreement.

TRCA shall be solely responsible for the payment of all personnel (including without limitation subcontractors and suppliers and their respective personnel) engaged in the performance of any of the services as outlined for TRCA personnel in Schedules A and B.

LSRCA shall be solely responsible for the payment of all personnel (including without limitation subcontractors and suppliers and their respective personnel) engaged in the performance of any of the services as outlined for LSRCA personnel in Schedules A and B.

ARTICLE 4
GENERAL PROVISIONS

Further Assurances. The parties hereto shall sign such further and other documents, cause such meetings to be held, do and perform and cause to be done and performed such further and other acts and things as may be reasonably necessary and desirable in order to give full effect to the Agreement throughout the Term of this Agreement.

Time of the Essence. Time shall be of the essence of this Agreement and any other Agreement Documents and every part hereof and no extension or variation of this Agreement shall operate as a waiver of this provision. All dates or deadlines are to be strictly adhered to.

Severability. If any provision or provisions of this Agreement or application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such provision or provisions to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law and be independent of every other provision of this Agreement.

Governing Law. This Agreement and the rights, obligations and relations of the parties hereto shall be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein, without regard to conflict of laws rules or principles.

Interpretation. This Agreement shall be read with all changes of gender and number as required by context. The headings in this Agreement have been inserted for convenience of reference only and do not form part of this Agreement. Such headings may not be referred to in the interpretation of this Agreement and do not affect the meaning, effect or construction of this Agreement.

Entire Agreement. Each party acknowledges that there are no covenants, representations, warranties, agreements or conditions, express or implied, collateral or otherwise, forming part of or in any way affecting or relating to this Agreement, save as expressly set out in this Agreement and all Schedules attached to and forming part of this Agreement, and the other Agreement Documents, and that this Agreement and Schedules hereto and the remaining Agreement Documents constitute the entire Agreement between the Township, TRCA, and LSRCA. This Agreement supersede all previous agreements, arrangements or understandings between the parties, whether written or oral, in connection with or incidental to the Project except for the Existing Agreement between the parties. Each party acknowledges that no party is relying on any statement or representation made by any other which is not embodied in this Agreement.

Representatives and Notices. Any notice required or contemplated by any provision of this Agreement shall be given in writing and shall be deemed to be validly given if delivered at, or mailed by registered mail, in the case of the Township, to the following address to the attention of the following representative:

Township of King
2585 King Road, King City, Ontario L7B 1A1

Attention: Kyle Snell, Manager of Environmental Services

Phone: (905) 833-6568
Email: ksnell@king.ca

in the case of TRCA, to the following address, to the attention of the following representative:

Toronto and Region Conservation Authority
5 Shoreham Drive
Downsview, Ontario M3N 1S4

Attention: Steve Auger, Senior Manager

Phone: (437) 829-0296
Email: Steve.Auger@trca.ca

and in the case of LSRCA, to the following address, to the attention of the following representative

Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3

Attention: Dave Lembcke, Director, Environmental Science and Monitoring
Phone: (905) 955-1773
Email: D.Lembcke@lsrca.on.ca

All communications shall be given by or to the respective parties through the above individuals, provided that representatives of each party may be changed or substituted by notice to the other party of the name and address of the substitute representative. All notices shall be in writing and shall be sufficiently given if personally delivered or mailed by prepaid registered mail to the other party at the address shown above, in which case it shall be deemed to have been received on the 5th business day after it was mailed. Day-to-day communications may also be delivered by facsimile or electronic transmission at the fax number or email address, as the case may be, in which case they shall be deemed to have been received within 24 hours of transmission.

Force Majeure. A party hereto shall not be responsible for failures in performance resulting from events beyond the reasonable control of such party, including acts of God, riots or other civil insurrection, war, or strikes and lockouts.

Survival. Notwithstanding any provisions of the Agreement, the provisions of this Agreement shall survive completion or termination of this Agreement.

Amendments. No change to or modification of this Agreement or any other Agreement Documents, in whole or in part, shall be valid unless it is in writing and signed by TRCA, LSRCA, and the Township. Schedule B sets out the amendments to certain of the provisions of the Agreement, made as of the execution of this Agreement. Notwithstanding the provisions of any Agreement Documents, any amendment provided for in Schedule B shall apply.**IN WITNESS THEREOF** the parties hereto have caused to be executed these presents by their officers properly authorized in that behalf on the day and year first above written.

TOWNSHIP OF KING

Per: _____
Name:
Title:

Per: _____
Name:
Title:

I/We have authority to bind the Township.

TORONTO AND REGION CONSERVATION AUTHORITY

Per: _____
Name:
Title:

Per: _____
Name:
Title:

I/We have authority to bind the Corporation.

LAKE SIMCOE REGION
CONSERVATION AUTHORITY

Per: _____

Name:
Title:

Per: _____

Name:
Title:

I/We have authority to bind the Corporation.

Schedule A
Township of King Stormwater Management Inspection and Maintenance Prioritization

1.0 BACKGROUND

The Township's stormwater management system is comprised of various types of infrastructure to manage rainfall and snowmelt flows while protecting property and the natural environment. This includes 30 stormwater management ponds, hundreds of kilometers of sewers/ditches, and thousands of culverts and catch basins. Along with features that remove contaminants from runoff such as filtration trenches and oil and grit separators.

Many of these assets require maintenance including cleaning and rehabilitation for efficient and effective operation. Condition assessment studies have identified several critical maintenance needs including removal of sediment from the ponds and restoring areas around where storm sewers outlet to wetlands.

On January 10th, 2023, the Township of King ('the Township') received its Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) for the municipal stormwater management system. This approval is issued by the Ministry of Environment, Conservation and Parks (MECP) under the Environmental Protection Act to pre-authorize low-risk routine alterations to the system that may have previously required a full ECA application.

In support of MECP's implementation of the new O.Reg. 208/19, a template document including Schedules has been released to guide municipalities. There are several conditions within MECP's CLI ECA Schedule E: Operations and Maintenance (O&M) that require significant resources and expertise to deliver effectively. Specifically, Sections 3.1 – Inspection, 3.2.1 – O&M Manual, and 4.0 Monitoring Plan.

2.0 PURPOSE

The purpose of these works are to continue the partnership efforts to undertake the completion of requirements to support the Township's efforts to maintain compliance with the MECP CLI-ECA issued to the Township and stormwater management improvements at various sites throughout the Township's jurisdiction including the completion of designs, drawings and outlet cleanouts. These efforts are also focused on building capacity within the Township to continue these partnership efforts to maintain compliance after TRCA's and LSRCA's technical services are no longer needed and/or scaled down to support on-going technical resources still needed.

3.0 PROJECT SCOPE

Stormwater Management Program Inspection and Maintenance Prioritization

The following phases of the stormwater management program inspection and maintenance prioritization work as part of this agreement are proposed for the features identified in Table 1.

