

# Town of Whitchurch-Stouffville 2024 Water and Wastewater Master Plan

Master Plan Report  
Executive Summary  
Post-Filing (March 2024)

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## EXECUTIVE SUMMARY

The 2024 Water and Wastewater Master Plan (the Master Plan) is a comprehensive document that describes the development and selection of the preferred water and wastewater servicing strategies for the Town of Whitchurch-Stouffville (the Town). Solutions developed through the Master Plan aims to meet the servicing needs of existing and future growth to 2051. This Master Plan is compliant with the requirements of the *Environmental Assessment Act* and is being placed on the public record for the prescribed review period.

The Master Plan Report is organized as follows:

- **Section 1.0 Introduction:** Provides an overview of the operation of the water and wastewater system and the related reports completed that are used as a foundation for this Master Plan.
- **Section 2.0 Study Area:** Details the study area of the Master Plan, including the communities within the Town of Whitchurch-Stouffville, description of the Regional Municipality, and the relevant conservation authority jurisdictions.
- **Section 3.0 Background and Planning Framework:** Details the master planning process including the Municipal Engineers Association (MEA) Class Environmental Assessment (EA) process for Master Plans, the problem and opportunity statement, the related legislative and planning context, population and employment growth forecasts, the servicing strategy evaluation process, and the costing methodology.
- **Section 4.0 Water Master Plan:** Provides comprehensive documentation for the water system and details the study objectives, strategic approach, servicing objectives and projections, the technical analyses completed, and the selection of the preferred water servicing strategy. This section details baseline water servicing and performance information. Based on the preferred servicing strategy, the capital program and implementation plan are proposed.
- **Section 5.0 Wastewater Master Plan:** Provides comprehensive documentation for the wastewater system and details the study objectives, strategic approach, servicing objectives and projections, the technical analyses completed, and the selection of the preferred wastewater servicing strategy. This section details baseline wastewater servicing and performance information. Based on the preferred servicing strategy, the capital program and implementation plan are proposed.
- **Section 6.0 Further Considerations:** Details the required approvals and permitting from relevant authoritative bodies, the potential risks, and mitigation measures relevant to the servicing solutions described in Section 4.0 and Section 5.0.
- **Section 7.0 Public Consultation:** Contains all relevant documentation of the public consultation process, including the notices, summary of the public information centres (PICs), any comments and questions received from the public during this master planning process, and meeting held with relevant agencies, approval bodies, and other stakeholders.

## ES 1.0 Introduction

The Town of Whitchurch-Stouffville is located in Southern Ontario within York Region bordering the City of Markham, Town of Newmarket, Town of Aurora, Town of Richmond Hill, the Town of East Gwillimbury and Durham Region. The Town of Whitchurch-Stouffville is comprised of several communities including Stouffville, Ballantrae-Musselman's Lake, Bloomington, Vandorf-Preston Lake and Gormley.

The Town of Whitchurch-Stouffville is part of the Greater Golden Horseshoe (GGH) area situated around the southern end of Lake Ontario that continues to be one of the fastest growing regions in North America. The Growth Plan for the GGH, prepared under the Government of Ontario's legislative Places to Grow Act 2005, identifies substantial population and employment growth for the GGH to the year 2051.

The Town of Whitchurch-Stouffville municipal water and wastewater services are operated under a two-tiered system. York Region is responsible for water treatment and supply, transmission mains, storage facilities and booster pumping stations, as well as wastewater treatment and trunk collection system. The Town is responsible for the operation and maintenance of the local water distribution system and local sewer collection systems.

Readily available and accessible public infrastructure is essential to the viability of existing and growing communities. Infrastructure planning, land use planning and infrastructure investment require close integration to ensure efficient, safe, and economically achievable solutions to provide the required water and wastewater infrastructure. To balance the needs of growth with the protection and preservation of natural and socio-cultural resources, the Town of Whitchurch-Stouffville initiated an integrated process to complete an update to the Water and Wastewater Master Plan that will consider growth to 2051.

The Town of Whitchurch-Stouffville retained GM BluePlan Engineering Limited (GM BluePlan) to complete the updates to the Water and Wastewater Master Plan which developed, evaluated, and selected water and wastewater servicing strategies for the Town. The 2024 Water and Wastewater Master Plan used population and employment growth forecasts based on a 2051 planning horizon.

The Study Area for the Master Plan focused on the existing servicing areas within the Communities of Stouffville (water and wastewater servicing) and Ballantrae-Musselman's Lake (water servicing only, wastewater servicing was not considered as part of this Master Plan). Other areas currently without municipal services were reviewed to explore opportunities to bring servicing to these areas.

The 2024 Water and Wastewater Master Plan built on the previous work undertaken as part of the Town's 2018 Water and Wastewater Master Plan and the 2018 Development Charges Background Study Report – Water and Wastewater Servicing. The 2024 Water and Wastewater Master Plan is a critical component in the Town's planning for growth, providing the framework and vision for the water and wastewater servicing needs to the year 2051.

## ES 1.1 Master Plan Objectives

This Master Plan was completed as an Approach 1 of the Master Planning process as set out in the MEA Class EA (October 2000, as amended in 2007, 2011 and 2015) as outlined in *Section A.2.7* (Approach 1 in Appendix 4) of the MEA Class EA based on the strategic level study input. This approach involves the preparation of a Master Plan document at the conclusion of Phase 1 and 2 of the Class EA process. The Master Plan was prepared at a broad level assessment and recognizes that further detailed assessments will be required through separate studies or through an Integrated Planning Approach to satisfy project specific fulfillment of the MEA Class EA requirements for the specific schedule B and C projects and for linear infrastructure located within future roads identified within the Master Plan.

The Master Plan evaluated the ability of existing and planned water and wastewater infrastructure within the Town of Whitchurch-Stouffville to efficiently and effectively service the Town's existing population and forecasted growth to 2051. This Master Plan study incorporated the latest planning information, modelling tools, historical flow and demand data, and servicing studies to complete a full review and update of the servicing strategies.

The key objectives of the Master Plan are as follows:

- Review planning forecasts to 2051 and determine the impacts on servicing needs for the Town's water and wastewater infrastructure;
- Evaluate the ability and constraints of existing and planned water and wastewater infrastructure to efficiently and effectively service the Town's existing users and anticipated growth;
- Undertake a comprehensive review and analysis for both water and wastewater servicing requirements;
- Address key servicing considerations as part of the development and evaluation of water and wastewater servicing strategies including:
  - Level of service to existing users and anticipated future growth to 2051.
  - Review servicing alternatives and explore opportunities to bring servicing to other areas currently without municipal services within the Town.
  - Operational flexibility and system security and reliability.
  - Mitigation of impacts to natural, socio-cultural, and economic environments.
  - Opportunity to meet policy, policy statements, regulations, and technical criteria.
  - Opportunity to optimize existing infrastructure and servicing strategies.
  - Ensure the strategies are cost effective.
- Utilize calibrated water and wastewater hydraulic models for the analysis of servicing alternatives;
- Provide the need, timing and cost of servicing and infrastructure, and establish a complete and implementable water and wastewater capital program;
- Provide consultation and engagement with Indigenous Communities, local residents/businesses and review agencies; and
- Complete the Master Plan in accordance with the MEA Class EA process for Master Plans (Approach 1).

## ES 2.0 Background and Planning Framework

### ES 2.1 Phase 1 – Problem and Opportunity Statement

As part of Phase 1 of the Municipal Class EA process, a problem/opportunity statement provides a clear statement that identifies the opportunities and challenges that are being addressed through the study. The problem / opportunity statement for the Town of Whitchurch-Stouffville Water and Wastewater Master Plan is summarized as follows:

*“The Water and Wastewater Master Plan has been initiated to update the Town’s long-term servicing strategy and capital implementation plan to ensure level of service for existing residents and businesses, to support future growth to 2051, and to consider potential impacts post-2051.”*

The Town of Whitchurch-Stouffville Water and Wastewater Master Plan problem and opportunity statement considers the following strategic goals:

- Consider environmental (natural and socio-economic) impacts and minimize where possible
- Provide system capacity to meet existing and projected growth needs to 2051 and beyond;
- Provide operational flexibility for infrastructure maintenance, inspection and emergency operations;
- Provide infrastructure capacity and flexibility to adapt to climate change (e.g., extreme wet weather events); and
- Minimize total capital, operation and maintenance, and lifecycle costs.

### ES 2.2 Study Area

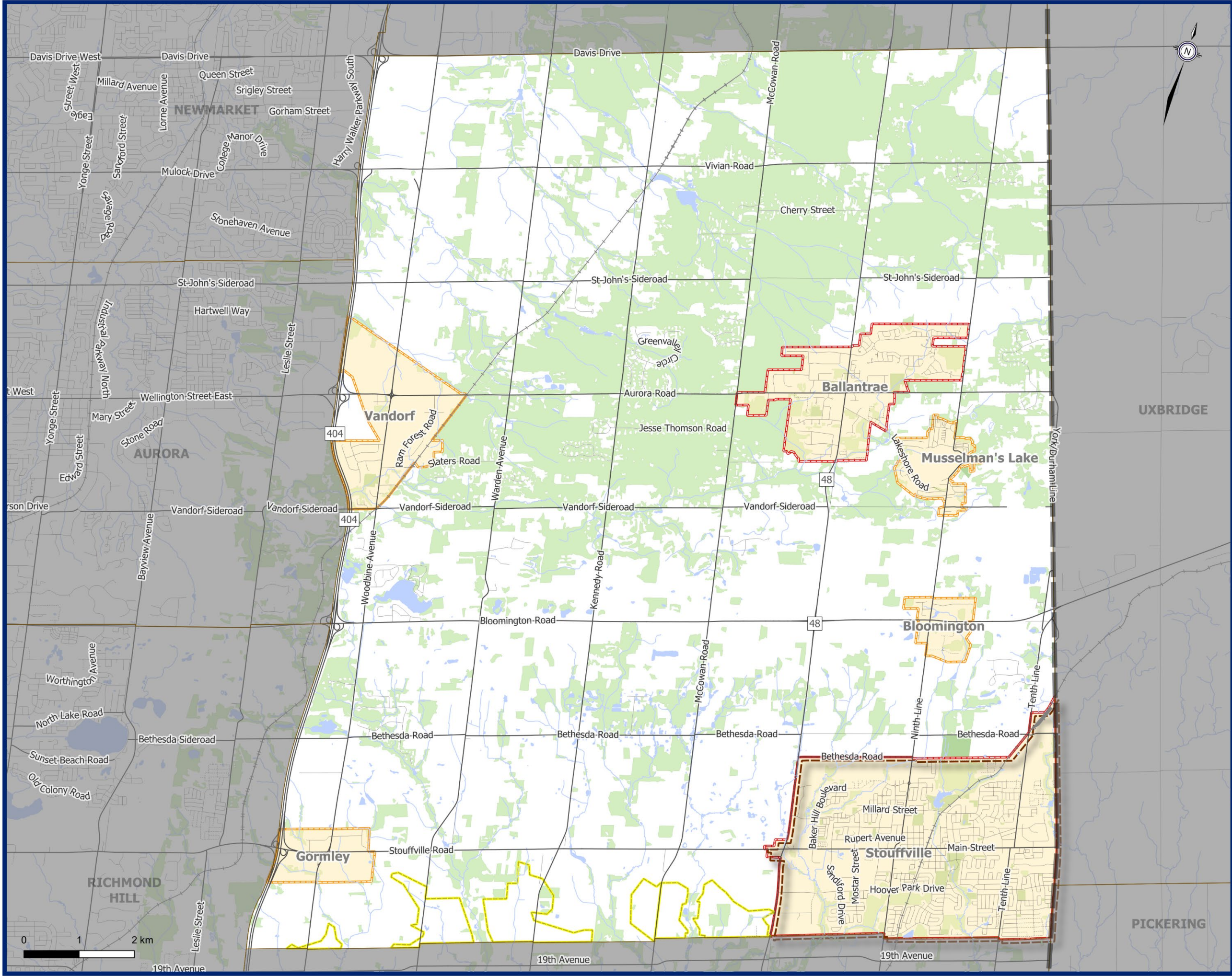
The Town of Whitchurch-Stouffville is located in the Regional Municipality of York, in the southern region of Ontario. The Town is situated in the eastern portion of the Greater Golden Horseshoe (GGH) and has a total area of approximately 220 km<sup>2</sup>.

