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# FUNCTIONAL SERVICING

# &

# STORMWATER MANAGEMENT REPORT

## FOR

# GLOBAL PROPERTIES INC.
# WILDFIELD VILLAGE

**GLOBAL PROPERTIES INC.**

**TOWN OF CALEDON**
**REGION OF PEEL**

**PROJECT NO. 24-1401**

**AUGUST 2025**


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# FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT FOR GLOBAL PROPERTIES INC. – WILDFIELD VILLAGE

**TOWN OF CALEDON**
**REGION OF PEEL**

**AUGUST 2025**

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**FUNCTIONAL SERVICING &**
**STORMWATER MANAGEMENT REPORT**
**FOR**
**GLOBAL PROPERTIES INC. – WILDFIELD VILLAGE**

**TOWN OF CALEDON**
**REGION OF PEEL**

**AUGUST 2025**

## 1.0 INTRODUCTION

David Schaeffer Engineering Ltd. (DSEL) has been retained by Global Properties Inc. to prepare a Functional Servicing and Stormwater Management Report (FSR) in support of the Global Properties Inc. – Wildfield Village Draft Plan located in the Wildfield Village Secondary Plan Area in the Town of Caledon, Regional Municipality of Peel. The FSR study area is approximately 116.6 hectares and is bounded by Centreville Creek Road to the west, future subdivisions to the south, The Gore Road to the east, and future subdivisions to the north as illustrated in ***Figure 1***, herein described as the subject site. The existing land use of the subject site is primarily agricultural.

The subject site topography is generally split, with the eastern portion of the site sloped towards the south-east, crossing The Gore Road, outletting to the East Tributary to the West Humber River. The western portion of the site slopes towards the south-west crossing Centreville Creek Road, outletting to the West Tributary to the West Humber River.

The following report is submitted in support of the Draft Plan application for the subject site and demonstrates the availability of municipal services to the subject property. The report further demonstrates general conformance with the Town of Caledon standards, the requirements of Toronto and Region Conservation Authority (TRCA), Region of Peel guidelines, and general industry practice. The Terms of Reference for the FSR are included in ***Appendix A***.

## 2.0 PREVIOUS STUDIES AND REPORTS

The following materials have been reviewed to identify the site constraints, which govern development within the subject site shown in **Table 2-1** below. The below documents form the basis for this report.

**Table 2-1: Background Studies and Guidelines**

- **Wildfield Village Secondary Plan, Caledon, Local Subwatershed Study Phase 1 Report**
  SCS Consulting Group Ltd. & GEI Consultants Inc., November 2024
  ***(Phase 1 LSS)***


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- **Wildfield Village Secondary Plan, Caledon, Local Subwatershed Study Phase 2 Report, Analysis and Impact Assessment**
  SCS Consulting Group Ltd. & GEI Consultants Inc., January 2025
  ***(Phase 2 LSS)***

- **Functional Servicing Report in Support of OPA, Wildfield Village Secondary Plan, Town of Caledon, Region of Peel**
  SCS Consulting Group Ltd., December 2024
  ***(OPA FSR)***

- **Town of Caledon Development Standards Manual**
  Town of Caledon, 2019
  ***(Town Standards***)

- **Stormwater Management Planning and Design Manual**
  Ministry of Environment, March 2003
  ***(SWMP Manual***)

- **Stormwater Management Criteria**
  Toronto and Region Conservation Authority, August 2012
  ***(TRCA SWM Criteria***)

- **Low Impact Development Stormwater Management Planning and Design Guide**
  Credit Valley Conservation & Toronto and Region Conservation Authority, 2010
  ***(LID Design Manual***)

- **Humber River Hydrology Update Final Report**
  Civica, June 2015
  ***(Humber River Hydrology Update)***

- **Region of Peel Water & Wastewater Master Plan for the Lake-Based System**
  Region of Peel, 2020
  ***(Peel Master Plan)***

- **Region of Peel Settlement Area Boundary Expansion (SABE) Water & Wastewater Servicing Analysis**
  Region of Peel, August 2021
  ***(SABE)***

- **Development Charges Background Study – Consolidation Report, The Regional Municipality of Peel**
  Watson & Associates Economists Ltd., December 2020
  ***(2020 DC Study)***

- **Region of Peel Linear Wastewater Standards**
  Region of Peel, March 2023
  ***(Sanitary Design Criteria)***

- **Region of Peel Public Works Design, Specifications & Procedures Manual, Linear Infrastructure, Watermain Design Criteria**
  Region of Peel, June 2010


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***(Watermain Design Criteria)***

- **Erosion & Sediment Control Guidelines for Urban Construction**
  Toronto and Region Conservation Authority, 2019
  ***(ESC Guidelines)***

# 3.0 LAND USE

## 3.1 Existing Land Use

The subject site is currently under agricultural use and includes some environmental features which have been reviewed through the ***Phase 1 LSS*** and ***EIS*** and discussed further below.

## 3.2 Proposed Land Use

The subject site is proposed to be developed for residential and related purposes. The proposed development consists of detached houses, dual purpose houses, semi-detached houses, street townhouses, roads, park blocks, elementary schools, a secondary school, a wetland relocation & compensation block, a hydro distribution station, and SWM blocks. The Draft Plan is illustrated in ***Figure 2*** and included in ***Appendix B***, with the land uses summarized below in **Table 3-1**.

**Table 3-1: Summary of Proposed Land Uses**

| LAND USE | AREA (Ha) | UNITS[1] |
|---|---|---|
| Single Detached Dwellings | 12.62 | 397.5 |
| Dual Purpose Dwellings | 8.95 | 347 |
| Semi-Detached Dwellings | 9.42 | 481 |
| Street Townhouse Dwellings | 27.99 | 1378 |
| Parks | 4.78 | - |
| Schools | 8.29 | - |
| Wetland Relocation & Compensation Block | 1.11 | - |
| SWM Ponds | 7.06 | |
| Hydro Distribution Station | 0.60 | - |
| Streets & Walkways | 34.37 | - |
| Buffers/Servicing Access/Road Widening | 1.41 | - |

[1] Includes part lots

## 3.3 Phasing

The subject site is proposed to be developed in multiple phases. A Phasing Plan is illustrated in ***Figure 3***. The phasing is further discussed in ***Section 11***.

# 4.0 STORM DRAINAGE

The subject lands will be developed using a treatment-train approach for addressing stormwater runoff generated by the proposed development, consisting of:


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- the application of source control and LID techniques as appropriate, preferentially located in public areas with appropriate soil conditions to provide stormwater quality control and address the site water balance;

- conveyance techniques as appropriate; and

- end of pipe facilities such as wet ponds for additional quantity, quality, and erosion control.