Project Management

Task PM.1: Meetings

Allow for three (3) meetings per year (2025 and 2026), totaling six (6) meetings. The maintenance charrettes will be conducted in person. All other partnership meetings will be conducted virtually, assuming up to 1 hr in duration for each. These meetings will be set for the following milestones:

- An **early spring start-up meeting** to support periodic Township and STEP on-site inspection coordination efforts.
- A **late spring season progress meeting** to discuss inspections and other field assessment progress including any notables.
- A **fall season** to review the close out of the inspections and field efforts; ad
- A '**maintenance prioritization charrette**' session in winter following the inspection and field season, including STEP and Town project staff, to review the maintenance prioritization summary to support the Town's Engineering (Capital) and O&M implementation planning efforts. A 3-hr session duration, along with appropriate preparation and follow-up efforts including the circulation of an agenda and meeting summary along with presentation materials will be incorporated into these charrette tasks' efforts.

Task PM.2: Communications

- When STEP is contacted by the Town, a member of the STEP's project team shall reply by end of the next business day. STEP assumes a similar response by Town staff to inquiries.
- It is anticipated that virtual Teams meetings will occur as requested to discuss milestone progress.

Task PM.3: Internal Coordination

- Internal STEP meetings for inspections will be needed periodically. The topics of these meetings may include Health and Safety preparations ahead of *in situ* efforts, on-going adherence to protocols, inventory management, and other project related discussions.

Phase 1 – Field and Desktop Assessments

For Phase 1, the specific scale of share effort between the Township and STEP is outlined in the summary sections for 2025 and 2026 below. The intent of this partnership approach for the next two years is to continue to build internal capacity within the Township to take on the inspections and annual update of maintenance prioritization (Phase 2).

The Phase 1 task details are also outlined below the summaries for 2025 and 2026 specifics.

2025

Inspections
The continuation of the annual inspections and associated field assessments of 25 wets SWM ponds, four dry ponds, one hybrid pond and seven LIDs features in a component of this work.

Field assessments
Field assessments performed by STEP will also continue including maintenance of water level monitoring infrastructure, hydraulic monitoring, identification of any invasive species, nuisance issues, etc.

STEP will look for opportunities with the Township to educate staff on hydraulic monitoring techniques through site visits and desktop sessions informing the data processing steps ad associated efforts.

Database Upkeep
STEP will continue to update inspection and maintenance prioritization records in the Citywide database. Opportunities to train Township staff on how to translate and record inspection and maintenance prioritization ranking within the Citywide database will occur during the site visits and periodic meetings scheduled.

2026

Inspections
Reduced the amount of inspection support further from STEP (TRCA), assuming the Township of King Tech needs us out to support 50% of the time.

Field assessments
Field assessments will also continue including maintenance of water level monitoring infrastructure, hydraulic monitoring, identification of any invasive species, nuisance issues, etc.

Database Upkeep
STEP will continue to update inspection and maintenance prioritization records in the Citywide database. Opportunities to train Township staff on how to translate and record inspection and maintenance prioritization ranking within the Citywide database will occur during the site visits and periodic meetings scheduled.

Phase 1 Task details

Task 1.1: Inspections

- Preparation for inspections will occur via inspection Work Orders for each site and associated SWM feature(s). It is important this information is packaged and

conveyed appropriately to the inspection team before each site visit, respecting how every visit needs to be considered a true re-assessment while still reflecting on what we know from past inspections and other investigations.

- One inspection for each conventional SWM and LID feature will occur for this project in both 2025 and 2026. The level of collaborative effort from STEP working with the Township to build internal capacity for these inspections is outlined in more detail above.
- Inspections will be recorded in the Maintenance Manager Module within the Citywide database, via tablet mobile devices along with QA/QC of observations and notables flagged post inspection.
- Where feasible, STEP will provide some minor regular maintenance activities as part of these site investigations, including debris and sediment clean-out at accessible inlets that may cause adverse impacts on the SWM feature's functionality providing there are no health and safety concerns. If maintenance issues are determined to be unsafe or too laborious, this will be flagged in the inspection report and included in the prioritization and identification of maintenance needs.
- STEP will flag early signs of invasives, including phragmites concerns. These efforts will prompt the Town to act early when mitigation measures are more manageable (e.g., localized phragmites concern identified for the first time at a SWM feature, where herbicide treatment on a few shoots is more manageable).
- High-level ecological assessments, vegetation status and maintenance requirements will be also provided.

Task 1.2: Sediment Accumulation Assessments – Review and Processing

Currently the Town is responsible for 26 wet ponds or wetlands/hybrid facilities. Considering the recent sediment accumulation assessment work performed by consultants for the Town in 2022- 2023, STEP proposes to review all 26 recently performed wet SWM features sediment accumulation estimates to translate consultants' estimations to percentage full of permanent volume stated in the CLI ECA. These assessments will also support the overall maintenance prioritization for the wet SWM pond features as part of the pilot scope (Section 0).

If deemed necessary by both the Town and STEP project team, additional bathymetric surveys and sediment accumulations will be considered. STEP's approach for complete re-assessment of sedimentation accumulation assessments is outlined in more detail below. Associated cost estimates per wet SWM feature are also outlined in Table in Section **Error! Reference source not found.** further below.

STEP's Wet SWM Pond Sediment Accumulation Assessment

Wet ponds and wetland / hybrid facilities are designed to capture and accumulate sediment and therefore must be periodically assessed for sediment accumulation. Utilizing a SonTek M9 HydroSurveyor or equivalent, a high-resolution survey of the facility will be conducted to generate a CAD file of pond bathymetry and volume. Manual survey rod methods may be used in instances where there are obstructions or concerns about the accuracy of sonar methods. Survey results provided in digital form and as CAD drawings will be compared to design drawings or design criteria to determine the level of performance of the facility, sediment accumulation and priority for sediment removal. The detail captured through these surveys will also allow for discrete sediment accumulation / volume measurements of the forebay from main basin to identify trouble areas or further refine maintenance activities.

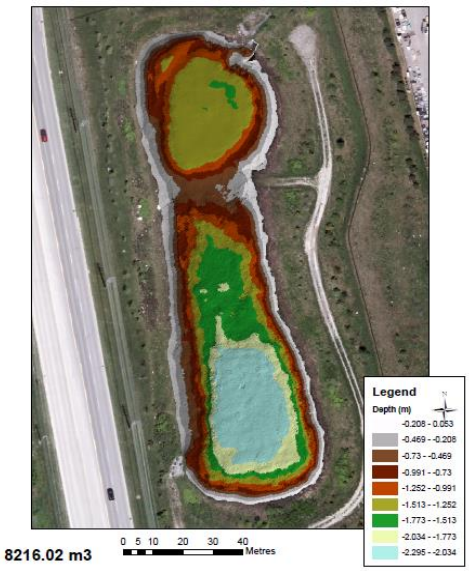

Figure 1 - Example of stormwater pond bathymetry layer

For the wet features identified:

- Surveys will be conducted in spring prior to aquatic plant growth to minimize interference and generate an accurate pond volume (approximately April to May).
- Surveys will also be collected during dry periods (~48 hours after a rain event) to accurately assess current functional pool volume. As some facilities may be over- or under-sized an accurate assessment of current functional pond volume will better inform maintenance prioritization.
- Measured pond volumes will be compared with design volumes to prioritize facilities for further sediment sampling and assessment.