The study area, provided in **Figure ES 2-1**, covers the entire municipality of the Town of Whitchurch-Stouffville. The servicing study primarily focused on the urban water and wastewater service areas within the Community of Stouffville and the water service area of Ballantrae-Musselman’s Lake. The Master Plan explored, within the context of the existing Provincial Planning Policy, future municipal serving opportunities to settlements that are currently without servicing.

The majority of the Town’s land is agricultural. Approximately 80% of the Town is located within the Oak Ridges Moraine Conservation Plan (ORMCP) jurisdiction. Development within the ORMCP jurisdiction is controlled to ensure the conservation and protection of significant ecological and hydrological features. The Town’s southern area is located within the Rouge River watershed.

The Town resides in two (2) conservation authority jurisdictions; Ballantrae-Musselman’s Lake, and Vandorf are located within the Lake Simcoe Region Conservation Authority (LSRCA) jurisdiction. The Community of Stouffville, Gormley, Bloomington and Preston Lake are located within the Toronto and Region Conservation Authority (TRCA) jurisdiction. The Conservation Authorities Act provides for regulations that restrict development in areas adjacent to wetlands, watercourses, and hazard lands.





-  Towns and Villages
-  Hamlets
-  New Urban Area
-  Urban Area
-  Railway
-  Wooded Areas and Parks
-  Waterbodies
-  Municipal Boundary
-  Regional Municipal Boundary

Figure ES 2-1

**Study Area**

Town of Whitchurch-Stouffville



## ES 2.3 Planning and Growth Projections

The 2019 Provincial Growth Plan provides population and employment growth forecasts to 2041. Amendment 1 was released in 2020 and updated the planning horizon to 2051. Based on the need to conform to Amendment 1, the Region updated their Official Plan which provided updated residential and employment growth forecasts to the year 2051.

**Table ES 2-1: Projected Residential and Employment Planning Estimates<sup>1</sup>**

| Municipality / Year            | Res 2021  | Res 2051  | Emp 2021 | Emp 2051 |
|--------------------------------|-----------|-----------|----------|----------|
| Town of Whitchurch-Stouffville | 51,400    | 103,500   | 17,000   | 28,400   |
| Region of York                 | 1,209,500 | 2,087,900 | 641,500  | 990,600  |

Planning estimates for the Town of Whitchurch-Stouffville, distributed throughout the hamlets of the Community of Stouffville, Ballantrae, Musselman's Lake, Gormley, Vandorf-Preston Lake and Bloomington, is the basis for the water and wastewater demand and flow projections for the 2024 Master Plan. **Table ES 2-2** and **Table ES 2-3** and provide an overview of the projected residential and employment estimates to 2051.

For the purpose of this study, 2021 was used as the base year. The total 2051 planning estimates (residential and employment) is 133,473.

**Table ES 2-2: Projected Residential Planning Estimates to 2051**

|                      | 2021          | 2026          | 2031          | 2036          | 2041          | 2046          | 2051           |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Ballantrae           | 3,637         | 3,927         | 4,398         | 4,536         | 4,536         | 4,408         | 4,567          |
| Bloomington          | 313           | 419           | 423           | 431           | 435           | 440           | 443            |
| Gormley              | 124           | 124           | 120           | 116           | 115           | 114           | 112            |
| Musselman's Lake     | 1,679         | 1,679         | 1,679         | 1,679         | 1,679         | 1,679         | 1,679          |
| Other                | 6,995         | 7,032         | 7,056         | 7,080         | 7,089         | 7,097         | 7,104          |
| MZO – Phase 1        | 0             | 0             | 1,460         | 1,460         | 1,460         | 1,460         | 1,460          |
| MZO – Phase 2        | 15            | 3             | 4,671         | 5,539         | 6,407         | 6,407         | 6,407          |
| Whitebelt Lands      | 1,480         | 1,480         | 2,827         | 5,642         | 7,800         | 12,116        | 12,116         |
| Stouffville          | 34,248        | 45,388        | 55,843        | 61,050        | 63,366        | 65,136        | 68,397         |
| Vandorf-Preston Lake | 669           | 669           | 668           | 967           | 1,026         | 1,126         | 1,226          |
| <b>Total</b>         | <b>49,160</b> | <b>60,721</b> | <b>79,145</b> | <b>88,500</b> | <b>93,913</b> | <b>99,983</b> | <b>103,511</b> |

Source: Projected population estimates were provided by the Town of Whitchurch-Stouffville's Planning Department (June 2023 Adjusted).

<sup>1</sup> York Region. 2022 York Region Official Plan'. <https://www.york.ca/york-region/regional-official-plan> (updated June 2022; approved November 2022; file accessed October 2023)

**Table ES 2-3: Projected Employment Planning Estimates to 2051**

|                      | 2021          | 2026          | 2031          | 2036          | 2041          | 2046          | 2051          |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Ballantrae           | 287           | 323           | 331           | 331           | 331           | 331           | 331           |
| Bloomington          | 183           | 200           | 206           | 211           | 211           | 213           | 216           |
| Gormley              | 1,631         | 1,931         | 2,209         | 2,209         | 2,209         | 2,209         | 2,209         |
| Musselman's Lake     | 27            | 27            | 27            | 27            | 27            | 27            | 27            |
| Other                | 1,522         | 1,526         | 1,526         | 1,742         | 1,787         | 1,890         | 1,989         |
| MZO – Phase 1        | 18            | 18            | 18            | 18            | 18            | 18            | 18            |
| MZO – Phase 2        | 474           | 474           | 574           | 574           | 574           | 574           | 574           |
| Whitebelt Lands      | 2,516         | 2,516         | 2,816         | 3,016         | 3,916         | 4,616         | 5,899         |
| Stouffville          | 9,692         | 12,025        | 13,436        | 14,018        | 14,188        | 14,367        | 14,874        |
| Vandorf-Preston Lake | 1,536         | 1,859         | 2,579         | 3,065         | 3,357         | 3,732         | 3,825         |
| <b>Total</b>         | <b>17,886</b> | <b>20,899</b> | <b>23,722</b> | <b>25,211</b> | <b>26,618</b> | <b>27,977</b> | <b>29,962</b> |

Source: Projected employment estimates were provided by the Town of Whitchurch-Stouffville's Planning Department (June 2023 Adjusted).

## ES 2.4 Master Plan Servicing Principles and Policies

Development of water and wastewater principles and policies are integral to provide guidelines and direction to the Master Plan process, as well as to the identification and development of servicing strategies. Through the course of the Master Plan, priority policy areas were brought forward including:

- Health and safety;
- System reliability and security;
- Reserve capacity for operational flexibility and level of service;
- Impacts of climate change;
- Source water protection;
- Considerations to energy use and efficiency;
- Recognition of impacts from water efficiency and conservation; and
- Addressing issues related to the full lifecycle of water and wastewater services.

## ES 2.5 Servicing Strategy Development

Opportunities and constraints for the water and wastewater systems were identified at the outset of the Master Plan and were used as a starting point for identifying servicing alternatives. The identification and assessment of servicing alternatives is a critical component of the master planning process. It enables a comprehensive review of various servicing solutions and should be documented to ensure the process has been carried out in a transparent and defensible manner.

The 2024 Master Plan revisited concepts and strategies outlined in the 2018 Master Plan from a new perspective to take into consideration key changes that are critical for the Town's long-term infrastructure plan. Water and wastewater alternative servicing strategies were reviewed for existing and future growth areas in order to select the servicing strategies that:

- Make best use of existing infrastructure to avoid new infrastructure where possible,
- Minimize cost of new infrastructure,
- Consider operation and maintenance costs to ensure financial sustainability,
- Ensure long term reliability and security of the water and wastewater system, and
- Avoid / minimize environmental crossings and other disruptions to the environment.

The following provides a list of key changes from the previous 2018 Master Plan:

- New planning horizon to 2051 with updated planning projections,
- New approved growth areas including the MZO lands,
- Updated to the master plan evaluation criteria, and,
- Increased focus on climate change adaptation.

The strategy development approach described in the Master Plan was designed to ensure a logical and transparent process that documents the evaluation and decision-making used to develop the long term implementation plan and capital program. Sustainability policies and principles were also considered in the development of the 2024 Master Plan and were integrated within the strategy development, such as:

- Ensure compliance with provincial, regional and local planning and land use policies.
- Provide system capacity to meet existing and projected growth needs to 2051 and beyond including new urban growth areas approved by the Province of Ontario.
- Making best use of existing infrastructure.
- Minimizing the cost of new infrastructure.
- Considering operation and maintenance costs to ensure financial sustainability.
- Ensuring the long-term reliability and security of the water and wastewater systems.
- Increasing system resiliency to climate change.
- Avoiding disruptions to natural and cultural heritage resources.
- Minimizing environmental crossings and other disruptions to the environment.
- Planning for future infrastructure within the existing and future road right-of-way, where possible.
- Avoiding / reducing production of greenhouse gas (GHG) emissions.
- Preventing impact to areas that could represent a significant drinking water threat.