## 4.1 Existing Features and Drainage Patterns

The subject site topography is generally split between the eastern and western portions of the site. The western portion (approximately 23.3 Ha) primarily drains in the southwesterly direction towards two existing culverts in Centreville Creek Road. A small south-western portion of the site (approximately 13.7 Ha) drains to the Centreville Creek Road ditch, continuing south past the property limits. All western drainage is conveyed to the West Tributary to the West Humber River.

The eastern portion of the site, approximately 79.6 ha, drains in the southeasterly direction towards The Gore Road ditch and crossings. All eastern drainage is conveyed to the East Tributary to the West Humber River.

The pre-development drainage areas and drainage patterns for the subject property are shown in ***Figure 4***.

### *4.1.1 Headwater Drainage Features*

The site contains six HDFs. Five HDFs – H4S3, H8S1, H9S1/2/3, H10S1, and H14S1 – have been classified as no management HDFs through the ***Phase 1 LSS*** and ***EIS***.

H1S1 (now H1S1-1/-2/-3) runs through the western portion of the site before discharging to an existing culvert in Centreville Creek Road. As identified through Table 2.13 (Appendix B2) of the ***Phase 1 LSS*** and ***EIS***, this HDF has been classified as a Mitigation HDF. The HDF conveys approximately 58.9 Ha of upstream drainage through the subject site.

As illustrated in Figure 2.11 in the ***Phase 1 LSS*** there are TRCA regulated floodplains on the subject site. As noted in TRCA's comments on the Official Plan Amendment (letter from the Town of Caledon dated June 18, 2025), the HDFs will not be regulated floodplains in the post-development condition.

Excerpts from the ***Phase 1 LSS*** have been included in ***Appendix B***.

## 4.2 Proposed Drainage Patterns

A conventional storm sewer system and major system conveyance network has been designed to direct storm flows safely through the catchment to designated stormwater management facilities for treatment. The proposed conditions drainage strategy is illustrated in ***Figure 5***.

There are two proposed stormwater management ponds proposed within the subject site. The location of the facilities generally matches those proposed through the ***Phase 2 LSS*** (Figure 4.1). As noted in the ***Phase 2 LSS***, Ponds 1 and 2 could be consolidated. As there is no outfall for


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Pond 2, and to avoid running an outfall down Centerville Creek Road to Pond 1, it is proposed to eliminate Pond 2 and consolidate it with Pond 1.

Generally, the northwestern portion of the site drains to SWM Pond 3 and the southeastern portion of the site drains to SWM Pond 7. The northeastern corner and a portion of the eastern side of the site drains to offsite SWM Pond 8, the southwestern corner drains to offsite SWM Pond 1, and the community park and secondary school blocks drain to offsite SWM Pond 6.

While some of the catchment for SWM Pond 7 drains to downstream outlets in existing conditions, it is proposed to harmonize the catchment boundary with ownership limits to minimize reliance on downstream non-participating owners. As is further discussed in ***Section 5.1***, SWM Pond 7 will discharge to both culverts 15 and 14 in order to maintain drainage contributions to both outlets. The grading and drainage boundaries may be further refined at the detailed design stage.

### *4.2.1 Boundary Road Drainage and External Drainage*

Each SWM Pond in the subject site has been sized to accommodate external drainage, from boundary roads and adjacent lands. **Table 4-1** below outlines the external drainage directed to the SWM facilities originating from outside of the subject site.

**Table 4-1: External Drainage**

| SWM Pond | Drainage Source | Area (Ha) | Runoff Coefficient |
|---|---|---|---|
| SWM Pond 3 | Centreville Creek Road | 3.37 | 0.75 |
| | Future Northern Subdivision | 12.33 | 0.69 |
| SWM Pond 7 | The Gore Road | 2.00 | 0.85 |
| | Future Western Subdivision | 1.85 | 0.70 |

For SWM Pond 7, the storm pipe within the pond block conveying drainage from The Gore Road will be constructed with the pond up to the property line to facilitate a connection to the pond for the Region in the future. As there is no low point in The Gore Road at SWM Pond 7, major system capture has been assumed in the sizing of the inlet pipe to the pond.

As the ultimate designs of Centerville Creek Road and The Gore Road are unavailable at this time, the boundary road drainage areas have been estimated, and will be further reviewed through detailed design and as more information becomes available.

### *4.2.2 Headwater Drainage Feature & Clean Water Pipe*

As detailed through the ***EIS***, the mitigation HDF is proposed to be piped from the northern limit of the subject site. In the interim, approximately 58.9 Ha of drainage will be captured and conveyed through the subdivision via a 1650/1800 mm clean water pipe (CWP), sized to convey the Regional event. Once the northern subdivision develops, the ultimate drainage area will be 48.3 Ha.

The CWP will convey the flows south and west via internal ROWs, then south along Centreville Creek Road. The CWP will ultimately discharge to the Wetland Relocation and Compensation Block.


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In addition to the HDF flows, the wetland relocation and compensation block will receive approximately 0.32 Ha of clean drainage from adjacent roofs and backyards flowing directly to the feature. The feature has been designed by GEO Morphix, and is further detailed through ***Appendix D***. The wetland relocation and compensation block will discharge across Centreville Creek Road to the West Tributary of West Humber River.

The alignment of the CWP, its associated drainage area, and the drainage area to the wetland relocation and compensation block are illustrated in ***Figure 6***. Sizing of the CWP is included in ***Appendix E***.

## 4.3 Conveyance of Minor System Flows

The subject property will generally be serviced by a conventional storm sewer system designed in accordance with ***Town Standards***:

- Storm sewers will be sized using a 10-year return frequency without surcharging where foundation drains will be connected to the storm sewer.
- Storm sewers will be sized using a 5-year return frequency where foundation drains will not be connected to the minor system (i.e. sump pumps are utilized).

Gravity connections are generally proposed throughout the site, and the storm sewers have been designed with a 10-year return frequency accordingly.

Sump pumps will be required in areas of shallow storm sewers or where 0.3 m of freeboard is not achieved from the 100 year / Regional hydraulic grade line to the underside of footing elevation. The sump pump outlet locations will be established through detailed design and will require back flow preventers or gooseneck connections to discharge to the storm sewer. Given the requirement for Regional control ponds and the resulting pond water levels and hydraulic grade line, sump pumps are anticipated to be required in the vicinity of the ponds.

Long-term foundation drainage flow rates are under review by the hydrogeological consultant, GEI Consultants Inc. (GEI). Based on preliminary flow rates provided by GEI, this flow is anticipated to be negligible in the context of the minor system flows and is not anticipated to impact storm sewer sizing. This will be further reviewed through detailed design.

Storm flows will be directed to one of the five proposed stormwater management ponds, two of which are located in the subject site, where the runoff will be treated for water quality, erosion, and quantity control.