- Pond volume and bathymetric map will be produced, incorporated in a final annual Tech Memorandum, and uploaded to the Citywide database within the appropriate Asset Manager Module location associated with the wet SWM feature.

Sediment sampling and coring to determine sediment volume and quality for removal will be performed as part of a future phase in preparation for tendering and removal efforts. Comparing estimated pond volumes based on bathymetry results to design may not give us the actual sediment volume, so an additional step of measuring sediment would be needed. The estimated volume based on bathymetric results will be sufficient to support the prioritization of maintenance efforts outlined in Phase 2, Task 2.1,if deemed needed to compliment work already performed by consultants.

STEP has provided a provisional item (No. 1) cost estimate (See Table in Section **Error! Reference source not found.**) per wet SWM feature bathymetric surveys for consideration if any additional bathymetric surveys and associated sediment accumulation assessments are warranted. The additional efforts would be of value for any wet SWM features the Town is scheduled to assume in 2025 to 2026.

If the Town and STEP decide additional sediment accumulation assessments need to be performed beyond the proposed 26 wet SWM features identified for this 2025 to 2026 service level agreement, this additional assessment activity may be exercised on a feature-by-feature basis.

Dry Pond Sediment Accumulation Assessment

While dry ponds are not designed to accumulate sediment, over time deposition can occur to the extent that performance of the facility could be impacted and therefore must also be assessed for accumulation. The Town currently operates 4 dry facilities.

- Sediment accumulation at the inlet and outlet structures of dry facilities will be assessed during the pond inspection process. Removal of excessive sediment at these features will be identified in the maintenance recommendations.
- During inspections should there be evidence of excessive accumulation the depth of sediment in the facility will be assessed. Using our GPS unit, we would take a vertical survey to compare to the best plan view drawing available with reasonable accuracy (e.g., as-built, issued for construction). If this comparison is not feasible, we could also core to the native soil or clay liner at a representative number of locations throughout the facility to determine sediment depth and volume.

STEP has also provided a provisional (item No. 2) cost estimate (See Table in Section **Error! Reference source not found.**) per dry SWM feature sediment accumulation assessments if more assessment is recommended and approved.

LID Sites Sediment Accumulation Assessment

LID features are designed to capture and retain sediment, trash, and debris, as well as provide infiltration and retention of stormwater. Sediment capture is often achieved through pre-treatment devices and at inlets of the LID features.

If these components are not inspected and maintained on an annual basis (at minimum), sediment and debris may be transported into other components of the LID (e.g., filter bed) leading to drainage and water quality treatment issues. Therefore, assessments of sediment accumulation at each LID feature will be performed.

The Town is responsible for seven LID SWM features, ranging in land use application and scale. The following activities outline the sediment accumulation assessment efforts for the LIDs.

- Sediment accumulation at the inlet, surface treatment (if applicable), and outlet structures of LIDs will be estimated during the inspection process. Any required removal of excessive sediment at these features will be identified in the maintenance recommendations.
- During inspections should there be evidence of excessive accumulation in safely accessible components of the LID, the depth(s) of sediment in these areas will be measured to provide a more accurate estimate of accumulation.

Task 1.3: Hydraulic Monitoring

Water Level Measurements and Outlet Assessments

A comprehensive Stormwater Inspection and Maintenance program needs to assess draw down time and hydraulic function of all wet ponds, with particular consideration for bottom draw facilities. Hydraulic function can be assessed through the installation of a permanent staff gauge and assessment of draw down time following rain events. Ponds that do not return to the normal water level within the prescribed 24 to 48-hour window likely have a drainage issue or issue with hydraulic function. Continuous water level monitoring using water level loggers provides a more detailed assessment of draw down times. As part of the 2025 and 2026 I&M program, 7 level loggers and one 1 barometric logger will be deployed to assess hydraulic function. These loggers will be installed in consultation with the Town in ponds identified as priority to be assessed in 2025 and 2026. The 8 loggers purchased will belong to the Town and remain available to move to other wet SWM pond features for hydraulic assessments in future years.

The Town has 26 wet SWM features requiring water level monitoring. A bottom draw outlet is designed to allow the cooler bottom water of a pond to outlet to the receiving watercourse to mitigate thermal impacts. As a result, they are susceptible to blockage due to debris accumulation, animal activity or being buried by sediment. This can lead to slower drainage resulting in drowning of edge vegetation, increased erosion, or bypassing. In cases of complete blockage this can result in failures of additional pond infrastructure such as berms or high flow channels.

A comprehensive Stormwater Inspection and Maintenance program needs to consider a method of assessing the function of bottom draw outlets in stormwater ponds. By their nature bottom draw outlets are difficult to inspect as the bulk of the critical infrastructure is underwater, typically at the deepest point of the facility. Thus, an actual inspection requires either draining the facility or inspecting with a CCTV camera. Both are expensive and time consuming and provide a single status assessment. Bottom draw testing can also be completed through hydraulic assessment and will be incorporated in this project. Ponds that do not return to the normal water level within the prescribed 24 to 48-hour window can be assumed to have some issue with drainage through the bottom draw structure.

- Water level monitoring will involve the installation of a benchmark, either staff gauge or surveyed hard point, to allow consistent manual water level measurement at all 26 wet ponds.
- Seven water level loggers will be installed to assess pond draw down times and identify potential issues with hydraulic function. Loggers may be rotated between all 26 wet ponds, subject to suitability and priority based on inspections. This rotation schedule for the loggers could be continued for approximately 5 years, after which they will need service and battery replacement.
- Loggers will be downloaded monthly and a manual water level collected.
- Any ponds identified with hydraulic / drainage issues will be assessed on a case-by-case basis with recommendations for investigation depending on the severity of the impairment.
- Water level measurements in infiltration trenches will be made during site inspections where feasible, to identify potential issues with hydraulic function.

Task 1.4: Update Database, Translation to CLI ECA

STEP will continue to use the Citywide database for the project efforts, as outlined in more detail below.

Inspection Work Orders

- Inspection and maintenance results will be logged into the Lake Simcoe watershed Citywide database, in preparation for uploading summary information to the Town's database. Within Citywide, security restrictions for Municipalities to access their SWM information only. STEP has provided Town staff with a CityWide username and password for access. Additional Town user accounts can be created upon request.

Inventory Upkeep

- Information to be updated in Citywide, may include the following:
    - Update the SWM inventory and overall condition assessment for all core elements of each SWM facility (ponds and LIDs), based on inspection results.