## ES 3.0 Water Master Plan

The *Water Master Plan* provides an overall review of the water policies and criteria, existing water distribution system, technical analysis, and development of the preferred water servicing strategy for the Town of Whitchurch-Stouffville.

Water policies, design criteria, and level of service requirements were updated as part of this Master Plan to provide guidelines and direction to the master planning process, in addition to ensuring that water demands are adequately representative to support the decision making for sizing and timing of future infrastructure.

Water alternative servicing strategies were identified and reviewed in detail for existing and future growth areas within the Community of Stouffville and Ballantrae-Musselman's Lake, and at a high-level for Gormley, Vandorf-Preston-Lake and Whitebelt Lands. Collectively, all these area specific servicing solutions will form the overall water servicing strategy for the Town of Whitchurch-Stouffville. The following section summarizes the water alternative servicing strategies within the Community of Stouffville and Ballantrae-Musselman's Lake, as well as the high-level servicing review for Gormley, Vandorf-Preston-Lake and Whitebelt Lands.

## ES 3.1 Water Servicing Strategy

### ES 3.1.1 Community of Stouffville

The preferred servicing strategy was developed to ensure that extension of the water distribution system follows the existing sub-trunk looping strategy, that existing infrastructure can support intensification within the downtown core and follows an integrated approach with the Town's state of good repair program.

In general, the water servicing strategy for the Community of Stouffville consists of:

- Aligning the intensification strategy with the ongoing SOGR projects in the downtown core.
- Continuation of the Main Street upgrades. This will significantly improve the available fire flows along the Main Street corridor.
- Build off the existing system configuration of sub-trunk looping. Applying this approach to the proposed Greenfield growth areas will allow for critical looping within each quadrant of the system, along the servicing boundaries. This strengthens the overall system and provides greater operational flexibility.
- Build off the regional storage strategy of supplementing Zone 2 from Zone 1.
- Build off the regional supply strategy of continuing to use the existing Stouffville wells, and supporting increased supply needs by increases in capacity from the Region's Stouffville Zone 2 Pumping Station.
- Continuing to support Zone 1 via the Region's Stouffville Zone 1 WBPS and Z1 elevated tank.
- Providing supply to Stouffville South-West (MZO Lands) mainly via Region's Zone 7 (chloraminated system). Phase 1 of the development near Highway 48 would continue to be serviced via Stouffville Zone 3 (chlorinated system). This is in line with an ongoing MESP (Master Environmental Servicing Plan) that is being undertaken specifically in relation to Stouffville South-West (MZO Lands).



Key capital projects required to achieve this strategy includes:

- 4 km of watermain upgrades along Main Street corridor. Primarily replacing of old cast iron and ductile iron watermain.
- New watermain along Highway 48 to connect Main Street to Zone 3. New PRV required.
- New 300 mm diameter watermain along Bethesda Road, at the northern limits of the servicing boundary, to connect Tenth Line to Highway 48.
- Two new Zone 1 to Zone 2 PRVs.
- Regional increases in supply from the Stouffville Zone 2 Pumping Station and Stouffville Zone 1 WBPS. (Regional)
- Use of the Region's proposed second Zone 2 elevated tank to help support peak hour demands in Stouffville Zone 2&3. (Regional)
- New watermain to service Stouffville South-West (MZO Lands) from the Region's PD7 system. (note interim supply is also being assessed as part of a separate MESP)

### ES 3.1.2 Community of Ballantrae-Musselman's Lake

The water servicing strategy for the Community of Ballantrae-Musselman's Lake consists of strengthening the trunk network from the Musselman's Lake Elevated Tank to the centre of the distribution system.

Key capital projects required to achieve this strategy includes 2 kilometres of new 300 mm diameter watermain twinning along Ninth Line.

### ES 3.1.3 Servicing of Highway 48

It is recommended that the Region and Town complete a joint study to investigate the opportunity to decommission the Highway 48 WBPS and service highway 48 customers from the Ballantrae-Musselman's Lake system.

The water servicing strategy for servicing of Highway 48 customers:

- Improve pressures along Highway 48 and eliminate the operational and maintenance challenges associated with the Highway 48 WBPS by connecting the existing dead end to the Ballantrae-Musselman's Lake system.

Key capital projects required to achieve this strategy includes:

- 1 kilometre of new 250 mm diameter watermain along Highway 48,
- New PRV along Highway 48, in proximity of Bloomington Road, and,
- Decommissioning of Highway 48 WBPS.

### ES 3.1.4 Gormley and Vandorf-Preston

The Master Plan Update recommends that separate studies be carried out to evaluate the viability and selection of the preferred solution for municipal water services for the communities of Gormley and Vandorf-Preston.

### ES 3.1.5 Whitebelt Lands

It is planned to service the Whitebelt Lands via Markham PD7 as recommended in the Regional Master Plan.

In addition to the key capital projects, several other projects and upgrades are included within the water servicing strategy to address existing and future capacity needs within the collection system. The complete Preferred Water Strategy for the Town of Whitchurch-Stouffville is presented in **Figure ES 3-1** and **Figure ES 3-2**. Each capital project is listed along with its respective estimated capital cost.







Proposed Water Infrastructure

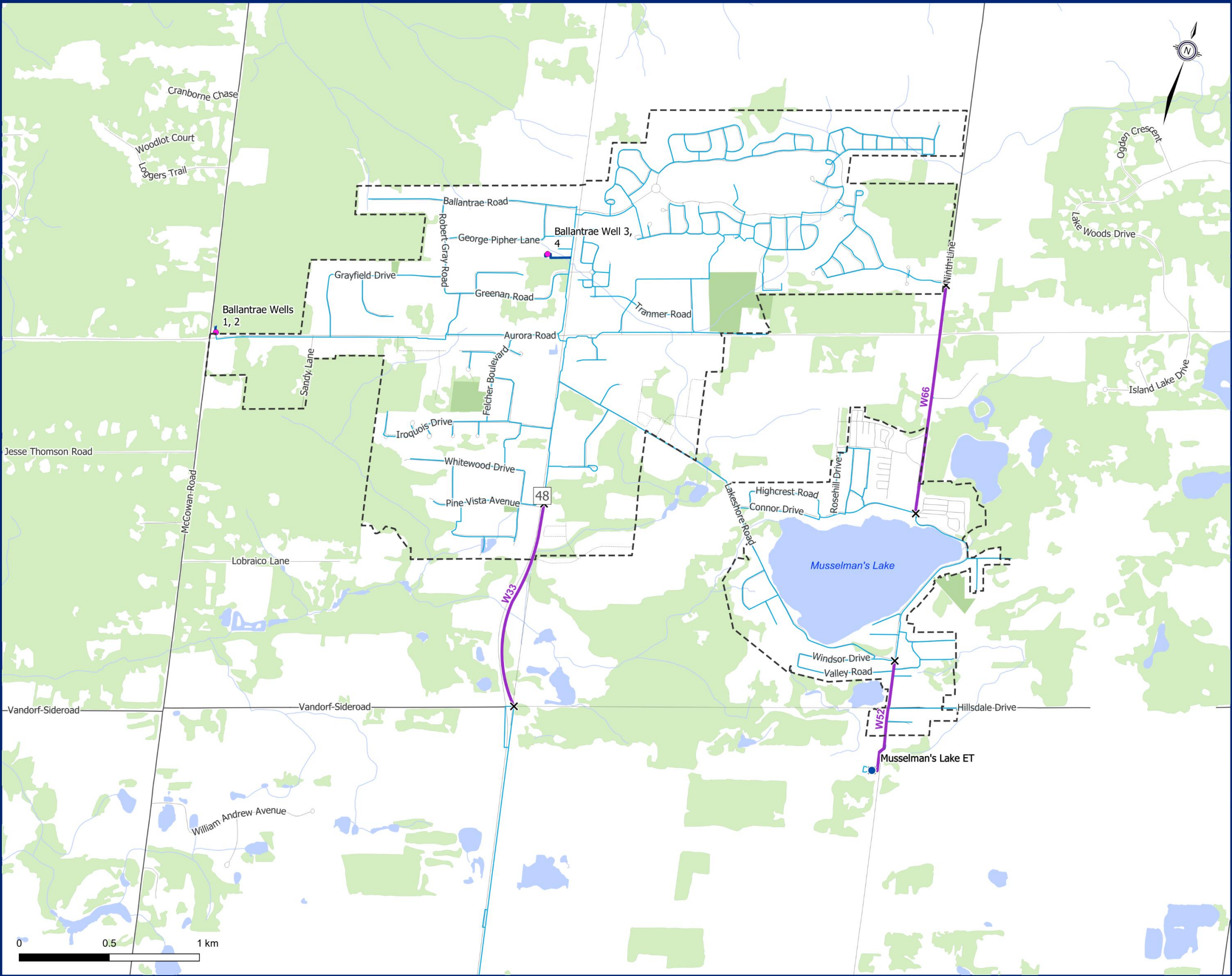
- ✕ Connection Point
- MP Capital Project - Watermain
- Future Local Network

Existing Water Infrastructure

- Elevated Tank (ET)
- Well
- Regional Watermain
- Municipal Watermain

Other Features

- Railway
- Wooded Areas and Parks
- Waterbodies
- Settlement Area Boundary
- Municipal Boundary
- Regional Municipal Boundary



0 0.5 1 km

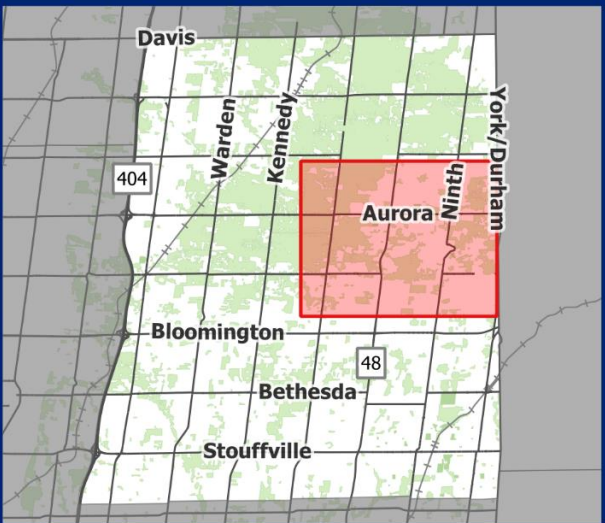


Figure ES 3-2  
**Community of  
Ballantrae-Musselman's Lake  
Preferred Water Servicing Strategy**

## ES 3.2 Water Capital Program

As outlined in the previous sections, the Preferred Water Servicing Strategy has been developed to support the servicing needs of the existing and future growth areas within the Community of Stouffville to 2051. The capital costs for each project of the Preferred Strategy were estimated according to the costing methodology as described in detail in the Master Plan Report. These projects are listed according to their project number and are shown in **Table ES 3-1**. The capital program table contains project descriptions, dimensions, proposed timing, and estimated total project cost.

