

THE CITY OF VAUGHAN

CORPORATE POLICY

POLICY TITLE: **MUNICIPAL NON-CONVENTIONAL STORMWATER
MANAGEMENT**

POLICY NO.: **08.C.03**

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| Section: | Development & Planning | | |
| Effective Date: | June 25, 2024 | Date of Last Review: | Click or tap to enter a date. |
| Approval Authority: Council | Policy Owner: DCM, Infrastructure Development | | |

POLICY STATEMENT

It is the policy of the City of Vaughan to consider and approve Non-Conventional stormwater management facilities (SWMFs), where feasible and where they will contribute positively to the surrounding community. This policy establishes the framework for evaluating, accepting, and implementing Non-Conventional SWMFs on land to become municipally owned.

PURPOSE

The purpose of this policy is to ensure a clear and transparent decision-making process for evaluation and implementation of Non-Conventional SWMFs. The intention of this policy is to provide City of Vaughan staff and the development community with a transparent process for evaluation, acceptance, and implementation of these facilities.

The objectives of this policy are to:

1. Provide guiding principles to define when Non-Conventional SWMFs may be considered for integration with blocks that have already defined land uses (e.g., parks and rights-of-way), and when Non-Conventional SWMFs should not be used.
2. Define the applicable criteria for acceptance and implementation of these facilities, and development of standard drawings and a list of City accepted technologies.
3. Provide a cost-recovery formula to establish an Offset Fee for the increased inspections, operations and maintenance costs of Non-Conventional SWMFs (including any pre-treatment facilities).

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SCOPE

This policy applies to all parties involved in the planning, design, acceptance, implementation, operations, maintenance, rehabilitation, and replacement (where applicable) of Non-Conventional SWMFs intended for municipal ownership and operation, assumed through land development processes. This policy shall be revisited on an as-needed basis.

The approval of these facilities and acceptance of the Offset Fee is the responsibility of the City Manager of the City of Vaughan and/or their delegate acting on their behalf.

LEGISLATIVE REQUIREMENTS

1. *Planning Act*, R.S.O. 1990, c P.13.
2. *Places to Grow Act*, 2005, S.O. 2003, c. 13.
3. *Bill 23, More Homes Built Faster Act*, 2022, S.O. 2022, c. 21.
4. *Ontario Water Resources Act*, R.S.O. 1990, c. O.40.
5. *Clean Water Act*, 2006, S.O. 2006, c. 22.
6. *Environmental Protection Act*, R.S.O. 1990, c. E.19.

DEFINITIONS

1. **City:** The Corporation of the City of Vaughan, including all departments, employees, and administrative divisions.
2. **Clean Condition:** Without visual accumulation of sediment or debris.
3. **CLI-ECA:** The City of Vaughan's Consolidated Linear Infrastructure Environmental Compliance Approval.
4. **Conventional SWMF:** End-of-pipe stormwater management practice limited to a wet or dry Stormwater Management Pond to provide water quantity control and/or quality treatment, and/or erosion control of tributary area runoff.
5. **Council:** Council of the City of Vaughan.
6. **Development Application (or Development):** Proposal put forward by a Landowner to the City for review and decision, pertaining to a change of land use, construction of a new building, or the creation of a parcel of land, as

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governed under the *Planning Act*. The applicable types of Development Applications which only apply to this procedure are Block Plan, Secondary Plan, Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision.

- 7. Greenfield Development:** The development of a property, site, or area on undeveloped land in an urban or rural area.
- 8. Infill Development:** The development or redevelopment of a property, site, or area with a new development at a higher density or building height than is currently permitted by the Official Plan within an area that is already developed.
- 9. Initial Submission:** The stage of a Development Application process whereby an applicant submits documents for the first time to the City for staff review.
- 10. Landowner:** The party who owns the property or is the representative of the party who owns the land.
- 11. LID:** Low Impact Development.
- 12. Manufactured Treatment Devices (MTD's):** Devices used to target the treatment and removal of pollutants from stormwater runoff from development sites, to achieve regulatory water quality objectives.
- 13. Non-Conventional SWMF:** All end-of-pipe stormwater management facilities outside the Conventional SWMF, as defined above, that are designed to provide quantity control and extended detention.
- 14. O&M:** Operations and Maintenance.
- 15. Offset Fee:** A one-time cost contribution to be paid by the Landowner to the City for the implementation of the Non-Conventional SWMF to compensate for any increase in cost when compared to a conventional SWMF, calculated by a formula. Is the differential between the calculated fees for a Conventional and Non-Conventional Facility. $\text{Inspection/Monitoring Costs} + \text{Maintenance Costs} = \text{offset fee}$.
- 16. OGS:** Oil-Grit Separator. Is considered a facility that will provide pre-treatment prior to runoff entering the Non-Conventional SWMF.
- 17. PEO:** Professional Engineers Ontario.