- Update the SWM inventory with additional assessment results (incl. sediment accumulation, bottom-draw, where applicable) following completion of these additional efforts.
- Inspection and assessment photos.
- Update GIS database fields where possible.
- Identify and document new deficiencies and update previously identified deficiencies.

CLI ECA Translation
STEP will recommend updates to technical descriptions of SWM features based on inspection results and any maintenance or repairs to support the Town's SWM component of the CLI ECA.

Task 1.5: GIS Integration
GIS integration efforts with Citywide will include the following:

- Any changes to existing facilities based on the inspections.
- Documentation of new deficiencies and update of previously identified deficiencies.

The GIS layer will be joined with the database, which will house inspection results including photos. The initial inventory layer will be provided by the Town in ESRI compatible format (GDB or SHAREFILE). Updated information will be provided by STEP to Town in ESRI compatible format (GDB or SHAREFILE). All documentation and images will reference the unique ID within the database.

Phase 2 – Identification of Maintenance Priorities, Reporting, Operations and Maintenance Manual

The specific scale of share effort between the Township and STEP is outlined in the summary sections for 2025 and 2026 below in similar fashion to Phase 1 intention to build internal capacity within the Township in the next two years to take on more of the maintenance prioritization and annual reporting (Phase 2).

The Phase 2 task details are also outlined below the summaries for 2025 and 2026 specifics.

2025

Tech Brief
A technical brief will also be prepared by STEP to review maintenance prioritization including any updated changes required.

O&M Manual
STEP will address initial Township comments on the draft Operations and Maintenance Manual for King's SWM system and support continued efforts on the O&M Manual development as a component of this work.

2026

Removed any annual I&M Report development effort, assuming the Township will take on these annual documentation efforts using past annual reports as reference.

STEP will still work with Town to update the Appendix Tables A-1 to A-3 maintenance prioritization rankings.

STEP has not included any additional time and resource to be spend on the System-wide SWM O&M Manual, assuming continued efforts in 2025 will reach a final version 1.0 the Township will implement and continue to update periodically.

Phase 2 Task details

Task 2.1: Prioritization and Identification of Needs

- From completed facility inspections, condition assessments, sediment accumulation and hydraulic outlet assessments, all SWM Maintenance Prioritization assessments will be prepared.
- The prioritization will also flag any potential CLI ECA compliance issues for each SWM feature to further prioritize actions to address any compliance issues.
- Facilities at risk of imminent failure such as a critical structural failure will be highlighted and if multiple instances exist, these will also be prioritized.
- Prioritization results will be included in the Town's database and summarized in an annual technical memorandum that will include updated summary maintenance prioritization tables.
- For LID sites, a basic priority ranking system will be applied to convey immediate, near-term, or longer-term recommendations for maintenance and/or repairs.

Task 2.2: Reporting

A content summary highlighting reporting themes is included in **Error! Reference source not found.** below. Linkages with the Town's relevant draft CLI ECA (Schedule E) requirements are also provided in this table, including how this project report addresses the Town's O&M manual requirements.

Technical Report

A final report will summarize technical results and maintenance needs from 2025 SWM inspection and maintenance prioritization project. The Township will take over annual reporting in 2026.

O&M Manual

A 'Stormwater Infrastructure Management, Operations and Maintenance Manual' will be prepared for the Town to ensure the criteria needed to address the CLI ECA O&M manual requirements are met. This effort by STEP will involve direct engagement with the Town to ensure any updates to the O&M Manual are feasible and acceptable before finalization.

Table 1: Town of King SWM features identified for Inspection and Maintenance

SWM FEATURE TYPE	COUNT [1.]
Wet Ponds [2., 3.]	25
Dry Ponds	4
Wetlands [2., 3.]	0
Hybrid Ponds [2., 3.]	1
LIDs	20
Total	**50**

Notes:

1. There are currently 25 wet SWM ponds, 4 dry SWM ponds, 1 hybrid SWM pond, 20 LIDs (3 underground infiltration chamber components,15 infiltration trenches / soakaway pits, 2 bioretention / infiltration trenches) accounted for in the Citywide database for the Town.

2. It should be noted the Town has also identified several unassumed wet SWM ponds, oil-grit separators, along with the lengths of foundation drain and other stormwater conveyance systems. These stormwater features are not included in the proposed inspection and maintenance scope for 2025 and 2026.

3. Conduct 7 hydraulic function assessments for prioritized wet SWM features identified by both Town and STEP based on recent years observations including any past notable concerns requiring further assessment.

This Table 1 does not include any additional SWM features that will be assumed by the municipality in 2025 to 2026.

4.0 PROJECT TEAM

The following Table 2 outlines the key TRCA and LSRCA project team members.

TRCA project management efforts will ensure the scope of work, schedule, technical direction, and the Township's expectations are addressed. TRCA and LSRCA will also ensure adherence to the Township, TRCA, and LSRCA Health and Safety and communication protocols. The project team members involved may change at the discretion of the TRCA and LSRCA, with acceptance from the Township.

Table 2: Project Team

STAFF	ROLES & RESPONSIBILITIES
Stormwater Management Program Inspection and Maintenance Prioritization	
Steve Auger (Senior Manager)	• Overall inspection and maintenance prioritization project direction and oversight • Quality assurance and control
Christy Graham (Project Manager)	• Overseeing inspections and other assessments needed for maintenance prioritization ranking
Steven Andrachuk (Assistant Project Manager)	• Assistance to coordinating and leading inspections along with other assessment for maintenance prioritization ranking
David Lembcke (Technical Advisor and Monitoring Specialist)	• Directing various field components, and translating field efforts to maintenance prioritization needs.
Sheida Moin (SWM Coordinator)	• Technical specialist and additional coordination resource for field investigations.

5.0 MILESTONE SCHEDULE

Table 3: Seasonal Milestone Schedule and Deliverables – Q1 2025 to Q1 2027

DATE	DESCRIPTION OF ACTIVITY	PHASE & TASK	DELIVERABLE
Stormwater Management Program Inspection and Maintenance Prioritization			
Early May - September 2025, 2026	▪ Inspections (each SWM feature) ▪ Water Level Measurement ▪ Bottom-Draw Assessments on-going ▪ Inventory Updates in Citywide (as required)	PM.1 - PM.3 1.1, 1.3	▪ Database SWM feature updates ▪ GIS layer updates
October – January 2025, 2026	**Reporting incl. Summary Tables Updates** ▪ Maintenance Prioritization Summary Tables updates ▪ Technical Report / O&M Manual ▪ Meeting to Discuss Tech. Report / O&M Manual, incl. any initial Qs regarding maintenance prioritization, translation to CLI ECA, etc.	PM.1 - PM.3 2.1, 2.2	▪ Draft Technical Memo ▪ Review Comments tracking document ▪ Technical Report ▪ Meeting Summary
January - February	**Maintenance Prioritization Charrette** ▪ Review recommendations ▪ Support development / refinement of implementation plans	PM.1 2.1-2.2	▪ Meeting Summary

6.0 BUDGET

The total cost for the continuation of the technical services for SWM inspection and maintenance prioritization is **$170,023.40** (excluding HST), comprised of the following subtotals for Phases 1 to 2 in 2025 ($95,369.44) and 2026 ($75,986.82), with more details included in Tables 4 and 5.