The conceptual storm servicing plan, including the approximate limits of the sump pump areas, is provided in ***Drawing 2***, and preliminary profiles are included in ***Drawings 6, 7, and 8*** which illustrate all storm sewers within the subject site. Preliminary storm design sheets are included in ***Appendix E***.

## 4.4 Conveyance of Major Storm Flows

A continuous overland flow route will be provided through the study area to safely convey major system flows in excess of the minor system and up to the 100-year event. Overland flow routes will be directed to one of five stormwater management ponds. The major system flow will not


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exceed the width of the road allowance, and in no case will the depth of flow exceed 0.30 meters above the gutter of the road during a 100-year event, in accordance with ***Town Standards***.

Should the major system flow exceed the conveyance capacity of any given road, the storm sewer will be sized to accommodate the flows in excess of the road capacity.

Overland flow is conveyed through servicing blocks in three locations: Block 1064 south of the northern elementary school block, Block 1065 adjacent to Centerville Creek Road, and Block 1063 north of SWM Pond 7. The overland conveyance capacities of the blocks exceed the major system flow as illustrated in the calculations included in ***Appendix E***. The servicing blocks are further discussed in ***Section 4.5*** below.

The major system flows will be attenuated in the stormwater management ponds to achieve the allowable release rates as defined in ***Section 4.6.***

The conceptual major storm system is illustrated on ***Drawing 1***.

## 4.5 Servicing Blocks

Three servicing blocks have been incorporated into the draft plan based on the proposed servicing strategy.

A 10m servicing block, Block 1063, located north of SWM Pond 7, will accommodate the proposed 1950 mm storm inlet to the pond. The block will also convey the overland flow for drainage tributary to the pond and contain the pond's 5m access road providing connectivity with Street AF. Although the block is narrower than recommended per ***Town Standards***, it is wide enough to convey the overland flow and accommodate future maintenance. A vertical trench box can be used to minimize the trench width to less than 4.0m for any future maintenance of the 1950mm storm sewer within the block.

A 5.0m wide servicing block, Block 1064, located south of the northern elementary school block will accommodate a 750mm storm sewer, and overland flow from the school to Street AZ. A vertical trench box can be used to minimize the trench width to less than 4.0m for any future maintenance of the 750mm storm sewer within the block.

A 7.5m wide servicing block, Block 1065, connecting Street L and Street K will accommodate a 250mm sanitary sewer, a 750mm storm sewer, and overland flow. For future maintenance of the 250mm or 750mm pipes, a vertical trench can be utilized to maintain a trench width of less than 4.0m within the servicing block.

Cross sections of the three servicing blocks are included in ***Drawing 9***.

## 4.6 Feature Based Water Balance

The ***Phase 2*** LSS identifies downstream Wetland 10_11 as requiring a feature-based water balance. Wetland 10_11 is located outside of the subject lands, at the northwest corner of the Mayfield Road and The Gore Road intersection. Approximately 6.5 ha of the subject site drains


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to the wetland under pre-development conditions. The feature based water balance and mitigation strategy for Wetland 10_11 will be determined through the ***Phase 3 LSS***.

## 5.0 STORMWATER MANAGEMENT

Stormwater management for the subject lands will be accommodated in five (5) stormwater management ponds as described in ***Section 4.2***. Each pond services a distinct development area and all facilities are proposed as wet ponds as further described below.

Pond 3 is located east of Centreville Creek Road, and Ponds 7 is located west of The Gore Road, and are generally situated at the low points of the areas. As described in ***Section 4.2*****,** portions of the subject lands are treated by offsite Pond 1, located northeast of the Mayfield Road & Centreville Creek intersection, offsite Pond 8, located east of the subject site, as well as offsite Pond 6, located approximately 500m south of the subject site.

The following sections outline the preliminary details for Ponds 3 and 7 within the subject site.

### 5.1 Design Criteria

In accordance with the ***LSS*** and the ***TRCA SWM Criteria***, stormwater management within the subject site must be practiced as follows:

| | |
|---|---|
| **Water Quality Control** | ➢ Provide **Enhanced (Level 1)** water quality treatment, sized in accordance with the ***SWMP Manual*** |
| **Erosion Control** | ➢ Provide adequate drawdown time / erosion control to protect the form and function of watercourses downstream of the SWM facilities as per TRCA requirements of a 48-hour drawdown time for the 25 mm event<br>➢ Provide erosion controls as established through the GEO Morphix Erosion Report (***Appendix F***) |
| **Quantity Control** | ➢ Quantity Controls are required for 2- to 100-year events per the unit flow rates in the ***TRCA SWM Criteria***.<br>➢ Per the ***Phase 1 LSS***, Regional storm controls are required to match pre-development flows – 70 L/s/ha for Pond 3 and 74 L/s/ha for Pond 7. |

Excerpts from the ***LSS*** are included in ***Appendix B***.

All facilities will be designed accordingly to meet the criteria in Section 4.2.1 of the TRCA's Approaches to Manage Regulatory Event Flow Increases resulting from Urban Development (TRCA, 2016), where applicable, as well as to generally meet the criteria in Appendix E of the ***TRCA SWM Criteria***.

The pre-development drainage area for Pond 3 is 39.88 ha, and includes consolidating the drainage areas to the two adjacent existing culverts (the two magenta areas on ***Figure 4***) as per the ***Phase 2 LSS***. The pre-development drainage areas for Pond 7 to Culverts 15 and 13/14 are


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38.23 ha and 36.85 ha respectively. This includes consolidating the upstream 3.2 ha catchment with the downstream catchment (yellow and light green areas on ***Figure 4***) as per the ***Phase 2 LSS***.

Using the above noted pre-development drainage areas the following target release rates have been calculated for SWM Pond 3 and SWM Pond 7 in **Table 5-1**.

**Table 5-1: Quantity Control - Unit Release Rate Criteria and Target Release Rates**

| Storm Event | Unit Release Rate ($m^3/s/ha$)[1] | Target Release Rate ($m^3/s$) | | |
|---|---|---|---|---|
| | | Pond 3 | Pond 7 | |
| | | | Culvert 15 outlet | Culvert 13/14 outlet |
| | | Pre-Dev. Area = 39.88 Ha | Pre-Dev. Area = 38.23 Ha | Pre-Dev. Area = 36.85 Ha |
| 2-yr | 9.506-0.719 x ln(A) | 0.273 | 0.263 | 0.255 |
| 5-yr | 14.652-1.136 x ln(A) | 0.417 | 0.402 | 0.389 |
| 10-yr | 17.957-1.373 x ln(A) | 0.514 | 0.495 | 0.479 |
| 25-yr | 22.639-1.741 x ln(A) | 0.647 | 0.623 | 0.603 |
| 50-yr | 26.566-2.082 x ln(A) | 0.753 | 0.726 | 0.702 |
| 100-yr | 29.912-2.316 x ln(A) | 0.852 | 0.821 | 0.794 |
| Regional | **Pond 3**: 0.070<br>**Pond 7** : 0.074 | 2.792 | 2.829 | 2.727 |

1 – 2yr – 100yr from ***TRCA SWM Criteria***, Regional per the ***Phase 1 LSS***

The SCS Type II and Chicago design storms were used to determine the pond sizing and preliminary outlet structure designs for all SWM Ponds. IDF parameters for the SCS Type II and Chicago design storms were taken from Section 1.4.7 of the ***Town Standards***. Based on the ***Humber River Hydrology Update***, the 6-hour AES design storms were also reviewed in the modeling, however it was found that the Chicago storms based off the Town of Caledon parameters governed the pond design. Modeling files are included in ***Appendix G***.