The water capital program will work as a foundation for the Town of Whitchurch-Stouffville Capital Budget. The capital program provides a list and timing of new assets that the Town will operate and maintain; and therefore, it is the starting point for the planning of operation and maintenance costs and resources allocation for new water infrastructure.

## ES 3.3 Water Implementation Plan

The Water and Wastewater Master Plan sets out to satisfy the Class EA Master Plan Approach 1 requirements according to the MEA Class EA document. The Preferred Water Servicing Strategy will support the servicing needs of the Town of Whitchurch-Stouffville's future growth to 2051. This strategy will be implemented in accordance with each project Class EA schedule.

The Class EA requirements for each project have been identified in the Capital Program. Schedule A and A+ projects may move forward to design and construction, with A+ projects requiring public notification prior to implementation. Schedule B or equivalent projects that have been identified within the Preferred Water Servicing Strategy will be part of a developer-led local servicing plan and approved through the Planning Act Municipal development review process or will be satisfied through separate Class EA study prior to design and construction. The Preferred Water Strategy did not identify any Schedule C projects.

Further, any future Water EA project in the Town of Whitchurch-Stouffville should include the results of other Class EAs projects where applicable. During the next steps of the implementation program, primarily during detailed design of the projects, the following requirements should be considered:

- Communications and engagement,
- Finalization of property requirements,
- Refinement of infrastructure alignment,
- Identification of preferred construction methodologies,
- Completion of additional supporting investigations as required (e.g., natural environment, archaeological, cultural heritage, geotechnical, hydrogeological, etc.),
- Review and mitigation of potential construction related impacts, and,
- Satisfying of all provincial, municipal and conservation authority approval and permitting requirements.

With respect to Town planning and budgeting, this program will be utilized as a high-level baseline estimate for the Town capital budget. These costs will be further developed and refined during the implementation phases as detailed information becomes available.



The anticipated timing of each project within the Preferred Strategy has been established based on the projected population and employment growth within the Town of Whitchurch-Stouffville. The water program's project scheduling has also been cross-referenced with the wastewater program to support project coordination along common alignments.

Given the growth-related nature of the servicing strategies, the water capital program forms the foundation for the water component of the Town of Whitchurch-Stouffville Development Charges (DC) By-Law.

Table 4-10: Water Capital Program

| Master Plan ID | Project Name           | Project Description                                                                                                      | Year in Service | Municipality | Class EA | Size/Capacity | Length (m) | Class Estimate Type | Project Complexity | Area Condition | Base Construction Cost (\$2023) | Crossings (\$2023) | Additional Costs (\$2023) | Soft Costs (Engineering + In-House) (\$2023) | Property Costs (\$2023) | Project Contingency (\$2023) | Non-Refundable HST (\$2023) | Total Estimated Cost (\$2023) |
|----------------|------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|----------|---------------|------------|---------------------|--------------------|----------------|---------------------------------|--------------------|---------------------------|----------------------------------------------|-------------------------|------------------------------|-----------------------------|-------------------------------|
| W01            | Bethesda Side Road #1  | New 300 mm diameter watermain along Bethesda Side Road from W09 to W08. Two creek crossings.                             | 2031-2036       | Stouffville  | A+       | 300 mm        | 845        | Class 4             | High               | Suburban       | 1,009,681                       | 104,544            | 357,000                   | 368,000                                      | 29,000                  | 467,000                      | 39,000                      | \$ 2,374,000                  |
| W02            | Bethesda Side Road #2  | New 300 mm diameter watermain along Bethesda Side Road from W10 to W09                                                   | 2023-2026       | Stouffville  | A+       | 300 mm        | 240        | Class 4             | Med                | Rural          | 243,483                         | -                  | 65,000                    | 74,000                                       | 5,000                   | 58,000                       | 7,000                       | \$ 452,000                    |
| W03            | Bethesda Side Road 3   | New 300 mm diameter watermain along Bethesda Side Road from Ninth Line to W10                                            | 2026-2031       | Stouffville  | A+       | 300 mm        | 695        | Class 4             | Med                | Suburban       | 807,643                         | -                  | 214,000                   | 245,000                                      | 15,000                  | 192,000                      | 25,000                      | \$ 1,499,000                  |
| W04            | Hwy 48 #1              | New 300mm diameter watemain along Hwy 48 from Main Street to Hoover Park Drive. One creek crossing                       | 2023-2026       | Stouffville  | A+       | 300 mm        | 862        | Class 4             | High               | Suburban       | 1,013,515                       | 500,000            | 484,000                   | 500,000                                      | 40,000                  | 634,000                      | 53,000                      | \$ 3,225,000                  |
| W05            | PRV Highway 48         | PRV on Highway 48 south of Stouffville Road/Main Street                                                                  | 2023-2026       | Stouffville  | A+       | -             | -          | -                   | -                  | -              | -                               | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 1,000,000                  |
| W06            | York Durham Line #1    | New 300 mm diameter watermain along Main Street and York Durham Line, from Stouffville Well 1&2 to Loretta Crescent.     | 2031-2036       | Stouffville  | A+       | 300 mm        | 483        | Class 4             | High               | Suburban       | 566,023                         | -                  | 181,000                   | 187,000                                      | 15,000                  | 237,000                      | 20,000                      | \$ 1,206,000                  |
| W07            | York Durham Line #2    | New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and proposed Post Gate Road             | 2031-2036       | Stouffville  | A+       | 200 mm        | 446        | Class 4             | High               | Rural          | 335,734                         | -                  | 107,000                   | 111,000                                      | 9,000                   | 141,000                      | 12,000                      | \$ 716,000                    |
| W08            | Bethesda Side Road #4  | New 300 mm diameter watermain along Bethesda Side Road from W01 to Hwy 48                                                | 2046-2051       | Stouffville  | A+       | 300 mm        | 267        | Class 4             | Med                | Rural          | 269,127                         | -                  | 71,000                    | 82,000                                       | 5,000                   | 64,000                       | 8,000                       | \$ 499,000                    |
| W09            | Future Road #2         | New 300 mm diameter watermain along future road connecting Baker Hill Boulevard to Bathesda Side Road and Main Street    | 2026-2031       | Stouffville  | A+       | 300 mm        | 440        | Class 4             | Med                | Rural          | 433,436                         | -                  | 115,000                   | 132,000                                      | 8,000                   | 103,000                      | 13,000                      | \$ 804,000                    |
| W10            | Future Road #3         | New 300 mm diameter watermain along future road connecting Baker Hill Boulevard to Bethesda Side Road                    | 2026-2031       | Stouffville  | A+       | 300 mm        | 410        | Class 4             | Low                | Rural          | 404,943                         | -                  | 85,000                    | 115,000                                      | 5,000                   | 61,000                       | 11,000                      | \$ 682,000                    |
| W16            | Future Road #9         | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W37 to Bethesda Side Road | 2026-2031       | Stouffville  | A+       | 300 mm        | 870        | Class 4             | High               | Rural          | 841,834                         | -                  | 269,000                   | 278,000                                      | 22,000                  | 353,000                      | 30,000                      | \$ 1,794,000                  |
| W17            | Future Road #10        | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16                | 2026-2031       | Stouffville  | A+       | 300 mm        | 455        | Class 4             | High               | Rural          | 463,223                         | 52,111             | 165,000                   | 170,000                                      | 14,000                  | 216,000                      | 18,000                      | \$ 1,098,000                  |
| W18            | Future Road #11        | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W16                | 2026-2031       | Stouffville  | A+       | 300 mm        | 580        | Class 4             | High               | Rural          | 581,943                         | 52,111             | 203,000                   | 209,000                                      | 17,000                  | 266,000                      | 22,000                      | \$ 1,351,000                  |
| W19            | Future Road #12        | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W17 and W18               | 2026-2031       | Stouffville  | A+       | 300 mm        | 350        | Class 4             | High               | Rural          | 347,957                         | -                  | 111,000                   | 115,000                                      | 9,000                   | 146,000                      | 12,000                      | \$ 741,000                    |
| W21            | PRV Future Road        | PRV west of W34                                                                                                          | 2041-2046       | Stouffville  | A+       | -             | -          | Class 4             | -                  | -              | -                               | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 900,000                    |
| W22            | Main Street            | 300 mm watermain upgrade along Main Street from Ninth Line to Park Drive. One railway and one creek crossing.            | 2023-2026       | Stouffville  | A+       | 300 mm        | 1000       | Class 4             | High               | Urban          | 1,186,336                       | 1,000,000          |                           | 722,000                                      | 58,000                  | 916,000                      | 77,000                      | \$ 4,658,000                  |
| W23            | Second Street          | 200 mm watermain upgrade along Second Street from Ninth Line to Albert Street.                                           | 2023-2026       | Stouffville  | A+       | 200 mm        | 345        | Class 4             | Low                | Urban          | 323,353                         | 104,221            | 90,000                    | 122,000                                      | 5,000                   | 64,000                       | 12,000                      | \$ 720,000                    |
| W24            | Commercial Street      | 150 mm watermain upgrade along Commercial Street from Church Street North to Mill Street                                 | 2023-2026       | Stouffville  | A+       | 150 mm        | 145        | Class 4             | High               | Urban          | 116,571                         | -                  | 37,000                    | 39,000                                       | 3,000                   | 49,000                       | 4,000                       | \$ 249,000                    |
| W25            | Church Street North    | 200 mm watermain upgrade along Church Street North from Main Street to Warriner Street                                   | 2023-2026       | Stouffville  | A+       | 200 mm        | 276        | Class 4             | High               | Urban          | 250,771                         | -                  | 80,000                    | 83,000                                       | 7,000                   | 105,000                      | 9,000                       | \$ 534,000                    |
| W26            | O'Brien Avenue         | 150 mm watermain upgrade along O'Brien Avenue from Main Street to Burkholder Street                                      | 2023-2026       | Stouffville  | A+       | 150 mm        | 231        | Class 4             | High               | Urban          | 187,549                         | 52,111             | 77,000                    | 79,000                                       | 6,000                   | 100,000                      | 8,000                       | \$ 510,000                    |
| W27            | Lloyd Street           | 150 mm watermain upgrade along Lloyd Street from Main Street to Rose Avenue                                              | 2023-2026       | Stouffville  | A+       | 150 mm        | 375        | Class 4             | Med                | Urban          | 298,827                         | 52,111             | 93,000                    | 107,000                                      | 7,000                   | 84,000                       | 11,000                      | \$ 652,000                    |
| W28            | Orchard Park Boulevard | 200 mm watermain upgrade along Orchard Park Boulevard from Main Street to Sunset Boulevard                               | 2023-2026       | Stouffville  | A+       | 200 mm        | 197        | Class 4             | High               | Urban          | 180,610                         | -                  | 58,000                    | 60,000                                       | 5,000                   | 76,000                       | 6,000                       | \$ 385,000                    |