Table 4: 2025 Budget Upset Limits for Phases 1 and 2 - Stormwater Program Inspection and Maintenance Prioritization Project Technical Services

ITEM	COST
Project Management ▪ PM.1: Meetings (Summaries, incl. Maintenance Charrette) ▪ PM.2: Communications ▪ PM.3: Internal Coordination	$16,435.86
Phase 1 ▪ Phase 1.1: Inspections (incl. prep., work orders completed) ▪ Phase 1.2: Sediment Accumulation Assessments (Continued efforts for Translations to percentage of permanent pool) ▪ Phase 1.3: Hydraulic Assessments ▪ Phase 1.4: Update Database ▪ Phase 1.5: GIS integration	$ 42,862.12
Phase 2 ▪ Phase 2.1: Prioritization and Identification of Needs ▪ Phase 2.2: Reporting (Technical Report and O&M Manual)	$19,807.01
Full Cost Model - Subtotal	$79,104.99
20% Contingency (Support continued Field Assessment support incl. Sediment Accumulation translation)	$15,821.00
Full Cost Model - Subtotal (with Contingency)	$94,925.98
Corporate Surcharge 5%	$4,746.30
Revised Subtotal (Excl HST)	**$99,672.28**
HST 13%	$12,957.40
Revised Subtotal	$112,629.68
HST Rebate -11.24%	$12,659.58
TOTAL (2025, Phases 1 and 2)	**$99,970.10**

Notes:

1. Considering all 26 wet and 4 dry SWM features along with 7 LIDs will be visited by a team of two CA staff.
2. Phase 1.3 includes 26 staff gauges, posts and hardware for install, along with 7 level loggers and 1 baro. logger purchased.
3. Schedule B outlines the shared budget between TRCA and LSRCA in detail.
4. All field assessment equipment purchases will be incorporated in milestone invoicing from TRCA.

Table 4: 2025 Budget Upset Limits for Phases 1 and 2 - Stormwater Program Inspection and Maintenance Prioritization Project Technical Services (continued)

Provisional Items	
Future Phase – Receiving Monitoring	TBD
Provisional Item No. 1 – Sediment Accumulation Assessment per wet SWM Feature	$1,862
Provisional Item No. 2 – Sediment Accumulation Assessment per dry SWM Feature	$1,705
Provisional Item No. 3 – Additional Inspection per SWM Feature	$569

Table 5: 2026 Budget Upset Limits for Phases 1 and 2 - Stormwater Program Inspection and Maintenance Prioritization Project Technical Services

ITEM	**COST**
Project Management ▪ PM.1: Meetings (Summaries, incl. Maintenance Charrette) ▪ PM.2: Communications ▪ PM.3: Internal Coordination	$15,076.44
Phase 1 ▪ Phase 1.1: Inspections (incl. prep., work orders completed) ▪ Phase 1.2: Sediment Accumulation Assessments (Continued efforts for Translations to percentage of permanent pool) ▪ Phase 1.3: Hydraulic Assessments ▪ Phase 1.4: Update Database ▪ Phase 1.5: GIS integration	$33,312.33
Phase 2 ▪ Phase 2.1: Prioritization and Identification of Needs ▪ Phase 2.2: Reporting (Limited to Tables A-1 to A-3 updates)	$7,445.44
Full Cost Model - Subtotal	$55,834.22
20% Contingency (Support continued Field Assessment support incl. Sediment Accumulation translation)	$11,166.84
Full Cost Model - Subtotal (with Contingency)	$67,001.06
Corporate Surcharge 5%	$3,350.05
Revised Subtotal (Excl HST)	**$70,351.12**
HST 13%	$9,145.65
Revised Subtotal	$79,496.76
HST Rebate -11.24%	$8,935.44
TOTAL (2026, Phases 1 and 2)	**$70,561.33**

Notes:

1. Considering all 26 wet and 4 dry SWM features along with 20 LIDs will be visited by a team of two CA staff.
2. Phase 1.3 includes 26 staff gauges, posts and hardware for install, along with 7 level loggers and 1 baro. logger purchased.
3. Schedule B outlines the shared budget between TRCA and LSRCA in detail.
4. All field assessment equipment purchases will be incorporated in milestone invoicing from TRCA.

Table 5: 2026 Budget Upset Limits for Phases 1 and 2 - Stormwater Program Inspection and Maintenance Prioritization Project Technical Services (continued)

Provisional Items	
Future Phase – Receiving Monitoring	TBD
Provisional Item No. 1 – Sediment Accumulation Assessment per wet SWM Feature	$1,899
Provisional Item No. 2 – Sediment Accumulation Assessment per dry SWM Feature	$1,739
Provisional Item No. 3 – Additional Inspection per SWM Feature	$580

Total cost: **$170,531.43 (Including Non-refundable HST)**

7.0 PAYMENT SCHEDULE

The 2025 and 2026 technical services that support activities associated with the inspection, maintenance prioritization, and restoration efforts undertaken by TRCA and LSRCA will be invoiced to the Township on a semi-annual basis in accordance with TRCA's pay periods, timelines, payment and other schedules and benchmarks set out in Schedule A. A final invoice accounting for the difference between the credited amount and actual service efforts from TRCA and LSRCA will be issued at the appropriate time by early Q1 2027 after the project is complete.

This upfront payment will be distributed between TRCA and LSRCA in accordance with the technical services and other expenses distributed between these two parties, as outlined in Schedules A and B.

8.0 LIMITATIONS AND ASSUMPTIONS FOR PROFESSIONAL SERVICES AGREEMENT

The proposed STEP SWM technical services are based on the following limitations and assumptions:

SWM Features

i. STEP working with the Town through these comprehensive technical services focused on SWM features within the Lake Simcoe and Toronto Region watersheds only (see

ii. **Project Management**

Task PM.1: Meetings

Allow for three (3) meetings per year (2025 and 2026), totaling six (6) meetings. The maintenance charrettes will be conducted in person. All other partnership meetings will be conducted virtually, assuming up to 1 hr in duration for each. These meetings will be set for the following milestones:

- An **early spring start-up meeting** to support periodic Township and STEP on-site inspection coordination efforts.
- A **late spring season progress meeting** to discuss inspections and other field assessment progress including any notables.
- A **fall season** to review the close out of the inspections and field efforts; ad
- A '**maintenance prioritization charrette**' session in winter following the inspection and field season, including STEP and Town project staff, to review the maintenance prioritization summary to support the Town's Engineering (Capital) and O&M implementation planning efforts. A 3-hr session duration, along with appropriate preparation and follow-up efforts including the circulation of an agenda and meeting summary along with presentation materials will be incorporated into these charrette tasks' efforts.