The erosion controls have been established through a continuous erosion analysis approach. DSEL prepared a continuous pre-development and post-development hydrology model, and provided peak flow hydrographs to GEO Morphix. GEO Morphix has prepared a Fluvial Geomorphology Report that reviews the continuous model results. Please refer to the Erosion Assessment by GEO Morphix, included as ***Appendix F***. Monitoring for the purposes of model calibration is ongoing, with insufficient data at the time of this report to accurately calibrate the model.


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## 5.2 Operating Characteristics

The stormwater management ponds have been designed in accordance with the requirements of the ***Town Standards***, ***TRCA SWM Criteria***, and ***SWMP Manual***, and include the following features:

| | |
|---|---|
| **Sediment Forebay** | to improve sediment removal prior to entering the pond |
| **Permanent Pool** | to provide water quality and trap pollutants |
| **Extended Detention Storage** | to provide erosion control |
| **Quantity Control Storage** | to attenuate post development flows to the allowable release rates as per the ***TRCA SWM Criteria*** and ***Phase 1 LSS*** |

The impervious coverage has been estimated based on the various land uses and their respective sizes in the current draft plan. The imperviousness used for each land use is outlined in **Table 5-2** below, and meet or exceed ***Town Standards***. The final impervious coverage will be updated at the detailed design stage based on the characteristics of the actual plan.

**Table 5-2: Runoff Coefficients**

| Land Use | Runoff Coefficient |
|---|---|
| Low Density Residential | 0.68 |
| Semi-Detached Residential | 0.70 |
| Townhouse Residential | 0.75 |
| Parks & Servicing Blocks | 0.40 |
| Open Space & Wetland | 0.25 |
| SWM Ponds | 0.69 |
| Schools | 0.75 |

The conceptual designs of the stormwater management ponds including typical cross sections are presented in ***Figures 7 and 8***. A summary of the pond operating characteristics is presented in **Table 5-3**. All ponds are designed as wet ponds.


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**Table 5-3: Summary of Pond Storage Characteristics**

| Pond I.D. | Drainage Area (ha) | Imp. Coverage (%) | Permanent Pool Volume [1] ($m^3$) | Erosion Control Volume [2] ($m^3$) | 100 Year Flood Control Volume [3] ($m^3$) | Regional Flood Control Volume [3] ($m^3$) |
|---|---|---|---|---|---|---|
| SWM Pond 3 | 36.75 | 70.6 | 8,685 | 6,973 | 23,007 | 41,824 |
| SWM Pond 7 | 76.91 | 71.6 | 23,625 | 15,209 | 46,749 | 96,139 |

[1] Permanent pool and quality control provided for MOE Enhanced protection as per ***SWMP Manual***
[2] Erosion control to provide 24-48-hour drawdown time for the 25mm storm runoff volume
[3] Proposed conditions as modelled in PCSWMM. Quantity control required for the 2- to 100-year and Regional events in accordance with target release rates.

## 5.3 Pond Components

### *5.3.1 Sediment Forebay*

A sediment forebay is provided in each pond to improve the pollutant removal by trapping larger particles near the inlet of the pond. The forebays are designed with a length to width ratio of approximately 3:1 and do not exceed one third of the permanent pool surface area, as required in the ***SWMP Manual***. The forebays have a depth of 1.5 m which meets the minimum depth of 1.0 m outlined in the ***SWMP Manual*** to minimize the potential for scour and re-suspension. Detailed sediment forebay sizing calculations will be provided at detailed design.

### *5.3.2 Permanent Pool*

The permanent pools have been sized to provide an enhanced level of protection in accordance with the ***SWMP Manual.*** The average permanent pool depths are proposed as 1.5 m. The storage characteristics are summarized in **Table 5-4**.

**Table 5-4: Permanent Pool Storage**

| Pond I.D. | Drainage Area (ha) | Imp. Coverage (%) | Volume[1] Required ($m^3$) | Volume Provided ($m^3$) |
|---|---|---|---|---|
| SWM Pond 3 | 36.75 | 70.6 | 6,799 | 8,685 |
| SWM Pond 7 | 76.91 | 71.6 | 14,357 | 23,625 |

1 ***SWMP Manual***, Table 3.2

The slopes in the permanent pools will be graded with side slopes of 4:1 and 7:1, with minor localized variations.

### *5.3.3 Extended Detention*

Erosion criteria for the proposed SWM facilities was established based on the ***TRCA SWM Criteria*** and ***SWMP Manual*** requirements for extended detention volume based on detention of the 25mm storm event over a period of 48 hours, and the Erosion Assessment prepared by GEO Morphix (***Appendix F***).


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The resulting pond characteristics are summarized in **Table 5-5.**

**Table 5-5: Extended Detention / Erosion Control**

| Pond I.D. | Drainage Area (Ha) | Imp. Coverage (%) | Volume Required[1] ($m^3$) | Volume Provided ($m^3$) |
|---|---|---|---|---|
| SWM Pond 3 | 36.75 | 70.6 | 6,740 | 6,973 |
| SWM Pond 7 | 76.91 | 71.6 | 13,960 | 15,209 |

The extended detention component has been provided with side slopes of 4:1 and 7:1 with minor localized variations. Side slopes of 7:1 have been applied to the pond area 1 m on either side of the permanent pool water levels.

The extended detention volumes within the ponds will outlet through a reverse graded pipe. An orifice will be provided to discharge the extended detention volume at the allowable release rate. Orifice sizing is detailed in ***Appendix G***.

### *5.3.4 Quantity Control*

Flood control for the subject site is to be provided for 2-to-100 year and Regional Storm events based on the target release rates in ***Section 5.1***. The ponds have been modelled in PCSWMM to determine the storage volumes required to achieve the target peak outflow rates for each storm event. A summary of the release rates and volumes is presented in ***Table 5-6***, and with further details provided in ***Appendix G***.