Table 4-10: Water Capital Program

| Master Plan ID | Project Name                       | Project Description                                                                                                                       | Year in Service | Municipality     | Class EA | Size/Capacity | Length (m) | Class Estimate Type | Project Complexity | Area Condition | Base Construction Cost (\$2023) | Crossings (\$2023) | Additional Costs (\$2023) | Soft Costs (Engineering + In-House) (\$2023) | Property Costs (\$2023) | Project Contingency (\$2023) | Non-Refundable HST (\$2023) | Total Estimated Cost (\$2023) |
|----------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|----------|---------------|------------|---------------------|--------------------|----------------|---------------------------------|--------------------|---------------------------|----------------------------------------------|-------------------------|------------------------------|-----------------------------|-------------------------------|
| W29            | PRV Millard Street                 | New PRV on Millard Street and Willoway                                                                                                    | 2023-2026       | Stouffville      | A+       | -             | -          | -                   | -                  | -              | -                               | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 1,000,000                  |
| W30            | Future Road #14                    | New 200 mm diameter watermain along a future road from Forsyth Farm Drive to Auctioneers Crescent                                         | 2026-2031       | Stouffville      | A+       | 200 mm        | 180        | Class 4             | Med                | Rural          | 138,868                         | -                  | 37,000                    | 42,000                                       | 3,000                   | 33,000                       | 4,000                       | \$ 258,000                    |
| W31            | Mill Street                        | 200 mm watermain upgrade along Mill Street from Main Street to George Street                                                              | 2023-2026       | Stouffville      | A+       | 200 mm        | 98         | Class 4             | High               | Urban          | 92,686                          | -                  | 30,000                    | 31,000                                       | 2,000                   | 39,000                       | 3,000                       | \$ 197,000                    |
| W33            | HWY 48 #3                          | New 250 mm diameter watermain along HWY 48 from Spruceview Place to existing dead end.                                                    | 2023-2026       | Ballantrae       | A+       | 250 mm        | 1173       | Class 4             | High               | Rural          | 1,000,800                       | -                  | 320,000                   | 330,000                                      | 26,000                  | 419,000                      | 35,000                      | \$ 2,132,000                  |
| W34A           | Future Road #15                    | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W20. One railway crossing           | 2026-2031       | Stouffville      | A+       | 300 mm        | 408        | Class 4             | High               | Rural          | 418,584                         | 500,000            | 294,000                   | 303,000                                      | 24,000                  | 385,000                      | 32,000                      | \$ 1,958,000                  |
| W34B           | Future Road #15                    | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W19 to W20. One creek crossing.            | 2041-2046       | Stouffville      | A+       | 300 mm        | 889        | Class 4             | High               | Rural          | 875,420                         | 500,000            | 440,000                   | 454,000                                      | 36,000                  | 577,000                      | 48,000                      | \$ 2,932,000                  |
| W36            | HWY 48 #2                          | New 300 mm diameter watermain along Hwy 48                                                                                                | 2046-2051       | Stouffville      | A+       | 300 mm        | 540        | Class 4             | Med                | Rural          | 543,953                         | 52,272             | 158,000                   | 181,000                                      | 11,000                  | 142,000                      | 18,000                      | \$ 1,106,000                  |
| W37            | Future Road #16                    | New 300 mm diameter watermain along future road in northeast corner of Stouffville, connecting W30 to W16                                 | 2026-2031       | Stouffville      | A+       | 300 mm        | 268        | Class 4             | High               | Rural          | 270,077                         | -                  | 86,000                    | 89,000                                       | 7,000                   | 113,000                      | 10,000                      | \$ 576,000                    |
| W38            | York Durham Line #3                | New 200 mm diameter watermain along York Durham Line, between Bethesda Side Road and Main Street                                          | 2026-2031       | Stouffville      | A+       | 200 mm        | 268        | Class 4             | High               | Rural          | 203,997                         | -                  | 65,000                    | 67,000                                       | 5,000                   | 85,000                       | 7,000                       | \$ 434,000                    |
| W39            | Gormely Fire Protection            | New 300 mm diameter fire protection watermain on Stouffville Road from Union Street west                                                  | 2023-2026       | Gormley          | A+       | 300 mm        | 347        | Class 4             | Low                | Suburban       | 411,022                         | -                  | 86,000                    | 117,000                                      | 5,000                   | 62,000                       | 11,000                      | \$ 692,000                    |
| W40            | Gormely Fire Protection            | New 300 mm diameter fire protection watermain on Union Street from Stouffville Street south                                               | 2023-2026       | Gormley          | A+       | 300 mm        | 453        | Class 4             | Low                | Suburban       | 531,831                         | -                  | 112,000                   | 151,000                                      | 6,000                   | 80,000                       | 15,000                      | \$ 896,000                    |
| W42            | Master Plan                        | Water Master Plan (occurs every 5 years at \$300k each)                                                                                   | 2026-2051       | Stouffville      | -        |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$ 1,500,000                  |
| W43            | Future Studies                     | Vandorf Future Service Area Study                                                                                                         | 2026-2031       | Vandorf          | -        |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$ 250,000                    |
| W44            | Future Studies                     | Gormley Future Service Area Study                                                                                                         | 2026-2031       | Gormley          | -        |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$ 250,000                    |
| W45            | Future Studies                     | Whitebelt Lands Future Service Area Study                                                                                                 | 2026-2031       | Whitebelt        | -        |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$ 250,000                    |
| W48            | Stouffville Road                   | 600mm Watermain twinning on Stouffville Road from the Z2 BPS to Hwy48 (Town owned section)                                                | 2036-2041       | Stouffville      | A+       | 600 mm        | 530        | Class 4             | High               | Rural          | 1,301,798                       | 1,490,460          | 894,000                   | 922,000                                      | 74,000                  | 1,170,000                    | 98,000                      | \$ 5,949,000                  |
| W49            | Main Street                        | The existing aged 250mm watermain along Main Street from Hwy 48 to Weldon Road to be upgraded to 300mm                                    | 2041-2046       | Stouffville      | A+       | 300 mm        | 1230       | Class 4             | High               | Urban          | 1,448,471                       | 104,221            | 497,000                   | 513,000                                      | 41,000                  | 651,000                      | 54,000                      | \$ 3,309,000                  |
| W50            | Millard Street and Bearings Avenue | connect the existing 150mm watermain on Bearings Avenue to the existing 300mm watermain on Millard Street to improve resiliency           | 2041-2046       | Stouffville      | A+       | 300 mm        | 10         | Class 4             | Low                | Urban          | 26,937                          | -                  | 6,000                     | 8,000                                        | -                       | 4,000                        | 1,000                       | \$ 46,000                     |
| W51            | Cam Fella Boulevard                | Upgrade to the existing 150mm watermain along Cam Fella Boulevard cul-de-sac to 200mm, , and a new 200mm watermain on easement connecting | 2026-2031       | Stouffville      | A+       | 200 mm        | 350        | Class 4             | Low                | Suburban       | 322,143                         | 42,383             | 77,000                    | 104,000                                      | 300,000                 | 84,000                       | 16,000                      | \$ 944,000                    |
| W52            | Ninth Line                         | New 300mm Watermain twinning on Ninth Line from Musselman Lake to Windsor Drive                                                           | 2023-2026       | Musselman's Lake | A+       | 300 mm        | 660        | Class 4             | High               | Suburban       | 783,293                         | 52,111             | 267,000                   | 276,000                                      | 22,000                  | 350,000                      | 29,000                      | \$ 1,780,000                  |
| W53            | Forsyth Farm Road                  | New 300mm Watermain on Forsyth Farm Road connecting W37 and Existing watermain on Forsyth Farm Road                                       | 2026-2031       | Stouffville      | A+       | 300 mm        | 250        | Class 4             | Med                | Rural          | 252,981                         | -                  | 67,000                    | 77,000                                       | 5,000                   | 60,000                       | 8,000                       | \$ 469,000                    |
| W54            | Forsyth Farm Road                  | New 200mm Watermain on Forsyth Farm Road connecting W37 and future watermain on York Durham Line                                          | 2026-2031       | Stouffville      | A+       | 200 mm        | 220        | Class 4             | High               | Rural          | 174,123                         | 500,000            | 216,000                   | 223,000                                      | 18,000                  | 283,000                      | 24,000                      | \$ 1,437,000                  |