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18. Permanent Pool: A volume of water that is retained within a conventional SWM facility to provide for the settling and dilution of sediments and pollutants; provides water quality control.

19. Pre-treatment: Treatment of stormwater upstream of/prior to entering the quantity control/extended detention area of a Non-Conventional SWMF or a Conventional SWMF via a single or multiple measures in series. Facilities do not require confined space entry for maintenance. This single or treatment train provides the removal of sediment.

20. Qualified Engineer: Licensed Professional Engineer, licensed to practice in Ontario, and competent to practice in the specified engineering discipline.

21. Qualified Engineer of Record: Licensed Professional Engineer who has sealed any submitted drawings or reports.

22. ROW: Right-of-way.

23. Sealed: Documents that have been stamped using the rubber stamp/impression of the rubber stamp issued by Professional Engineers Ontario (PEO) to all license holders. The seal (or stamp) identifies the Engineer taking personal and professional responsibility for the content of the documents. The seal must be signed and dated by the license holder.

24. SWMF: Stormwater Management Facility.

25. Treatment Train Approach: Providing stormwater treatment first, at the lot level, then in conveyance, followed by “end-of pipe” (where stormwater gets discharged). A treatment train is required to meet the multiple objectives of water balance, water quality, erosion control and flood control in an overall stormwater management strategy.

POLICY

1) GENERAL CONSIDERATIONS

- a) Non-Conventional SWMFs may be considered for both greenfield and intensification/infill developments if sufficient design information is provided to show that implementation of a Non-Conventional SWMF is possible, and a Non-Conventional SWMF Justification Report is provided to and reviewed by the Development Planning Department and the Development Engineering Department and accepted by the City.

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- b) A Stormwater Management solution applying the use of a Non-Conventional SWMF, as required through the development process, may be accepted by the City if:
- i) The draft plan has been developed and accepted by the City with the intent that a Non-Conventional SWMF will be implemented as the stormwater solution.
 - ii) Justification is presented within a Non-Conventional SWMF Justification Report, prepared by a licensed Qualified Engineer, which provides sufficient evidence a Non-Conventional SWMF can be implemented while remaining in conformance with applicable City of Vaughan, York Region and Provincial legislation, by-laws (as amended or superseded), policies, and design criteria. The Non-Conventional SWMF Justification Report shall:
 - (1) Identify the conceptual design of the proposed Non-Conventional SWMF;
 - (2) In accordance with the considerations of the Vaughan Official plan, document the social, environmental, and economic benefits, impacts, and long-term O&M requirements and high-level maintenance costs of the proposed facility; and
 - (3) Be submitted to the City for review and acceptance at the Initial Submission of the development process, which may include but is not limited to a Master Environmental Servicing Plan, Block Plan, Secondary Plan, Official Plan Amendment/Zoning By-law Amendment or Draft Plan of Subdivision. The City may retain a qualified external Peer Reviewer to assist with technical review as needed, to be paid for by the Landowner.
 - iii) The proposed Non-Conventional SWMF, as an end of pipe control, is a part of a treatment train approach which will include source and conveyance controls in series through MTD's and/or LID techniques, where applicable.
 - iv) The proposed Non-Conventional SWMF adheres to the City's list of accepted SWM practices and technologies outlined in the Non-Conventional SWMF Criteria, as well as MECP's Stormwater Management Planning and Design guidelines, outlined in the Design Criteria for Non-Conventional SWMFs.
 - v) Frequent inspections and maintenance (such as sediment removal from pre-treatment facilities and visual inspections) shall not require confined