As is further discussed in ***Section 5.5***, there is a single outfall pipe for SWM Pond 7, with a flow split to split the flows between the two outlet points (Culverts 15 & 14). Due to the similar areas of the pre-development drainage areas to the two outlet points, a 50/50 split is proposed between the two outlets, using the smaller pre-development area to set the target release rates.

A drop inlet structure will be provided at the pond outlets, which restricts flows to the required rates for 2- to 100-year and Regional storm events by a combination of orifices and/or weirs. The outlet pipe will be sized such that the full flow capacity of the pipe exceeds the maximum regional pond outflow for each pond. The preliminary control structure design has been completed in ***Appendix G***.


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**Table 5-6: Quantity Control – Peak Outflows and Volumes Based on Preliminary Control Structures**

| Storm Event | Target Release Rates ($m^3/s$) | | Designed Release Rates ($m^3/s$) | | Storage Volume ($m^3$) | |
|---|---|---|---|---|---|---|
| | Pond 3 | Pond 7 | Pond 3 | Pond 7 | Pond 3 | Pond 7 |
| 2-yr | 0.273 | 0.509 | 0.156 | 0.226 | 8,378 | 17,423 |
| 5-yr | 0.417 | 0.778 | 0.403 | 0.655 | 11,655 | 24,571 |
| 10-yr | 0.514 | 0.958 | 0.503 | 0.822 | 13,933 | 29,373 |
| 25-yr | 0.647 | 1.206 | 0.619 | 1.017 | 17,494 | 36,892 |
| 50-yr | 0.753 | 1.404 | 0.685 | 1.248 | 20,033 | 41,862 |
| 100-yr | 0.852 | 1.589 | 0.749 | 1.571 | 23,007 | 46,749 |
| Regional | 2.792 | 5.454 | 2.727 | 4.138 | 41,824 | 96,139 |

Regional active storage will be provided up to a maximum 3.5 m depth. A 0.30m freeboard from the Regional water level to the emergency spillway elevation is to be provided.

### *5.3.5 Emergency Overflows*

In the event of a blockage or a storm greater than the Regional Event, an emergency overflow weir has been provided for all SWM facilities. The emergency overflow weirs have been sized to convey the greater of the unattenuated 100 year or Regional inflow to the pond. Preliminary sizing is included in ***Appendix G***.

In the event of an emergency, such as a blocked outlet structure, the emergency spill flows for SWM Pond 7 would discharge to The Gore Road and ultimately to the East Tributary of the West Humber River. To minimize the flow to The Gore Road, an emergency grate is proposed at the top of the outlet structure to pick up a portion of the emergency flow into the 1500mm diameter outlet pipe. In the event of the normal outlet structure being blocked, in addition to the pond itself being completely full when a 100-year storm event occurs, approximately half of the flow would be conveyed in the outfall pipe, and half of the flow would be conveyed south along the west roadside ditch to the low points at the culverts. At the culverts, the flow would cross the road with a depth of less than 0.2m. Conveyance calculations for the emergency flow are included in ***Appendix G.***

Emergency overflows from Pond 3 will be directed to Centreville Creek and ultimately the East Tributary of the West Humber River.

### *5.3.6 Access Road*

A 5.0 m wide access road will be provided on at least two sides of the pond blocks to facilitate routine inspection and maintenance activities within the pond. The access road will be graded with a maximum slope of 2% cross slope, and 10:1 longitudinal slope for the access road into the pond forebay and main cell.


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The pond access roads will connect to municipal right-of-ways, and will allow for access to the outlet structure, inlet structures, forebay and main cell. The maintenance access road will be configured such that two points of entry are provided where possible. The access road shall be situated in a manner that allows trucks to drive around the pond without having to turn around; alternatively, the access road may incorporate a turning circle (minimum radius 12.0m) where two access points are not provided. Access roads will generally not be provided adjacent to roads.

Access to Pond 3 is provided from Street G, and access to Pond 7 is provided from Street E.

### *5.3.7 Sediment Drying Area*

As typically required in Caledon, sediment drying areas have been provided in both SWM Ponds, sized per the SWMP Manual and the Inspection and Maintenance Guide for Stormwater Management Ponds and Constructed Wetlands (TRCA and CH2M Hill Canada Ltd., 2018).

## 5.4 Thermal Mitigation

Effluent from ponds can experience increased temperatures due to solar exposure prior to discharging from the facilities. The stormwater management concept is to consider opportunities to reduce thermal inputs to the receiving watercourses. General guidance on opportunities and implementation of thermal mitigation practices can be found in the Thermal Impacts of Urbanization including Practices and Mitigation Techniques (CVC, January 2011). A combination of the following acceptable techniques, in order of implementation priority, should be implemented when developing detailed subdivision designs:

- LID infiltration BMPs;
- Deep pool and bottom-draw from SWM facility;
- Urban terrestrial canopy;
- Facility shading, orientation and length to width ratio; and,
- Concrete sewer system.

The CVC Thermal Impacts report identified five zones where thermal mitigation measures can be implemented. These include:

- Zone 1 - Pond catchment area
- Zone 2 - Stormwater Management Facility Inlet
- Zone 3 - Stormwater Management Facility
- Zone 4 - Stormwater Management Facility Outlet
- Zone 5 - Riparian Corridor

The typical outlet structure for all SWM facilities will consist of a deep outlet pool, reverse-slope extended detention pipe, and a sub-surface outlet pipe. The thermal mitigation strategy including planting/landscaping details will be further refined during the detailed SWM facility design stage.


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## 5.5 Pond Outfalls

SWM Pond 3 will discharge to the West Tributary of the West Humber River, and SWM Pond 7 will discharge to the East Tributary of the West Humber River. The outfalls have been designed to generally meet the ***TRCA SWM Criteria***, and have been sized to convey the Regional flows from the ponds. Each SWM Pond has one proposed outfall, with preliminary locations outlined in ***Figures 7 – 8***. The Wetland Replication and Relocation Block will outlet to the West Tributary of the West Humber River.

As discussed in ***Section 5.3.4***, there is a single outfall for Pond 7, with a flow split upstream of the northern discharge point to split the outflows split between the two outlets (Culverts 15 & 14). As the outlet culverts are along non-participant frontage, the alignment for the outfall is proposed within The Gore Road ROW as Global Properties Inc. does not have access to a route through the Secondary Plan lands. The outfall design considers the latest design for the trunk watermain and sanitary sewer within The Gore Road (Schaeffers Consulting Engineers, August 2025) and the future urbanization of the road. The plan view, profile view, and typical section for the outfall are illustrated in ***Drawing 3***.

The SWM Pond 3 outlet will outlet to a replaced culvert under Centerville Creek Road, in the vicinity of the existing culvert. The outlet for the Wetland Replication & Relocation Block will discharge immediately upstream of the culvert crossing Centerville Creek Road.