Task PM.2: Communications

- When STEP is contacted by the Town, a member of the STEP's project team shall reply by end of the next business day. STEP assumes a similar response by Town staff to inquiries.
- It is anticipated that virtual Teams meetings will occur as requested to discuss milestone progress.

Task PM.3: Internal Coordination

- Internal STEP meetings for inspections will be needed periodically. The topics of these meetings may include Health and Safety preparations ahead of *in situ* efforts, on-going adherence to protocols, inventory management, and other project related discussions.

Phase 1 – Field and Desktop Assessments

For Phase 1, the specific scale of share effort between the Township and STEP is outlined in the summary sections for 2025 and 2026 below. The intent of this partnership approach for the next two years is to continue to build internal capacity

within the Township to take on the inspections and annual update of maintenance prioritization (Phase 2).

The Phase 1 task details are also outlined below the summaries for 2025 and 2026 specifics.

2025

Inspections
The continuation of the annual inspections and associated field assessments of 25 wets SWM ponds, four dry ponds, one hybrid pond and seven LIDs features in a component of this work.

Field assessments
Field assessments performed by STEP will also continue including maintenance of water level monitoring infrastructure, hydraulic monitoring, identification of any invasive species, nuisance issues, etc.

STEP will look for opportunities with the Township to educate staff on hydraulic monitoring techniques through site visits and desktop sessions informing the data processing steps ad associated efforts.

Database Upkeep
STEP will continue to update inspection and maintenance prioritization records in the Citywide database. Opportunities to train Township staff on how to translate and record inspection and maintenance prioritization ranking within the Citywide database will occur during the site visits and periodic meetings scheduled.

2026

Inspections
Reduced the amount of inspection support further from STEP (TRCA), assuming the Township of King Tech needs us out to support 50% of the time.

Field assessments
Field assessments will also continue including maintenance of water level monitoring infrastructure, hydraulic monitoring, identification of any invasive species, nuisance issues, etc.

Database Upkeep
STEP will continue to update inspection and maintenance prioritization records in the Citywide database. Opportunities to train Township staff on how to translate and record inspection and maintenance prioritization ranking within the Citywide database will occur during the site visits and periodic meetings scheduled.

Phase 1 Task details

Task 1.1: Inspections

- Preparation for inspections will occur via inspection Work Orders for each site and associated SWM feature(s). It is important this information is packaged and conveyed appropriately to the inspection team before each site visit, respecting how every visit needs to be considered a true re-assessment while still reflecting on what we know from past inspections and other investigations.
- One inspection for each conventional SWM and LID feature will occur for this project in both 2025 and 2026. The level of collaborative effort from STEP working with the Township to build internal capacity for these inspections is outlined in more detail above.
- Inspections will be recorded in the Maintenance Manager Module within the Citywide database, via tablet mobile devices along with QA/QC of observations and notables flagged post inspection.
- Where feasible, STEP will provide some minor regular maintenance activities as part of these site investigations, including debris and sediment clean-out at accessible inlets that may cause adverse impacts on the SWM feature's functionality providing there are no health and safety concerns. If maintenance issues are determined to be unsafe or too laborious, this will be flagged in the inspection report and included in the prioritization and identification of maintenance needs.
- STEP will flag early signs of invasives, including phragmites concerns. These efforts will prompt the Town to act early when mitigation measures are more manageable (e.g., localized phragmites concern identified for the first time at a SWM feature, where herbicide treatment on a few shoots is more manageable).
- High-level ecological assessments, vegetation status and maintenance requirements will be also provided.

Task 1.2: Sediment Accumulation Assessments – Review and Processing

Currently the Town is responsible for 26 wet ponds or wetlands/hybrid facilities. Considering the recent sediment accumulation assessment work performed by consultants for the Town in 2022- 2023, STEP proposes to review all 26 recently performed wet SWM features sediment accumulation estimates to translate consultants' estimations to percentage full of permanent volume stated in the CLI ECA. These assessments will also support the overall maintenance prioritization for the wet SWM pond features as part of the pilot scope (Section 0).

If deemed necessary by both the Town and STEP project team, additional bathymetric surveys and sediment accumulations will be considered. STEP's approach for complete re-assessment of sedimentation accumulation assessments is outlined in more detail below. Associated cost estimates per wet SWM feature are also outlined in Table in Section **Error! Reference source not found.** further below.

STEP's Wet SWM Pond Sediment Accumulation Assessment

Wet ponds and wetland / hybrid facilities are designed to capture and accumulate sediment and therefore must be periodically assessed for sediment accumulation. Utilizing a SonTek M9 HydroSurveyor or equivalent, a high-resolution survey of the facility will be conducted to generate a CAD file of pond bathymetry and volume. Manual survey rod methods may be used in instances where there are obstructions or concerns about the accuracy of sonar methods. Survey results provided in digital form and as CAD drawings will be compared to design drawings or design criteria to determine the level of performance of the facility, sediment accumulation and priority for sediment removal. The detail captured through these surveys will also allow for discrete sediment accumulation / volume measurements of the forebay from main basin to identify trouble areas or further refine maintenance activities.

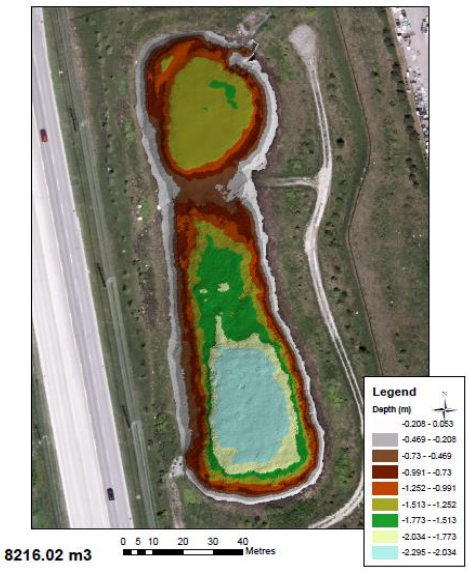

Figure 1 - Example of stormwater pond bathymetry layer

For the wet features identified:

- Surveys will be conducted in spring prior to aquatic plant growth to minimize interference and generate an accurate pond volume (approximately April to May).
- Surveys will also be collected during dry periods (~48 hours after a rain event) to accurately assess current functional pool volume. As some facilities may be over- or under-sized an accurate assessment of current functional pond volume will better inform maintenance prioritization.
- Measured pond volumes will be compared with design volumes to prioritize facilities for further sediment sampling and assessment.

- Pond volume and bathymetric map will be produced, incorporated in a final annual Tech Memorandum, and uploaded to the Citywide database within the appropriate Asset Manager Module location associated with the wet SWM feature.