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space entry and shall use conventional equipment such as vacuum and flushing trucks.

vi) Major concrete rehabilitation (25-year interval) and structural inspection is permitted to require confined space entry.

vii) The proposed Non-Conventional SWMF (both plastic and concrete) adheres to applicable CSA standards and/or be approved by the City's Products and Standards committee, as outlined in the Non-Conventional SWMF Criteria.

c) Non-Conventional SWMFs may be considered within parkland, open space, and proposed road ROW's if supporting documentation can demonstrate that the proposed facility is not in conflict with proposed surface features and functions, underground services and utilities, and planned park programming. Frequent inspections, operations and maintenance of the proposed facility shall not conflict with planned City programming, operations, and maintenance. Traffic considerations for application in road ROWs shall be provided in the Operations & Maintenance manual. Major maintenance, rehabilitation or replacement of Non-Conventional SWMFs, resulting in disruption to park programming, operations and maintenance, shall be on an infrequent basis. All the above must be confirmed for detailed design acceptance and municipal assumption.

2) TECHNICAL CONSIDERATIONS

a) A Stormwater Management solution applying use of Non-Conventional SWMF may be accepted by the City if:

i) The proposed solution, defined in the detailed Stormwater Management Report, achieves all required water quantity, water quality, water balance and erosion control targets for the development, as defined by City of Vaughan's Engineering Design Criteria and Standards and the 2003 MECP Stormwater Management Planning and Design Manual. The proposed Non-Conventional SWMF shall only be used for water quantity control and extended detention and shall not be used for water balance controls. Water quality treatment may be provided by separator/isolator rows, and any additional measures required to meet 80% TSS removal. Pre-treatment is required to meet those criteria, as described below in Section 2).a.ii. Water quality and water balance shall be achieved by employing a Treatment Train approach.

ii) The proposed solution provides pre-treatment of captured runoff through a Treatment Train approach that may include the use of LID measures, OGS

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Units, pre-treatment cells (such as isolator/separator rows), or other acceptable technology by the City prior to discharging to the Non-Conventional SWMF. Stormwater shall be pre-treated to a minimum of 80% total suspended solids (TSS) removal, using a particle size distribution defined by City standards, prior to discharging to the quantity control portion of the Non-Conventional SWMF. All pre-treatment measures shall be easily maintained by the City and must not require confined space entry (except for major maintenance events as detailed in Section 2).b).v). The implementation of treatment measures to achieve water quality targets for the subject development located downstream of the Non-Conventional SWMF will not be accepted.

- (1) Non-Conventional SWMFs that provide infiltration will not be accepted.
- (2) Non-Conventional SWMFs with a permanent pool will not be accepted.
- (3) All Non-Conventional SWMFs shall be gravity draining. Any Non-Conventional SWMFs requiring pumping to drain the facility will not be accepted.
- (4) An O&M Manual for the proposed Non-Conventional SWMF and any pre-treatment systems is required for review and acceptance by the City. The O&M Manual shall include at a minimum, the requirements for inspections and monitoring, sediment loading estimates, and an Offset Fee assessment for the proposed stormwater infrastructure, all of which shall be completed based on a 50-year time period, according to the City's Procedures, Standards and Design Criteria for Non-Conventional SWMFs. The manual shall also specify staging areas for anticipated maintenance operations to ensure park accessibility and right-of-way functionality during maintenance.
- (5) The design of Non-Conventional SWMF must adhere to the requirements outlined in the City's Criteria and Standards, CLI-ECA, other applicable Environmental Compliance Approvals, or other legislative requirements.

3) PARKLAND CONSIDERATIONS

- a) Provisions of parkland credits for dual-use park/Non-Conventional SWMF may be considered through application of criteria contained within the Parkland Dedication By-Law 168-2022, as amended, or superseded.