The outfalls will be detailed through detailed design and will be designed to provide energy dissipation at the headwall to mitigate localized erosive forces.

Outfall sizing calculations are included in ***Appendix E***.

# 6.0 LOW IMPACT DEVELOPMENT STRATEGIES

Low Impact Development Techniques (LIDs) can help mitigate the effects of development on the water budget, promote at-source retention, and maintain groundwater infiltration volume in the post-development condition. The use of LIDs forms part of a “treatment-train” approach to achieve overall stormwater management benefits, such as reducing thermal impacts, achieving water balance targets, promoting retention on the up-gradient pond catchment to minimize runoff and more closely match pre-development watershed characteristics along with other benefits.

Techniques aimed at directing runoff towards high pervious areas such as parks, swales and backyards, and increased topsoil thickness can increase groundwater infiltration in development areas. Other LID measures may include bioswales, rain gardens, perforated pipe systems, infiltration trenches and facilities, permeable pavements, tree boxes and rainwater harvesting techniques. The implementation of LIDs will be refined at the detailed design stage. It is noted that a general lack of permeable soils in the subject site may preclude certain LID measures or the ability to meet recharge targets.

## 6.1 LID Measures and Ownership

To promote infiltration across the subject site, preliminary LID measures are suggested:

- Swales where feasible in NHS areas, parks, and private side yard / rear yard swales


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- Sub-Surface Infiltration LIDs: Infiltration galleries in parks (public property)

The following Best Management Practices (BMPs) could also be implemented in the site. These BMPs are not credited for providing infiltration as part of the CLI-ECA but would provide increased infiltration opportunity for stormwater runoff.

- Increased topsoil depths in the parks / ponds and boulevards (public property), all conventional detached products and townhouse products (private property);
- Disconnected roof leaders to discharge to pervious areas (private property)
- Sub-Surface Infiltration LIDs: Rear yard infiltration trenches (private property)

## 6.2 Site Wide Water Balance

A preliminary Site Wide Water Balance (SWWB) has been prepared by GEI, identifying the pre-development water budget and post-development water balance requirements. Through the SWWB, an infiltration deficit of 64,768 $m^3$/year has been identified for the subject site. Per the CLI-ECA requirements, the target infiltration from the SWWB shall be used instead of the default $90^{th}$ percentile storm event. It should be noted that the targets listed in **Table 6-1** below accounts for approximately 20.4 Ha of land which is also owned by the applicant but is no longer included in the Draft Plan area. Those lands will proceed in the future through their own Draft Plan application:

**Table 6-1: Target Additional LID Infiltration Volumes**

| Catchment | Pre-Development Annual Infiltration Volume ($m^3$/year) | Post-Development Annual Infiltration Volume Without Mitigation ($m^3$/year) | Target Annual Infiltration Volume ($m^3$/year) |
|---|---|---|---|
| Draft Plan Area | 118,492 | 53,724 | 64,786 |

Refer to Table 6-1 of the Preliminary Hydrogeological Investigation (GEI, 2025) for further details

The preliminary LID design has been completed for the subject property with the SWWB deficit serving as the infiltration target to size the LIDs. In conformance with CLI-ECA requirements, infiltration measures have been proposed within public property. Infiltration galleries have been proposed in the two parks.

Preliminary LID sizing is provided in ***Appendix H*** with locations of the infiltration measures identified in ***Figure 11***. Clearance to groundwater is illustrated in ***Figure 11*** based on preliminary groundwater contours provided by GEI. As illustrated, sub-surface infiltration facilities are generally feasible in the eastern, northwestern, and southwestern portions of the site, with limited opportunities within the central portion of the subject property due to clearance required between the groundwater and infiltration trenches. The preliminary infiltration rates have been provided by GEI. The drawdown time of the LIDs is generally less than 48 hours based on following the ***LID Design Manual***. The proposed LIDs are summarized in **Table 6-2** below.


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**Table 6-2: Proposed Infiltration Galleries**

| Location | Length (m) | Width (m) | Area ($m^2$) |
|---|---|---|---|
| Neighbourhood Park | 25 | 10 | 250 |
| Community Park | 90 | 40 | 3,600 |

The drainage areas to the public infiltration galleries includes road drainage. To provide some quality treatment of the runoff prior to infiltration, CB-shields (or equivalent) should be considered for catch basins in the catchment.

Per the LID Sizing Table (***Appendix H***), approximately 84% of the target annual infiltration can be achieved using the park infiltration galleries. The results are summarized below in **Table 6-3**.

**Table 6-3: Infiltration Volumes Provided**

| LID Location | LID Infiltration Volume Provided ($m^3$/year) | Percentage of Target Achieved |
|---|---|---|
| Neighbourhood Park | 4,272 | 7% |
| Community Park | 50,109 | 77% |
| **Total:** | **54,381** | **84%** |

The LID design will be further refined through detailed design in coordination with GEI.

## 6.3 CLI-ECA Quality Requirements

Per CLI-ECA requirements, quality control is to be provided for the 90$^{th}$ percentile event (28mm). The Priority 1 and 2 LIDs are outlined in ***Section 6.2*** above, and will provide a portion of the volume requirement. All remaining quality targets for the site will be treated by Priority 3, by the end of pipe facilities. The LID designs will be further refined through detailed design in coordination with GEI.

## 6.4 5mm On-site Retention

Per ***TRCA SWM Criteria***, 5mm of onsite retention is required. In addition to the park infiltration galleries proposed above, rear yard infiltration trenches are proposed to meet the 5mm target. While these facilities are within private ownership and do not count towards CLI-ECA targets, there is insufficient area in the parks to provide the 5mm target in the parks alone. Through detailed design opportunities to provide LIDs within the ROWs instead of the rear yards will be reviewed with the Town.

Per the 5mm target and LID volumes detailed in **Table 6-4** and **Table 6-5** below, approximately 93% of the 5mm target is achieved on site exclusively using LID measures (proposed infiltration galleries in the two parks, and approximately 5,795m of backyard trench). Additional on-site retention is provided by the wetland relocation and compensation block which receives flows from the adjacent backyards.


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**Table 6-4: 5mm Runoff Volume**

| Drainage Area (Ha) | RC | Event (mm) | Total Runoff ($m^3$) |
|---|---|---|---|
| 116.6 | 0.69 | 5 | 3,998 |

**Table 6-5: LID Volumes Provided**

| LID Location | LID Volume ($m^3$) |
|---|---|
| Park Infiltration Galleries | 924 |
| Rear Yard Infiltration Trenches | 2,782 |
| **Total:** | **3,706** |

## 7.0 WATER SUPPLY SERVICING

### 7.1 Water Supply Servicing Design Criteria

The water supply servicing the subject property will be designed according to ***Region Standards***, by taking into consideration watermain sizing, depth, crossings, valves, hydrants, and service connections such that adequate pressures and fire flows can be achieved. Water design flows will be designed with the following criteria shown in **Table 7-1** and **Table 7-2** below.