Sediment sampling and coring to determine sediment volume and quality for removal will be performed as part of a future phase in preparation for tendering and removal efforts. Comparing estimated pond volumes based on bathymetry results to design may not give us the actual sediment volume, so an additional step of measuring sediment would be needed. The estimated volume based on bathymetric results will be sufficient to support the prioritization of maintenance efforts outlined in Phase 2, Task 2.1,if deemed needed to compliment work already performed by consultants.

STEP has provided a provisional item (No. 1) cost estimate (See Table in Section **Error! Reference source not found.**) per wet SWM feature bathymetric surveys for consideration if any additional bathymetric surveys and associated sediment accumulation assessments are warranted. The additional efforts would be of value for any wet SWM features the Town is scheduled to assume in 2025 to 2026.

If the Town and STEP decide additional sediment accumulation assessments need to be performed beyond the proposed 26 wet SWM features identified for this 2025 to 2026 service level agreement, this additional assessment activity may be exercised on a feature-by-feature basis.

Dry Pond Sediment Accumulation Assessment

While dry ponds are not designed to accumulate sediment, over time deposition can occur to the extent that performance of the facility could be impacted and therefore must also be assessed for accumulation. The Town currently operates 4 dry facilities.

- Sediment accumulation at the inlet and outlet structures of dry facilities will be assessed during the pond inspection process. Removal of excessive sediment at these features will be identified in the maintenance recommendations.
- During inspections should there be evidence of excessive accumulation the depth of sediment in the facility will be assessed. Using our GPS unit, we would take a vertical survey to compare to the best plan view drawing available with reasonable accuracy (e.g., as-built, issued for construction). If this comparison is not feasible, we could also core to the native soil or clay liner at a representative number of locations throughout the facility to determine sediment depth and volume.

STEP has also provided a provisional (item No. 2) cost estimate (See Table in Section **Error! Reference source not found.**) per dry SWM feature sediment accumulation assessments if more assessment is recommended and approved.

LID Sites Sediment Accumulation Assessment

LID features are designed to capture and retain sediment, trash, and debris, as well as provide infiltration and retention of stormwater. Sediment capture is often achieved through pre-treatment devices and at inlets of the LID features.

If these components are not inspected and maintained on an annual basis (at minimum), sediment and debris may be transported into other components of the LID (e.g., filter bed) leading to drainage and water quality treatment issues. Therefore, assessments of sediment accumulation at each LID feature will be performed.

The Town is responsible for seven LID SWM features, ranging in land use application and scale. The following activities outline the sediment accumulation assessment efforts for the LIDs.

- Sediment accumulation at the inlet, surface treatment (if applicable), and outlet structures of LIDs will be estimated during the inspection process. Any required removal of excessive sediment at these features will be identified in the maintenance recommendations.
- During inspections should there be evidence of excessive accumulation in safely accessible components of the LID, the depth(s) of sediment in these areas will be measured to provide a more accurate estimate of accumulation.

Task 1.3: Hydraulic Monitoring

Water Level Measurements and Outlet Assessments

A comprehensive Stormwater Inspection and Maintenance program needs to assess draw down time and hydraulic function of all wet ponds, with particular consideration for bottom draw facilities. Hydraulic function can be assessed through the installation of a permanent staff gauge and assessment of draw down time following rain events. Ponds that do not return to the normal water level within the prescribed 24 to 48-hour window likely have a drainage issue or issue with hydraulic function. Continuous water level monitoring using water level loggers provides a more detailed assessment of draw down times. As part of the 2025 and 2026 I&M program, 7 level loggers and one 1 barometric logger will be deployed to assess hydraulic function. These loggers will be installed in consultation with the Town in ponds identified as priority to be assessed in 2025 and 2026. The 8 loggers purchased will belong to the Town and remain available to move to other wet SWM pond features for hydraulic assessments in future years.

The Town has 26 wet SWM features requiring water level monitoring. A bottom draw outlet is designed to allow the cooler bottom water of a pond to outlet to the receiving watercourse to mitigate thermal impacts. As a result, they are susceptible to blockage due to debris accumulation, animal activity or being buried by sediment. This can lead to slower drainage resulting in drowning of edge vegetation, increased erosion, or bypassing. In cases of complete blockage this can result in failures of additional pond infrastructure such as berms or high flow channels.

A comprehensive Stormwater Inspection and Maintenance program needs to consider a method of assessing the function of bottom draw outlets in stormwater ponds. By their nature bottom draw outlets are difficult to inspect as the bulk of the critical infrastructure is underwater, typically at the deepest point of the facility. Thus, an actual inspection requires either draining the facility or inspecting with a CCTV camera. Both are expensive and time consuming and provide a single status assessment. Bottom draw testing can also be completed through hydraulic assessment and will be incorporated in this project. Ponds that do not return to the normal water level within the prescribed 24 to 48-hour window can be assumed to have some issue with drainage through the bottom draw structure.

- Water level monitoring will involve the installation of a benchmark, either staff gauge or surveyed hard point, to allow consistent manual water level measurement at all 26 wet ponds.
- Seven water level loggers will be installed to assess pond draw down times and identify potential issues with hydraulic function. Loggers may be rotated between all 26 wet ponds, subject to suitability and priority based on inspections. This rotation schedule for the loggers could be continued for approximately 5 years, after which they will need service and battery replacement.
- Loggers will be downloaded monthly and a manual water level collected.
- Any ponds identified with hydraulic / drainage issues will be assessed on a case-by-case basis with recommendations for investigation depending on the severity of the impairment.
- Water level measurements in infiltration trenches will be made during site inspections where feasible, to identify potential issues with hydraulic function.

Task 1.4: Update Database, Translation to CLI ECA

STEP will continue to use the Citywide database for the project efforts, as outlined in more detail below.

Inspection Work Orders

- Inspection and maintenance results will be logged into the Lake Simcoe watershed Citywide database, in preparation for uploading summary information to the Town's database. Within Citywide, security restrictions for Municipalities to access their SWM information only. STEP has provided Town staff with a CityWide username and password for access. Additional Town user accounts can be created upon request.

Inventory Upkeep

- Information to be updated in Citywide, may include the following:
    - Update the SWM inventory and overall condition assessment for all core elements of each SWM facility (ponds and LIDs), based on inspection results.

- Update the SWM inventory with additional assessment results (incl. sediment accumulation, bottom-draw, where applicable) following completion of these additional efforts.
- Inspection and assessment photos.
- Update GIS database fields where possible.
- Identify and document new deficiencies and update previously identified deficiencies.

CLI ECA Translation
STEP will recommend updates to technical descriptions of SWM features based on inspection results and any maintenance or repairs to support the Town's SWM component of the CLI ECA.

Task 1.5: GIS Integration
GIS integration efforts with Citywide will include the following:

- Any changes to existing facilities based on the inspections.
- Documentation of new deficiencies and update of previously identified deficiencies.