Table 4-10: Water Capital Program

| Master Plan ID     | Project Name            | Project Description                                                                                       | Year in Service | Municipality | Class EA | Size/Capacity | Length (m) | Class Estimate Type | Project Complexity | Area Condition | Base Construction Cost (\$2023) | Crossings (\$2023) | Additional Costs (\$2023) | Soft Costs (Engineering + In-House) (\$2023) | Property Costs (\$2023) | Project Contingency (\$2023) | Non-Refundable HST (\$2023) | Total Estimated Cost (\$2023) |
|--------------------|-------------------------|-----------------------------------------------------------------------------------------------------------|-----------------|--------------|----------|---------------|------------|---------------------|--------------------|----------------|---------------------------------|--------------------|---------------------------|----------------------------------------------|-------------------------|------------------------------|-----------------------------|-------------------------------|
| W55                | Future Road #17         | New 250 mm diameter watermain along future road in northeast corner of Stouffville, connecting W16 to W56 | 2026-2031       | Stouffville  | A+       | 250 mm        | 170        | Class 4             | High               | Rural          | 150,359                         | -                  | 48,000                    | 50,000                                       | 4,000                   | 63,000                       | 5,000                       | \$ 320,000                    |
| W56                | Future Road #17         | New 200 mm diameter watermain along future road in northeast corner of Stouffville, connecting W56 to W07 | 2031-2036       | Stouffville  | A+       | 200 mm        | 170        | Class 4             | High               | Rural          | 137,119                         | 500,000            | 204,000                   | 210,000                                      | 17,000                  | 267,000                      | 22,000                      | \$ 1,357,000                  |
| W57                | Hwy 48                  | New 300mm diameter watermain along Hwy 48 from Hoover Park Dr to new road within MZO 1 lands (Street A)   | 2023-2026       | Stouffville  | A+       | 300 mm        | 900        | Class 4             | High               | Suburban       | 1,041,284                       | -                  | 333,000                   | 344,000                                      | 28,000                  | 436,000                      | 37,000                      | \$ 2,218,000                  |
| W58                | MZO1 Loop               | New 250mm diameter watermain within MZO 1 Lands to new Street A                                           | 2023-2026       | Stouffville  | A+       | 250 mm        | 820        | Class 4             | High               | Rural          | 707,708                         | 42,383             | 240,000                   | 248,000                                      | 20,000                  | 314,000                      | 26,000                      | \$ 1,598,000                  |
| W59                | Future Road #18         | New 300mm diameter watermain within MZO 2 lands connecting W61 and W62                                    | 2031-2036       | Stouffville  | A+       | 300 mm        | 1650       | Class 4             | High               | Rural          | 1,598,189                       | 500,000            | 671,000                   | 693,000                                      | 55,000                  | 879,000                      | 74,000                      | \$ 4,470,000                  |
| W60                | Future Road #19         | New 300mm diameter watermain within MZO 2 lands connecting W61 and south end of W62                       | 2031-2036       | Stouffville  | A+       | 300 mm        | 1400       | Class 4             | High               | Rural          | 1,376,289                       | 552,272            | 617,000                   | 637,000                                      | 51,000                  | 808,000                      | 68,000                      | \$ 4,109,000                  |
| W61                | Future Road #20         | New 300mm watermain within in MZO2 development connecting W59 and W60                                     | 2031-2036       | Stouffville  | A+       | 300 mm        | 350        | Class 4             | Med                | Rural          | 347,957                         | -                  | 92,000                    | 106,000                                      | 7,000                   | 83,000                       | 11,000                      | \$ 646,000                    |
| W62                | McCowan Road            | New 300mm watermain on McCowan Road connecting W59 and W60                                                | 2031-2036       | Stouffville  | A+       | 300 mm        | 760        | Class 4             | High               | Suburban       | 881,724                         | -                  | 282,000                   | 291,000                                      | 23,000                  | 370,000                      | 31,000                      | \$ 1,879,000                  |
| W63                | McCowan Road            | New 300mm watermain on McCowan Road from new pumping station to MZO2 development                          | 2031-2036       | Stouffville  | A+       | 300 mm        | 505        | Class 4             | High               | Suburban       | 591,097                         | -                  | 189,000                   | 195,000                                      | 16,000                  | 248,000                      | 21,000                      | \$ 1,259,000                  |
| W66                | Ninth Line              | New 200mm Watermain twinning on Ninth Line from Cedarvale Boulevard to Legendary Trail                    | 2031-2036       | Stouffville  | A+       | 200 mm        | 1300       | Class 4             | High               | Suburban       | 1,160,202                       | -                  | 371,000                   | 383,000                                      | 31,000                  | 486,000                      | 41,000                      | \$ 2,471,000                  |
| W67                | MZO1 Loop               | New 200mm diameter watermain within MZO 1 Lands along new Street A from W58 to W57.                       | 2023-2026       | Stouffville  | A+       | 200 mm        | 270        | Class 4             | High               | Rural          | 211,128                         | 500,000            | 228,000                   | 235,000                                      | 19,000                  | 298,000                      | 25,000                      | \$ 1,516,000                  |
| W68                | MZO1 Servicing          | New 250mm diameter watermain within MZO 1 Lands along new Street A from W58 to the West                   | 2023-2026       | Stouffville  | A+       | 250 mm        | 200        | Class 4             | Low                | Rural          | 175,796                         | -                  | 37,000                    | 50,000                                       | 2,000                   | 27,000                       | 5,000                       | \$ 297,000                    |
| W69                | Future Railway Crossing | New 300mm watermain connecting W18 and W34 crossing the Go Transit Railway                                | 2026-2031       | Stouffville  | A+       | 300 mm        | 650        | Class 4             | High               | Rural          | 648,427                         | 500,000            | 367,000                   | 379,000                                      | 30,000                  | 481,000                      | 40,000                      | \$ 2,447,000                  |
| W70                | Water Meter AMI         | 7 antennas/towers for water meter AMI                                                                     | 2026-2051       | Stouffville  | -        |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$ 475,219                    |
| Total Program 2051 |                         |                                                                                                           |                 |              |          |               |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$79,476,219                  |

## ES 4.0 Wastewater Master Plan

The *Wastewater Master Plan* provides an overall review of the wastewater policies and criteria, existing wastewater collection system, technical analysis, and development of the preferred wastewater servicing strategy for the Town of Whitchurch-Stouffville.

Wastewater policies, design criteria, and level of service requirements were updated as part of this Master Plan to provide guidelines and direction to the master planning process, in addition to ensuring that wastewater flows are adequately representative to support the decision making for sizing and timing of future infrastructure.

Specific servicing principles and policies have been developed to guide and provide direction for the development of wastewater servicing strategies. In general, the Town of Whitchurch-Stouffville is looking to build and maintain efficient, reliable, sustainable and well managed wastewater systems that provide high level of service to the public.

### ES 4.1 Wastewater Servicing Strategy

Several separate wastewater servicing strategies are recommended throughout the Town of Whitchurch-Stouffville that collectively form the overall preferred wastewater strategy to service the projected growth to 2051. The preferred servicing strategy was developed to ensure that the extension of the existing wastewater collection system is aligned with existing planning policies, designates residential and employment growth areas and can support intensification.

The primary objective of the wastewater servicing strategy is to build off the configuration of the existing system within the Town of Whitchurch-Stouffville. Since only the Community of Stouffville has municipal wastewater services, the wastewater strategy focuses on this key area.

The Master Plan Update recommends that a separate study be carried out to evaluate the potential for municipal wastewater services for the communities of Gormley, Vandorf-Preston and the expanded urban area in the Whitebelt.

In general, the wastewater servicing strategy for the Community of Stouffville consists of the following:

- Intensification along the Main Street corridor will be serviced by existing infrastructure.
- Flows from new growth southeast will be conveyed west to the YDSS trunk sewer by gravity through the new subtrunk 2.
- Flows from new growth areas in the north will be conveyed south to the YDSS trunk sewer through subtrunk 10 (north-west), subtrunk 1 (east) and subtrunk 3 (central).
- Design and construction of subtrunk 1 will allow for the potential decommission of the private Northern Gate WWPS and Eastern Gate WWPS if required.
- Sewer upgrade on Stouffville Road west of Highway 48 to accommodate additional flows from intensification.
- Flows from areas west of Little Rouge River will be conveyed west and south via a proposed subtrunk along Nineteenth Avenue and via a proposed Regional trunk sewer on McCowan Road.
- Providing service to Stouffville South-West (MZO Lands) via a proposed Regional trunk sewer along Nineteenth Avenue and McCowan Road.

Key capital projects required to achieve this strategy include the following:

- Subtrunk 2 extension to service southeast growth areas.
- Subtrunk 1 extension up to Tenth Line to service northeast growth areas.
- New subtrunk 15 and connection to subtrunk 1.
- Decommissioning of the Rougeview WWPS.
- Sewer upgrade on Stouffville Road west of Highway 48.
- Extension of subtrunk 9 to a new trunk sewer along Nineteenth Avenue and McCowan Road.
- New trunk sewer along Nineteenth Avenue and McCowan Road. (Regional)

In addition to the key capital projects, several other projects and upgrades are included within the wastewater servicing strategy to address existing and future capacity needs within the collection system. The complete Preferred Wastewater Strategy is shown in **Figure ES 4-1**.



**Proposed Wastewater System**

-  Decommissioned Sanitary Pumping Station (SPS)
-  Connection Point
-  MP Capital Project - Stouffville
-  Future Local Collection
-  MP Capital Project - Outside of Stouffville

**Existing Wastewater System**

-  Regional Sanitary Pumping Station (SPS)
-  Private Sanitary Pumping Station (SPS)
-  Forcemain
-  Gravity Main (Regional)
-  Siphon
-  Gravity Main (Municipal)

**Other Features**

-  Railway
-  Wooded Area and Parks
-  Waterbodies
-  Settlement Area Boundary
-  Municipal Boundary
-  Regional Municipal Boundary