**Table 7-1: Water Design Criteria**

| DEMAND TYPE | CRITERIA |
|---|---|
| Average Daily Demand - Residential (L/c/d) | 270 |
| Maximum Daily Demand - Residential (L/c/d) | 1.8 x avg. day |
| Peak Hour Demand - Residential (L/c/d) | 3.0 x avg. day |
| Average Daily Demand – Institutional (L/c/d) | 250 |
| Maximum Daily Demand - Institutional (L/c/d) | 1.4 x avg. day |
| Peak Hour Demand - Institutional (L/c/d) | 3.0 x avg. day |


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**Table 7-2: Region of Peel Linear Design Manual Population Densities**

| DEVELOPMENT TYPE | EQUIVALENT POPULATION DENSITY (PERSON / UNIT |
|---|---|
| Single / Semi-detached | 4.2 |
| Townhouse | 3.4 |
| School | ½ the number of students (900 students minimum) |

## 7.2 Existing Water Services

The subject site is located within the Region of Peel's Pressure Zone 6. The existing watermains that are currently available in the vicinity of the development are as follows:

*Centreville Creek Road*

- 200 mm diameter watermain

*The Gore Road*

- 200mm diameter watermain

*Mayfield Road*

- 600mm & 750mm diameter watermains

The existing watermains are illustrated in ***Figure 9***.

## 7.3 External Water Supply Requirements

There are watermains external to the subject site that are proposed to service the Wildfield Village Secondary Plan Area. The proposed watermains with proposed connections to the subject site are as follows:

*Centreville Creek Road*

- 400mm diameter watermain. Design being prepared by Schaeffers Consulting Engineers (Region Project ID 23-5375)

*The Gore Road*

- 600mm diameter watermain. Design being prepared by Schaeffers Consulting Engineers (Region Project ID 24-1193).

Regional mapping illustrating the external watermains is included in ***Appendix F***. The proposed external watermains are illustrated in ***Figure 9***.


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## 7.4 Proposed Water Supply

The water distribution system within the development will be sized to meet the pressures and flows in accordance with ***Region Standards*** and as outlined in the ***OPA FSR*** and ***Phase 2 LSS***. The system will be looped internally in order to provide system security. Preliminary water demand calculations are included in ***Appendix J***.

The development will be connected to Pressure Zone 6 via one (1) connection to the proposed 600mm watermain on The Gore Road, one (1) connection to the proposed 400mm watermain on Centreville Creek Road, and two (2) connections to the existing 200mm watermain on Centreville Creek Road.

The proposed watermain network is illustrated in ***Figure 9.***

# 8.0 SANITARY SERVICING

## 8.1 Region of Peel Sanitary Design Criteria

The sanitary mains will be designed according to ***Region Standards***, as outlined in **Table 8-1** and **Table 8-2**:

**Table 8-1: Wastewater Design Criteria**

| DEMAND TYPE | CRITERIA |
|---|---|
| Average Dry Weather Flow | **Residential**: 290 L/day * Equivalent Population<br>**Non-Residential**: 270 L/day * Equivalent Population |
| Infiltration | 0.00026 $m^3$ per second per hectare |
| Peaking Factor | Peak Flow Factor – Harmon Formula |
| Maximum Capacity Used | Maximum 70% full flow capacity |

**Table 8-2: Region of Peel Linear Design Manual Population Densities**

| DEVELOPMENT TYPE | PEEL STANDARD POPULATION DENSITY (PERSON / HA) |
|---|---|
| Single Family | 50 |
| Single family (Less than 10 m frontage) | 70 |
| Semi-detached | 70 |
| Townhouse / Row Dwellings | 175 |
| Commercial | 50 |

For the purposes of this preliminary analysis, a blended density of 110 people/ha was applied.


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## 8.2 External Sanitary Services

There is a proposed 1200mm sanitary sewer proposed in The Gore Road, with the design being prepared by Schaeffers Consulting Engineers (Region Project ID 24-2274). Excerpts from the latest design received in August 2025 have been included as ***Appendix K***.

The proposed 1200mm sanitary sewer will continue south, connecting with the existing trunk sewer in The Gore Road, south of Mayfield Road.

Regional mapping illustrating the external sanitary trunk is included in ***Appendix F***. The proposed external sanitary trunk is illustrated in ***Figure 10***.

## 8.3 Proposed Sanitary Servicing

The subject site will be serviced by a network of local gravity sewers designed in accordance with ***Region Standards*** and as outlined in the ***OPA FSR*** and ***Phase 2 LSS***. The subject site will drain to the proposed 1200mm sanitary sewer in The Gore Road. The site will drain via a proposed 600mm stub on Street E. Approximately 9.5 Ha from the school and park blocks along the southern boundary of the subject site will drain south to another proposed stub to the Gore Road sanitary trunk, running through other parcels in the Wildfield Village Secondary Plan. Local sanitary sewers are proposed at select locations on Streets B, D, E, and BD where pipe depth exceeds 7.5m.

The conceptual sanitary servicing concept is illustrated on ***Drawing 4*** and preliminary profiles are included in ***Drawings 6, 7,*** and ***8*** which illustrate all sanitary sewers within the subject site. The sanitary design sheets are provided in ***Appendix L***, as well as the Peel Region Connection Demand Table, outlining connection details.

## 8.4 Servicing Blocks & Easements

As noted in ***Section 4.5***, a 7.5m wide servicing block has been proposed (connecting Street L and Street K) to accommodate a 250mm sanitary sewer, a 750mm storm sewer, and overland storm flow.

Additionally, a leg of sanitary sewer has been routed through the outer edge of SWM Pond 7 in an easement. This has been proposed to avoid increasing the depth of the sewer to 10m, which would be required to run the sewer around the pond.

Cross sections of the proposed servicing blocks are outlined in ***Drawing 9***.

# 9.0 ROADS

Access to the subject site is available from the boundary roads, Centreville Creek Road and The Gore Road. The site will include a series of 16m, 18 m, 23.5 m, and 26 m municipal roads in accordance with the modified ROWs prepared through the Transportation Study for the Wildfield Village Secondary Plan Area (BA Group, November 2025) (ROW excerpts are included as ***Appendix M***). The typical ROW sections are illustrated in Figures ***11*** through ***19***. Sidewalks will be constructed in accordance with the standard municipal cross sections. The proposed sidewalks are illustrated in ***Figure 20***.


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Select sections of the 18m and 26m ROWs have been modified to accommodate the CWP as outlined in **Section 4.2.2**.Please refer to ***Figure 2*** for an illustration of the internal road network, and ***Figures 13*** and ***18*** for the modified ROWs featuring the CWP.