The GIS layer will be joined with the database, which will house inspection results including photos. The initial inventory layer will be provided by the Town in ESRI compatible format (GDB or SHAREFILE). Updated information will be provided by STEP to Town in ESRI compatible format (GDB or SHAREFILE). All documentation and images will reference the unique ID within the database.

Phase 2 – Identification of Maintenance Priorities, Reporting, Operations and Maintenance Manual

The specific scale of share effort between the Township and STEP is outlined in the summary sections for 2025 and 2026 below in similar fashion to Phase 1 intention to build internal capacity within the Township in the next two years to take on more of the maintenance prioritization and annual reporting (Phase 2).

The Phase 2 task details are also outlined below the summaries for 2025 and 2026 specifics.

2025

Tech Brief
A technical brief will also be prepared by STEP to review maintenance prioritization including any updated changes required.

O&M Manual
STEP will address initial Township comments on the draft Operations and Maintenance Manual for King's SWM system and support continued efforts on the O&M Manual development as a component of this work.

2026

Removed any annual I&M Report development effort, assuming the Township will take on these annual documentation efforts using past annual reports as reference.

STEP will still work with Town to update the Appendix Tables A-1 to A-3 maintenance prioritization rankings.

STEP has not included any additional time and resource to be spend on the System-wide SWM O&M Manual, assuming continued efforts in 2025 will reach a final version 1.0 the Township will implement and continue to update periodically.

Phase 2 Task details

Task 2.1: Prioritization and Identification of Needs

- From completed facility inspections, condition assessments, sediment accumulation and hydraulic outlet assessments, all SWM Maintenance Prioritization assessments will be prepared.
- The prioritization will also flag any potential CLI ECA compliance issues for each SWM feature to further prioritize actions to address any compliance issues.
- Facilities at risk of imminent failure such as a critical structural failure will be highlighted and if multiple instances exist, these will also be prioritized.
- Prioritization results will be included in the Town's database and summarized in an annual technical memorandum that will include updated summary maintenance prioritization tables.
- For LID sites, a basic priority ranking system will be applied to convey immediate, near-term, or longer-term recommendations for maintenance and/or repairs.

Task 2.2: Reporting

A content summary highlighting reporting themes is included in **Error! Reference source not found.** below. Linkages with the Town's relevant draft CLI ECA (Schedule E) requirements are also provided in this table, including how this project report addresses the Town's O&M manual requirements.

Technical Report

A final report will summarize technical results and maintenance needs from 2025 SWM inspection and maintenance prioritization project. The Township will take over annual reporting in 2026.

O&M Manual

A 'Stormwater Infrastructure Management, Operations and Maintenance Manual' will be prepared for the Town to ensure the criteria needed to address the CLI ECA O&M manual requirements are met. This effort by STEP will involve direct engagement with the Town to ensure any updates to the O&M Manual are feasible and acceptable before finalization.

iii. Table 1). Conveyance swales, uncontrolled storm sewers, and any outlets to receiver not from SWM features are not covered in this pilot program.

iv. Inspections incorporated in the project do not necessarily include those required after a major flood event occurs. If a major flood event occurs and a SWM feature inspection has not yet been performed, STEP will make every effort to visit the potentially affected feature in a timely manner based on resource opportunities and constraints. A provisional item No. 3 has been provided to capture the additional cost for repeat site inspections to any given SWM feature.

O&M Manual

v. Town will provide necessary information for STEP to incorporate (append) procedures that will satisfy the draft CLI ECA Schedule E, Section 3.2.1. f), g), and h).

vi. Town will provide an updated map of the Conveyance swales, uncontrolled storm sewers, and any outlets to receivers not covered in this pilot project to be referenced as part of the O&M Manual procedures.

Town and STEP Coordination

Appropriate members of the Town's Engineering, Public Works and Operations staff are made available to review and address STEP audit recommendations and technical assessments including the report deliverable;

vii. STEP to inform the Town of any significant health and safety issue in a timely manner;

viii. STEP to inform the Town of any concern with state of SWM feature that may present adverse impacts on surrounding properties if not addressed in a timely manner;

ix. STEP will follow standard practices, conduct themselves professionally, and work during regular business hours but are not responsible for landowner complaints.

Data Management

x. STEP will use the CityWide database to support audit recommendations including how to adapt or adopt Town's current methods to support a comprehensive inventory and maintenance prioritization program.

Minor Maintenance, Health & Safety

xi. Any significant health and safety issue identified by STEP will be addressed by the Town as a priority (e.g., guard rail missing on outlet headwall accessible to the public). The Town

will take full responsibility for ensuring the health and safety issued is resolved, to eliminate risk to the public and the municipality.

xii. Inspection audits will be predominately limited to surface access only. Should there be facilities identified with key components or functionality requiring confined space entry for inspection they will be evaluated on a case-by-case basis.

Assessments and Future Phases

xiii. STEP may require Town site support to provide access to SWM features secured via perimeter fencing, when conducting inspections and/or sediment accumulation activities;

xiv. It is assumed that sediment accumulation assessments provided by the Town and prepared by consultants will be adequate for maintenance prioritization and volume assessments, including a volume of permanent pool remaining. If one or more of these assessments is not deemed adequate, subject to Town and STEP agreement, Provisional Item No. 1 may be exercised or modifications to the prioritization methodology considered;

xv. Sediment sampling and coring to determine sediment volume and quality for removal is not included in Phases 1 and 2 SWM inspection and maintenance prioritization work. These additional efforts are recommended as part of a future phase in preparation for tendering and sediment removal efforts;

xvi. STEP's inspection and maintenance services will not evaluate the performance of the SWM / LID feature relative to design criteria. This can be achieved through more detailed performance monitoring, which may include a synthetic runoff test;

xvii. STEP staff will not provide any spill remediation measures (e.g., socks, pads), during any site visit. However, we will provide advice to the Town including recommendations on follow-up testing and remediation assessment(s) needed; and

xviii. The upstream drainage areas and associated land use characterization for SWM features not provided in the information packaged from the Town will be estimated by STEP. These estimates for upstream drainage and land use characterizations will be based on high level desktop delineation and characterization assessments.

Financials

xix. A final invoice accounting for the difference between the actual service efforts from STEP will be issued at the conclusion of the project (early 2027), not to exceed the upset amount outlined (unless provisional items are agreed to by the Town resulting in a revised upset limit).

xx. The total project cost estimate represents an upset limit for the work being proposed. Costs charged to the Town will be based on actual hours spent along with equipment and travel costs, not to exceed the upset limit (unless provisional items are agreed to by the Town resulting in a revised upset limit).

Schedule B

STEP Detailed Budget Tables (2025 and 2025 technical services)

Phases 1 and 2: Stormwater Management Program Inspection and Maintenance Prioritization

Insert pdf versions of Tables B-1 and B-2 from detailed budget sheets here.