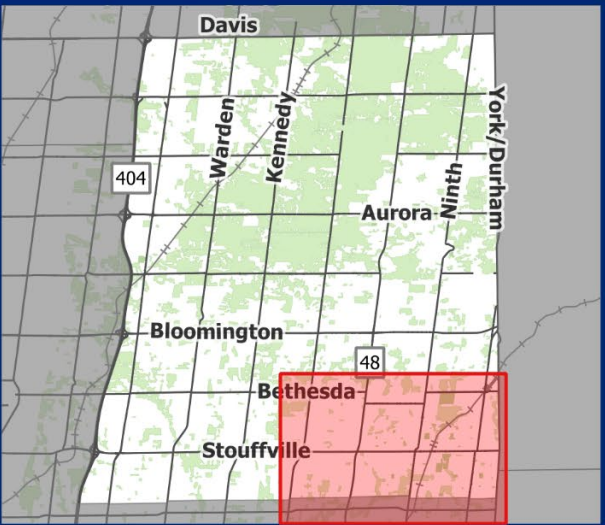
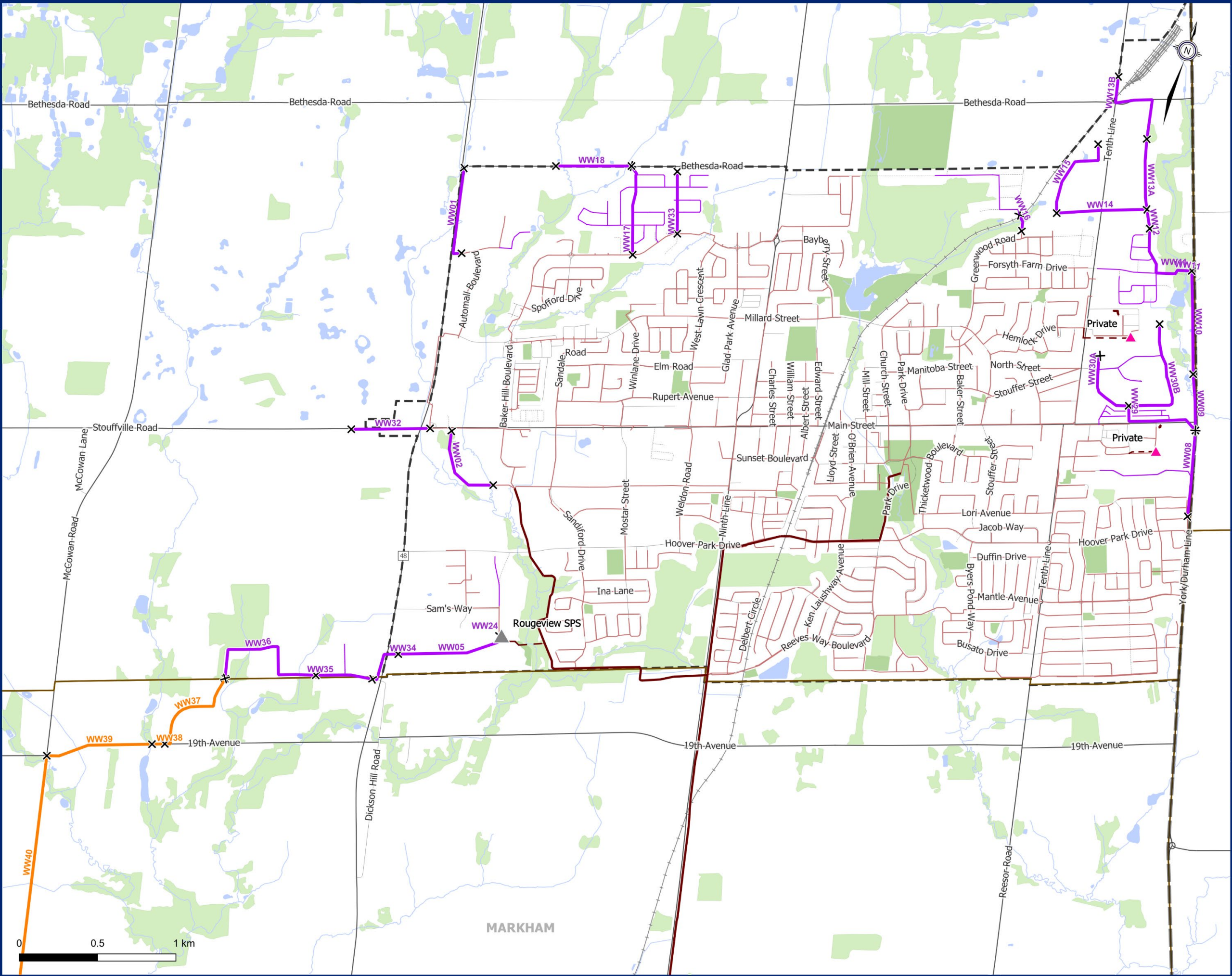


Figure ES 4-1

**Community of Stouffville Preferred Wastewater Servicing Strategy**





## ES 4.2 Wastewater Capital Program

As described in the previous section, the Preferred Wastewater Servicing Strategy has been developed to support the servicing needs of the existing and future growth areas within the Community of Stouffville to 2051. The capital costs for each project of the Preferred Strategy were estimated according to the costing methodology as detailed further in the Master Plan Report. These projects are listed according to their project number and are shown in **Table ES 4-1**. The capital program table contains project descriptions, dimensions, proposed timing, and estimated total project cost.

The wastewater capital program will work as a foundation for the Town of Whitchurch-Stouffville Capital Budget. The capital program provides a list and timing of new assets that the Town will operate and maintain; and therefore, it is the starting point for the planning of operation and maintenance costs and resources allocation for new wastewater infrastructure.

## ES 4.3 Wastewater Implementation Plan

The Water and Wastewater Master Plan sets out to satisfy the EA Approach 1 requirements according to the MEA Class EA document. The Preferred Wastewater Servicing will support the servicing needs of the Town of Whitchurch-Stouffville's future growth to 2051. This strategy will be implemented in accordance with each project Class EA schedule.

The Class EA requirements for each project have been identified in the Capital Program. Schedule A and A+ projects may move forward to design and construction, with A+ projects requiring public notification prior to implementation. Schedule B or equivalent projects that have been identified within the Preferred Wastewater Servicing Strategy will be part of a developer-led local servicing plan and approved through the Planning Act Municipal development review process or will be satisfied through separate Class EA study prior to design and construction. The Preferred Wastewater Strategy did not identify any Schedule C projects.

During the next steps of the implementation program, primarily during detailed design of the projects, the following requirements should be considered:

- Communications and engagement,
- Finalization of property requirements,
- Refinement of infrastructure alignment,
- Identification of preferred construction methodologies,
- Completion of additional supporting investigations as required (e.g., natural environment, archaeological, cultural heritage, geotechnical, hydrogeological, etc.),
- Review and mitigation of potential construction related impacts, and,
- Satisfying of all provincial, municipal and conservation authority approval requirements.

With respect to Town planning and budgeting, this program will be utilized as high-level baseline estimate for the Town capital budget. These costs will be further developed and refined during the implementation phases as more detailed information becomes available.

The anticipated timing of each project within the Preferred Strategy has been established based on the projected population and employment growth within the Town of Whitchurch-Stouffville. The wastewater program's project scheduling has also been cross referenced with the water program to support project coordination along common alignments.

Given the growth-related nature of the servicing strategies, the wastewater capital program forms the foundation for the wastewater component of the Town of Whitchurch-Stouffville Development Charges (DC) By-Law.

Table 5-10: Wastewater Capital Program

| Master Plan ID | Project Name                            | Project Description                                                                                                             | Year in Service | Class EA                       | Size/Capacity | Depth        | Length (m) | Class Estimate Type | Project Complexity | Area Condition | Base Construction Cost (\$2023) | Crossings (\$2023) | Additional Costs (\$2023) | Soft Costs (Engineering + In-House) (\$2023) | Property Costs (\$2023) | Project Contingency (\$2023) | Non-Refundable HST (\$2023) | Total Estimated Cost (\$2023) |
|----------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------|---------------|--------------|------------|---------------------|--------------------|----------------|---------------------------------|--------------------|---------------------------|----------------------------------------------|-------------------------|------------------------------|-----------------------------|-------------------------------|
| WW01           | Subtrunk 13 Extension                   | 200mm sewer on Highway 48 from Norman Jones Place to Bethesda Road                                                              | 2046-2051       | A+                             | 200 mm        | Sewer 5m     | 600        | Class 4             | Med                | Rural          | 480,271                         | 93,242             | 152,000                   | 174,000                                      | 11,000                  | 137,000                      | 17,000                      | \$ 1,064,000                  |
| WW02           | Subtrunk 11 Extension                   | 250/300mm sewer on future road south of Main Street to YDSS West Trunk Sewer                                                    | 2026-2031       | A+                             | 300 mm        | Sewer 5m     | 545        | Class 4             | High               | Rural          | 484,367                         | 1,000,000          | 475,000                   | 490,000                                      | 39,000                  | 622,000                      | 52,000                      | \$ 3,162,000                  |
| WW05           | Subtrunk 9 Extension                    | 375mm sewer on future road from the existing Rougeview SPS to Highway 48                                                        | 2031-2036       | A+                             | 300 mm        | Sewer 10m    | 700        | Class 4             | High               | Urban          | 3,483,149                       | -                  | 1,115,000                 | 1,150,000                                    | 92,000                  | 1,460,000                    | 122,000                     | \$ 7,422,000                  |
| WW08           | Subtrunk 1 Extension (Part 1 of 6)      | 600mm sewer on York/Durham Line from the existing subtrunk 1 sewer north of Hoover Park Drive to Main Street                    | 2026-2031       | Schedule B Completed           | 600 mm        | Tunnel Sewer | 700        | Class 4             | High               | Urban          | 6,230,263                       | -                  | 1,994,000                 | 2,056,000                                    | 165,000                 | 2,611,000                    | 218,000                     | \$ 13,274,000                 |
| WW09           | Subtrunk 1 Extension (Part 2 of 6)      | 450mm sewer on York/Durham Line from Main Street to the north limit of CamFella development                                     | 2026-2031       | Schedule B Completed           | 450 mm        | Tunnel Sewer | 360        | Class 4             | High               | Suburban       | 3,204,135                       | -                  | 1,025,000                 | 1,057,000                                    | 85,000                  | 1,343,000                    | 112,000                     | \$ 6,826,000                  |
| WW10           | Subtrunk 1 Extension (Part 3 of 6)      | 450mm sewer on York/Durham Line from the north limit of CamFella development to Forsyth Farm Drive                              | 2026-2031       | Schedule B Completed           | 450 mm        | Tunnel Sewer | 660        | Class 4             | High               | Suburban       | 5,874,248                       | -                  | 1,880,000                 | 1,939,000                                    | 155,000                 | 2,462,000                    | 206,000                     | \$ 12,515,000                 |
| WW11           | Subtrunk 1 Extension (Part 4 of 6)      | 450mm sewer on Forsyth Farm Drive from York/Durham Line to Keeler Avenue                                                        | 2026-2031       | Schedule B/Integrated Planning | 450 mm        | Sewer 10m    | 510        | Class 4             | High               | Rural          | 2,022,977                       | 1,433,949          | 1,106,000                 | 1,141,000                                    | 91,000                  | 1,449,000                    | 121,000                     | \$ 7,365,000                  |
| WW12           | Subtrunk 1 Extension (Part 5 of 6)      | 450mm sewer on Keeler Avenue from Forsyth Farm Drive to the connection to subtrunk 15 on future road to the north               | 2026-2031       | A+                             | 450 mm        | Sewer 10m    | 130        | Class 4             | High               | Rural          | 515,661                         | -                  | 165,000                   | 170,000                                      | 14,000                  | 216,000                      | 18,000                      | \$ 1,099,000                  |
| WW13A          | Subtrunk 1 Extension (Part 6 of 6)      | 375mm sewer on future road east of Tenth Line from the connection to subtrunk 15 to Bethesda Road (Deep Excavation Required)    | 2026-2031       | Schedule B Completed           | 375 mm        | Sewer 10m    | 450        | Class 4             | High               | Rural          | 1,722,436                       | -                  | 551,000                   | 569,000                                      | 46,000                  | 722,000                      | 60,000                      | \$ 3,670,000                  |
| WW13B          | Subtrunk 1 Extension (Part 6 of 6)      | 375mm sewer on future road east of Tenth Line from the connection to subtrunk 15 to Bethesda Road (Shallow Excavation Required) | 2026-2031       | Schedule B Completed           | 375 mm        | Sewer 5m     | 660        | Class 4             | High               | Rural          | 625,482                         | 1,000,000          | 520,000                   | 537,000                                      | 43,000                  | 681,000                      | 57,000                      | \$ 3,463,000                  |
| WW14           | Subtrunk 15 (Part 1 of 2)               | 300mm on future road from the connection to subtrunk 1 to the west crossing Tenth Line                                          | 2026-2031       | A+                             | 300 mm        | Sewer 5m     | 580        | Class 4             | High               | Rural          | 515,473                         | 52,111             | 182,000                   | 187,000                                      | 15,000                  | 238,000                      | 20,000                      | \$ 1,209,000                  |
| WW15           | Subtrunk 15 (Part 2 of 2)               | 300mm on future road west of Tenth Line and south of the Go Transit Railway                                                     | 2026-2031       | A+                             | 300 mm        | Sewer 5m     | 610        | Class 4             | High               | Rural          | 542,136                         | -                  | 173,000                   | 179,000                                      | 14,000                  | 227,000                      | 19,000                      | \$ 1,155,000                  |
| WW16           | Subtrunk 3 Extension                    | 300mm sewer from the existing subtrunk 3 sewer north of Greenwood Road to the north side of the Go Transit Railway              | 2026-2031       | Schedule B/Integrated Planning | 300 mm        | Sewer 10m    | 110        | Class 4             | High               | Rural          | 408,998                         | 1,000,000          | 451,000                   | 465,000                                      | 37,000                  | 591,000                      | 49,000                      | \$ 3,003,000                  |
| WW17           | Subtrunk 18                             | 300mm sewer on future road from Baker Hill Boulevard to Bethesda Road (Subtrunk 18)                                             | 2023-2026       | A+                             | 300 mm        | Sewer 10m    | 590        | Class 4             | Med                | Rural          | 2,193,719                       | -                  | 581,000                   | 666,000                                      | 42,000                  | 522,000                      | 67,000                      | \$ 4,071,000                  |
| WW18           | Subtrunk 18                             | 300mm sewer on Bethesda Road from future sewer to the west of the creek (Subtrunk 18)                                           | 2031-2036       | A+                             | 300 mm        | Sewer 5m     | 480        | Class 4             | High               | Rural          | 426,598                         | 186,484            | 196,000                   | 202,000                                      | 16,000                  | 257,000                      | 22,000                      | \$ 1,306,000                  |
| WW24           | Rougeview SPS Decommission              | Rougeview Sanitary Pumping Station Decommission                                                                                 | 2031-2036       | A+                             |               |              |            |                     |                    |                | -                               |                    |                           | -                                            | -                       | -                            | -                           | \$ 450,000                    |
| WW29           | Main Street Sewer                       | 300mm sewer on Main Street from Mohawk Gate to York Durham Line                                                                 | 2031-2036       | A+                             | 300 mm        | Sewer 10m    | 560        | Class 4             | High               | Suburban       | 2,498,608                       |                    |                           | 842,000                                      | 67,000                  | 1,069,000                    | 89,000                      | \$ 5,434,000                  |
| WW30A          | Cam Fella Boulevard Sewer (Part 1 of 2) | 200mm sewer on Cam Fella Boulevard to Main St                                                                                   | 2031-2036       | A+                             | 200 mm        | Sewer 5m     | 450        | Class 4             | Low                | Suburban       | 432,244                         | -                  | 91,000                    | 123,000                                      | 5,000                   | 65,000                       | 12,000                      | \$ 728,000                    |
| WW30B          | Cam Fella Boulevard Sewer (Part 2 of 2) | 200mm sewer on Cam Fella Boulevard to Main St                                                                                   | 2031-2036       | A+                             | 200 mm        | Sewer 5m     | 800        | Class 4             | Low                | Suburban       | 768,434                         | -                  | 161,000                   | 219,000                                      | 9,000                   | 116,000                      | 21,000                      | \$ 1,295,000                  |
| WW31           | Flow Monitoring                         | Flow Monitoring Program (ongoing, 4 more years remaining at \$160k per year)                                                    | 2021-2026       | -                              | -             | -            | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 640,000                    |
| WW32           | Stouffville Road Sewer Upgrade          | the existing 200mm sewer along Stouffville Road to be upgraded to 300mm                                                         | 2036-2041       | A+                             | 300 mm        | Sewer 5m     | 500        | Class 4             | High               | Rural          | 444,373                         | 1,000,000          | 462,000                   | 477,000                                      | 38,000                  | 605,000                      | 51,000                      | \$ 3,078,000                  |
| WW33           | Bona Land Development                   | 375mm sewer on proposed Street A within Bona Land Development                                                                   | 2023-2026       | A+                             | 375 mm        | Sewer 10m    | 400        | Class 4             | Low                | Rural          | 1,531,054                       | -                  | 322,000                   | 436,000                                      | 19,000                  | 231,000                      | 42,000                      | \$ 2,580,000                  |