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- b) To receive Parkland Dedication, the design of dual-use park block with proposed park space above a Non-Conventional SWMF must meet the following requirements.
- c) The SWMF does not impact the City's ability and obligation for park space or ability to include active and/or passive programming of the park space. The SWMF must not inhibit the park from being permit-ready for any programming.
- d) The SWMF does not prohibit or restrict public programming.
- e) The park space must be open and accessible to the public at all times and will not be out of use as a result of frequent operations and maintenance of the Non-Conventional SWMF, with the exception of areas identified for staging requirements, as described in the Operations and Maintenance Manual.
- f) The park space and SWMF is designed, developed, and maintained to City standards.
- g) The park space meets applicable criteria in the City's Official Plan and Secondary Plan.
- h) The design of the Non-Conventional SWMF will be based on Park needs (e.g., the location of the SWMF), stormwater management criteria and City of Vaughan Engineering design criteria.
- i) As a result of the Non-Conventional SWMF design, lands will not be encumbered with poor drainage, erosion issues or extreme slopes.
- j) Design SWMF, landscaping and park feature placements are to consider future rehabilitation/major maintenance requirements to minimize mature tree removal in the future.
- k) The design of Non-Conventional SWMFs located below proposed parkland blocks shall comply with the technical design requirements defined in the City's Park's Design Criteria and Criteria and Standards for Non-Conventional SWMFs, including but not limited to, minimum facility cover depth, static and dynamic loading conditions, and access requirements.
- l) To be accepted as programmed park space, frequent inspections, operations, and maintenance of the proposed SWMF shall not conflict with, prohibit, or restrict planned park programming, operations, and maintenance. Major maintenance, rehabilitation, or replacement of Non-Conventional SWMFs,

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resulting in disruption to park programming, operations, and maintenance, may be accepted on an infrequent (>25 year period) basis. Accessibility to the park by the public will not be infringed on by frequent operations and maintenance of the Non-Conventional SWMF, with the exception of staging areas identified in the Operations and Maintenance Manual.

- m) To be accepted for parkland use, the Landowner shall agree to design and construct the park to the City's satisfaction and the Landowner shall enter into a developer build agreement with the City to design and build the Park as per Developer Build Parks Policy, No. 07.2.05.

4) RIGHT-OF-WAY CONSIDERATIONS

- a) Implementation of Non-Conventional SWMFs within a ROW will only be accepted if they do not require modification of the total ROW width in order to accommodate the facility, and the Non-Conventional SWMF infrastructure is capable of fitting within the right-of-way without infringing on other existing or planned services within the ROW.
- b) The design of Non-Conventional SWMFs located within City of Vaughan ROW shall achieve the required separation and offsets from other municipal infrastructure and servicing, as outlined in the MECP Stormwater Management Planning and Design Manual, March 2003, City of Vaughan's most current Engineering Design Criteria, Standard Drawings, and Criteria for Non-Conventional SWMFs.
- c) Major operations, maintenance, or rehabilitation to the Non-Conventional SWMF, resulting in disruption to traffic may be accepted on an infrequent basis (>25 year period). In anticipation of major maintenance, traffic considerations and construction staging considerations, using current traffic considerations, shall be included in the Operations & Maintenance Manual for the facility.
- d) The design shall consider placement of inspection ports/access manholes/clean out access locations that will minimize impacts to traffic during frequent inspections and maintenance.
- e) To be accepted by the City, the Landowner agrees to design and construct the facility within the ROW to the satisfaction of the City.

5) OPERATIONS AND MAINTENANCE

- a) An O&M Manual for all components of the Stormwater Management solution that are to be assumed by the City, including pre-treatment units or measures

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and the Non-Conventional SWMF, shall be provided to the City for review and acceptance. The O&M Manual shall detail the required operation and maintenance procedures/efforts, required equipment/certifications, maintenance frequency on all related infrastructure, and associated costs. In addition, the O&M Manual shall include the following:

- i) Maintenance frequency of the facility, which shall be provided based on the sediment loading rate from the development.
 - ii) Detailed breakdown of the procedure, effort, equipment, and cost for each inspection/maintenance item for the entire Stormwater Management Solution.
 - iii) A list of equipment required to complete the required inspection and maintenance, as well as any required certifications for staff completing both frequent and infrequent inspections and maintenance (e.g. confined space entry).
 - iv) Maintenance procedures with a high disruption level to the public must be highlighted during the preparation of this manual and considered during the development of the annual O&M costs.
 - v) Frequent inspections and maintenance (such as sediment removal from pre-treatment) must not require confined space entry; must be completed using conventional equipment such as vacuum and flushing trucks; shall minimize disruption to the public; and shall be completed from hard surfaces to eliminate restoration costs.
 - vi) Major maintenance or rehabilitation of Non-Conventional SWMFs requiring confined space entry and resulting in disruption to park programming, operations, and maintenance, shall be assumed to be on a basis of >25 year period for concrete SWMFs, and > 50 year period for plastic SWMFs. The O&M Manual shall delineate the area of disturbance.
 - vii) Any additional information requested by the City related to operations, maintenance, rehabilitation, and replacement is to be provided by the Landowner.
- b) Any additional cost to the City of the proposed Non-Conventional SWMF over a 50-year time period shall be determined with consideration of the following:
- i) The Landowner shall provide a 25-year Manufacturer's extended warranty on SWMFs. In the event that a warranty cannot be provided, the City will

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require the Landowner to provide a rehabilitation fee as a component of the maintenance cost in the Offset Fee.

- ii) Costs are to be compared (Inspection/Monitoring Costs + Maintenance Costs= the offset fee costs) between a Conventional SWMF of equal volume and/or function to assess any increased costs associated with implementation of the Non-Conventional SWMF (if applicable).
- iii) The Landowner shall demonstrate, through the completion of a minimum three-year monitoring and reporting program to the satisfaction of the City and Schedule E of the CLI-ECA policy, that the Non-Conventional SWMF and all other stormwater management systems, are functioning as designed.

6) COST-RECOVERY

- a) As part of assumption, the Landowner shall provide a one-time cost contribution in present value to the City for the implementation of the Non-Conventional SWMF to compensate for any increase in cost when compared to a Conventional SWMF. The value of the cost contribution shall be calculated using the City's standardized financial formula.
 - i) This Offset Fee will be calculated as a component of the O&M Manual for acceptance by the City.
 - ii) The Maintenance cost component of the Offset Fee shall include costs associated with removing and/or replacing SWM infrastructure, park assets and removal/replacement of trees located above underground facilities that require repair and/or replacement.
 - iii) The Landowner shall provide a 25-year Manufacturer's extended warranty on SWMFs. In the event that a warranty cannot be provided, the City will require the Landowner to provide a rehabilitation fee as a component of the maintenance cost in the Offset Fee. Any such warranty must be provided in a legally binding agreement acceptable to the City solicitor.

7) ASSUMPTION

- a) Prior to assumption, the Landowner shall prove, using CCTV, or other methods to the satisfaction of the City, structural stability of the Non-Conventional SWMF including a certificate of conformance from a Qualified Engineer; confirmation that the Non-Conventional SWMF (including all pre-treatment facilities) is provided to the City in clean condition (no sediment or debris is

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present); is operating as designed; has been maintained as specified by the O&M Manual; and has met all other requirements for assumption per the Subdivision Agreement (if applicable).

- b) Prior to assumption, the Landowner shall provide record drawings for the Non-Conventional SWMF, sealed by the Qualified Engineer of Record, certifying that construction was carried out as per the accepted design. Record drawings are to be in accordance with the PEO's guidance document on Preparing As Built and Record Documents.
- c) If the City is responsible for implementation of the Park features after assumption, the Landowner shall be responsible for any additional costs, outside of standard development charges, caused by the Non-Conventional SWMF. Costs shall be documented through the cost estimate prepared for park construction, and will be compared to the approved Park's budget, per the Developer Build Parks Policy No. 07.2.05.

ADMINISTRATION

Administered by the Office of the City Clerk.

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| Review Schedule: | Other (specify) Annually | Next Review Date: | June 25, 2025 |
| Related Policy(ies): | 07.2.25 – Developer Build Parks | | |
| Related By-Law(s): | 168-2022 | | |
| Procedural Document: | PRC.45 – Municipal Non-Conventional Stormwater Management Facilities Acceptance | | |

Revision History

| Date: | Description: |
|-------------------------------|---|
| Jun. 25, 24 | Approved at Council. Report No. 24 Item No. 1 |
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