Additionally, select sections of the 18m, 23.5m, and 26m ROWs have been modified to accommodate a local sanitary sewer as outlined in ***Section 8.3***. Please refer to ***Figure 4*** for the approximate locations of the local sewers, and ***Figures 14, 16,*** and ***19*** for the modified ROWs featuring the local sewer.

## 10.0 GRADING

A preliminary grading plan has been prepared for the study area based on the environmental and engineering constraints identified above. The proposed road grades range from 0.5% to 5%. The Town of Caledon minimum road grade is 0.75%; however, given the site constraints a minimum slope of 0.5% has been used in localized sections to ensure backyard drainage can be picked up, and to minimize elevation change near boundary roads.

3:1 sloping has generally been implemented adjacent to the boundary roads where required to tie-into existing grades along Centreville Creek Road and The Gore Road.

A localized section of interim 3:1 sloping has been proposed in the southern boulevard of Street D. The interim sloping in the boulevard will avoid a retaining wall against the holdout parcel to the south.

3:1 sloping is proposed along the northern and southern boundaries to tie into existing grades along the property line prior to the development of the adjacent lands.

The conceptual grading is illustrated in ***Drawing 1,*** with cross-sections illustrated in ***Drawing 9,*** and the earthworks illustrated in ***Drawing 10***.

### 10.1 Wetland Relocation & Compensation Block

As detailed through the ***EIS***, a Wetland Relocation & Replication Block is proposed for the replication / relocation of HDF H1S1, and various environmental features. The block includes 10m buffers around the feature. 3:1 sloping has generally been proposed for the 10m buffers, with the slope reduced to a maximum of 5:1 within the actual feature limits. The feature design is outlined through ***Appendix D***.

## 11.0 PHASE 1

Phase 1 generally covers lands draining to SWM Pond 7, as well as the entirety of Street E connecting Centreville Creek Road and The Gore Road, as illustrated in ***Figure 3***. All proposed servicing in Phase 1 will function independently, in advance of future phases:

- Storm/SWM – Drainage will generally be directed to Pond 7 for treatment. Approximately 220 m of Street E drains to an offsite pond. A temporary access road will be constructed for that segment of the road until the ultimate pond is available. The interim neighbourhood park within the community park drains to Pond 6. Treatment for the park will be provided


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by a grassed swale in the interim until the ultimate pond is available. The infiltration gallery in the community park will be constructed with Phase 1.

- Water – Two points of supply to the phase will be provided – via the proposed watermain on The Gore Road and the proposed watermain on Centerville Creek Road.
- Sanitary – The phase will drain to the proposed 1200mm trunk sewer on The Gore Road via the stub in Street E.
- Roads – Two points of road access to the phase will be provided – from The Gore Road at Street E and from Centerville Creek Road at Street E. Temporary cul-de-sacs will be provided at temporary dead ends.
- Grading – Transition sloping will be applied to tie into existing grades around the phase as applicable.

Minor refinements to servicing and grading will be reviewed through detailed design to reflect the project phasing.

## 12.0 POND MAINTENANCE

The following section provides general guidance on pond maintenance for the subject site. Further refinement and details can be provided at detailed design.

### 12.1 Inspections

As recommended in the ***SWMP Manual***, inspections should be made after every significant storm (e.g., >10 mm) during the first two years of operation to ensure that the facility is functioning properly. It is anticipated that four inspections will be required per year. After the initial period, and proper operation has been confirmed, an inspection schedule can be established based on the observed operation of the ponds. Although four inspections per year are recommended, the ponds should be inspected annually as a minimum requirement.

### 12.2 Regular Operation and Maintenance Activities

#### *Grass Cutting*

Grass cutting is not recommended for the ponds. Allowing grass to grow enhances the water quality and provides other benefits. It is understood though, that grass cutting enhances the aesthetics of the facility for nearby residents and therefore, should be done as infrequently as possible.

Grass should not be cut to the edge of the permanent pool and should be done parallel to the shoreline. Grass clippings should be ejected away from the pond.

#### *Weed Control*

If weed control is required to remove a specific species, the weeds should be removed by hand.

#### *Plantings*

Different parts of the SWM ponds will require different vegetative treatments for upland, flood, shoreline and aquatic conditions. Planting methods and any replanting should be carried out in


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accordance with an approved Landscape Design and the recommendations of the ***SWMP Manual***, or as modified by the operating authority.

### *Trash Removal*

Trash and debris should be removed by hand and performed as required based on inspections.

### *Sediment Removal*

In accordance with the ***SWMP Manual,*** it is recommended that the frequency of sediment removal be determined based on a 5% reduction in the total suspended solids (TSS) removal efficiency. The frequency of pond maintenance will be determined at the detailed design stage. It should be noted that routine cleaning of the sediment forebay should allow for less frequent cleaning of the main cell than indicated in the ***SWMP Manual.*** However, the extension of service life prior to cleaning cannot be quantified.

### *Safety*

The ponds should be provided with appropriate signage which warns the public of the presence of deep water and slopes. Landscape drawings are to be prepared with strategic plantings around the perimeter of the pond to discourage direct access to the facility. All inlets, outlets, structures, and headwalls will be provided with the appropriate grates, covers, and safety features to prevent public entry or tampering.

## 13.0 EROSION AND SEDIMENT CONTROL

An erosion and sediment control strategy should be implemented prior to construction of site services. The following measures are recommended:

### *Erosion*

- Regular inspection and monitoring of the erosion and sediment control devices.
- Ensure stabilized soil and slope stability to prevent runoff and stability hazards.
- Cover non-active work faces of stockpiles, excavation areas, all other exposed surfaces of concern with tarps or other appropriate materials as practicable.
- Monitoring the weather forecast daily and plan/schedule work activities with specific consideration of impending weather conditions to prevent events leading towards further erosion.
- Minimize to the extent possible staging and temporary stockpile of soil and other materials.

### *Sediment*

- Silt control fencing and double row silt control fencing with straw bales where required.
- Stone mud mat at the construction entrance.
- Interceptor swale with rock check dam where appropriate.
- Use of the permanent ponds as a temporary silt basin during site construction activities.
- Removal and disposal of the erosion and sediment control devices after the site has been stabilized.


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Please refer to ***Drawing 11*** for details.

## 14.0 CONCLUSIONS

This Functional Servicing and Stormwater Management Report provides an overview of the servicing and stormwater management plan for the subject site in support of the draft plan application. This report demonstrates the availability of water, sanitary, and storm services for the proposed development in accordance with Town of Caledon, Region of Peel, and TRCA criteria and in consideration of applicable guideline documents. This report is to demonstrate functional design concepts only and not to be used for construction.

We trust you will find the contents of this report satisfactory.

Prepared by,
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