Table 5-10: Wastewater Capital Program

| Master Plan ID     | Project Name        | Project Description                                                 | Year in Service | Class EA | Size/Capacity | Depth     | Length (m) | Class Estimate Type | Project Complexity | Area Condition | Base Construction Cost (\$2023) | Crossings (\$2023) | Additional Costs (\$2023) | Soft Costs (Engineering + In-House) (\$2023) | Property Costs (\$2023) | Project Contingency (\$2023) | Non-Refundable HST (\$2023) | Total Estimated Cost (\$2023) |
|--------------------|---------------------|---------------------------------------------------------------------|-----------------|----------|---------------|-----------|------------|---------------------|--------------------|----------------|---------------------------------|--------------------|---------------------------|----------------------------------------------|-------------------------|------------------------------|-----------------------------|-------------------------------|
| WW34               | Highway 48 Crossing | 600mm sewer crossing Hwy 48 from Smartcentres to MZO1 lands         | 2031-2036       | A+       | 600 mm        | Sewer 10m | 300        | Class 4             | High               | Rural          | 1,343,061                       | 1,433,949          | 889,000                   | 917,000                                      | 73,000                  | 1,164,000                    | 97,000                      | \$ 5,917,000                  |
| WW35               | MZO1 Lands Sewer    | 600mm sewer of future road                                          | 2023-2026       | A+       | 600 mm        | Sewer 5m  | 365        | Class 4             | Low                | Rural          | 519,506                         | -                  | 109,000                   | 148,000                                      | 6,000                   | 78,000                       | 14,000                      | \$ 875,000                    |
| WW36               | MZO2 Lands Sewer    | 600mm sewer of future road                                          | 2031-2036       | A+       | 600 mm        | Sewer 10m | 930        | Class 4             | High               | Rural          | 4,163,490                       | 553,801            | 1,510,000                 | 1,557,000                                    | 125,000                 | 1,977,000                    | 165,000                     | \$ 10,051,000                 |
| WW41               | Master Plan         | Wastewater Master Plan (occurs every 5 years at \$300k each)        | 2026-2051       | -        | -             | -         | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 1,500,000                  |
| WW42               | Future Studies      | Vandorf Future Service Area Study                                   | 2026-2031       | -        | -             | -         | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 250,000                    |
| WW43               | Future Studies      | Gormley Future Service Area Study                                   | 2026-2031       | -        | -             | -         | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 250,000                    |
| WW44               | Future Studies      | Whitebelt Lands Future Service Area Study                           | 2026-2031       | -        | -             | -         | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 250,000                    |
| WW45               | Flow Monitoring     | Flow Monitoring Program (24 years; annual costs of \$200k expected) | 2026-2051       | -        | -             | -         | -          | -                   | -                  | -              |                                 | -                  | -                         | -                                            | -                       | -                            | -                           | \$ 4,800,000                  |
| Total Program 2051 |                     |                                                                     |                 |          |               |           |            |                     |                    |                |                                 |                    |                           |                                              |                         |                              |                             | \$108,702,000                 |

## ES 5.0 Further Considerations

The *Further Considerations* section provides an overall review of the permits and approvals, and mitigation measures that may be required for the preferred water and wastewater servicing strategy for the Town of Whitchurch-Stouffville.

### ES 5.1 Permits and Approvals

A number of permits and approvals will be required from review and governmental agencies to implement the Preferred Design. The Town of Whitchurch-Stouffville will coordinate with these agencies to ensure any applications and requests are acceptable and submitted at the correct stage of the project.

Permits and approvals include:

- Department of Fisheries and Oceans Canada (DFO);
- Ministry of the Environment, Conservation and Parks;
- Ministry of Natural Resource and Forestry;
- Ministry of Tourism, Culture and Sport;
- Conservation Authorities;
- Regional Municipality Permits;
- Drinking Water Source Protection; and,
- Utilities.

### ES 5.2 Impacts and Mitigation Measures

As an Approach 1 Master Plan Class EA the study has recommended detailed studies to further review the potential impacts and determine appropriate mitigation measures. Desktop studies were completed at a high-level, whose results were used towards the development of the proposed capital programs and implementation plan. These studies include:

- Archaeological and Built/ Cultural Resources Impact Assessments;
- Air Quality, Dust, and Noise Impact Assessments;
- Species at Risk;
- Significant Natural Environmental Features;
- Surface and Groundwater Impact Assessment;
- Contaminated Areas Assessment;
- Traffic Management; and
- Impact to Local Utilities.

## ES 6.0 Engagement and Consultation

Indigenous rightsholders and interest holders, public and stakeholder consultation, engagement and participation are an important component to the success of this study and is mandated as part of the Class EA Process. Given the complexity and potentially sensitive nature of this study, it is imperative that the Master Plan ensures meaningful engagement and communication with interested parties to provide information, listen to, and work to address issues and concerns.

The primary goals and objectives were to:

- Present clear and concise information at key stages of the study process;
- Solicit community, regulatory, Regional and Local staff input;
- Identify concerns that might arise from the undertaking;
- Undertake Indigenous communities' consultation and engagement;
- Consider stakeholder comments when developing the preferred solution; and,
- Meet and exceed Municipal Class EA Consultation requirements.

The study included two Public Information Centres (PIC). The PICs were intended to elicit input on the Class EA process, servicing constraints and opportunities, alternative concepts and proposed strategies to address the servicing challenges and opportunities, and the technically feasible solution.

The Town of Whitchurch-Stouffville coordinated with key stakeholders including Indigenous Communities, City of Markham, City of Pickering, Regional Municipality of York, Toronto and Region Conservation Authority (TRCA), Lake Simcoe Region Conservation Authority (LSRCA), Ministry of Environment, Conservation and Parks (MECP) as well as other interested and potentially impacted stakeholders and rightsholders regarding the evaluation and selection of the preferred strategies.