

GEI Consultants Canada

CITY OF BRANTFORD

Water and Wastewater Master Servicing Plan – Development Charges Update
2025 Amendment

Volume I – Executive Summary

Submitted to:
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1. Introduction and Background

1.1. City of Brantford Context

The City of Brantford is located in southwest Ontario along the banks of the Grand River and is within proximity of the City of Hamilton and the County of Brant. The City of Brantford is a single tier municipality, which owns and is responsible for the planning, construction, and management of the municipal water, wastewater, and stormwater infrastructure.

The City owns and operates its water system, which includes water treatment, storage facilities, pumping stations, and trunk and distribution watermains. The City's water is supplied by a single surface water treatment plant (WTP) that draws water from the Grand River and distributes treated water to its residents, businesses, and other water users.

The City owns and operates its wastewater system, which includes wastewater treatment, pumping stations, and collection and trunk sewers. The City's wastewater is collected and conveyed to a single wastewater treatment plant (WWTP) that treats the City's wastewater before discharging into the Grand River.

The City owns, maintains, and operates the majority of the stormwater collection and management infrastructure, which includes catch basins, storm sewers, ditches, culverts, stormwater management facilities, and other stormwater infrastructure. The entirety of the City is located within the Grand River watershed. The majority of the City's existing stormwater sewers and managed ditches drain directly to the Grand River or the following Grand River tributaries: Phelps Creek, Mohawk Lake and D'Aubigny Creek; however, a significant portion of the City's northeast discharges to local creeks along the City's north and east before discharging into Fairchild Creek.

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, wastewater, and stormwater infrastructure.

To balance the needs of growth with the protection and preservation of natural, environmental, and heritage resources, the City of Brantford completed the preparation of the 2021 Master Servicing Plan Update – 2051 Amendment (2021 MSP Update) for water, wastewater, and stormwater services under the Municipal Engineers Association (MEA) Master Plan Class Environmental Assessment process. This update amended the 2020 MSP to extend the planning horizon to 2051 and was completed in 2021. Since then, comprehensive block plans have identified higher densities than originally assumed, creating a need to reassess servicing capacities. The 2025 MSP Amendment builds upon the 2020 and 2021 plans by incorporating updated growth forecasts, revised density targets, and provincial policy changes. It evaluates

the impacts of increased density and additional growth through sensitivity analysis, updates hydraulic modeling, and identifies associated capital programs and cost implications to inform the City's Development Charges By-law and long-term infrastructure planning.

1.2. Municipal Comprehensive Review

The City of Brantford started its Official Plan Review in 2013. Between 2013 and 2016, completed work included the hosting of visioning sessions, the preparation of technical background papers and the creation of a new Draft Official Plan (Version 1, issued in July 2016). The Official Plan Review was put on hold while the Municipal Boundary Adjustment Agreement, between the City of Brantford and the County of Brant, was finalized and approved by the Province, and pending updates to the Growth Plan for the Greater Golden Horseshoe to which the new Official Plan must conform.

In 2016, the municipal boundary, between the City of Brantford and the County of Brant, was adjusted to secure additional lands for the City's future growth, effective January 1, 2017. These lands are referred to as the Boundary Adjustment Lands.

The municipal boundary adjustment brought new lands into Brantford's municipal boundary; however, this did not automatically include the lands in the City's urban area boundary, also referred to as a Settlement Area boundary. To expand the City's Settlement Area boundary, the Province requires municipalities to conduct a Municipal Comprehensive Review (MCR) as input into their new or amended Official Plan. The MCR is necessary as it determines the extent to which the Settlement Area boundary is to be expanded. Following the completion of the MCR, the new or amended Official Plan can designate urban land uses within the expanded Settlement Area boundary.

The City undertook the MCR and revisions to the 2016 Draft Official Plan to include the Boundary Adjustment Lands. The City of Brantford established an eight-stage study process to complete the Municipal Comprehensive Review and finalize the new Official Plan – entitled **Envisioning Our City**, and a new draft Official Plan was released to the public for review and comment in June 2020. To assist the City in completing a new Official Plan, the City retained a team of consultants led by SGL Planning & Design Inc., and includes The Planning Partnership, Cushman Wakefield, Hemson Consulting, AgPlan Limited, ASI (Archaeological Services Inc.), Ecosystem Recovery Inc., GM BluePlan Engineering, Plan B Natural Heritage, and Dillon Consulting.

The new Official Plan was adopted by City Council in March 2021, approved by the Ministry of Municipal Affairs in August 2021, coming into effect August 5, 2021. The Official Plan has since been amended from time to time, and the current office consolidation is dated August 2025.

GM BluePlan Engineering was retained to support the MCR Study with respect to the determination of the appropriate water, wastewater, and stormwater servicing plan for the

lands to be included within the Settlement Area boundary in the North Brantford and Tutela Heights Boundary Adjustment Lands.

1.3. Master Servicing Plan

In support of the Official Plan Review, and to ensure that infrastructure servicing recommendations to support the new urban land uses are made in a cohesive and integrated manner with the City's long-term servicing needs of the existing system, the City undertook an update to its MSP. In 2021, the MSP was amended to extend the planning horizon to 2051. This update incorporated minimal additional growth beyond 2041 and refined servicing assumptions based on updated population and employment forecasts.

The 2021 MSP Update – 2051 Amendment provided a review, evaluation, and development of water, wastewater, and stormwater servicing strategies to support existing needs and projected growth forecasts based to 2051; including the servicing of new urban land uses within the City's new Official Plan, adopted by Council in March 2021 and came into effect August 5, 2021.

The 2021 MSP Update was completed concurrently with the City's new Official Plan and the Transportation Master Plan Update to enable, where advantageous, alignment of recommended work or capital projects, minimizing potential impacts and disruptions to the public. Following the completion of the 2021 MSP Update to the 2041 growth horizon, updated growth numbers were provided by the Province's Growth Plan to the 2051 growth horizon.

The 2021 MSP Update – 2051 Amendment was a critical component of the City's planning for growth and will provide the framework and vision for the management, expansion and funding of the water, wastewater, and stormwater systems for the entire City to 2051 and beyond.

The 2025 MSP Amendment builds upon these previous MSPs, subsequent monitoring and data collection, studies since 2021, hydraulic modelling calibrations based on system update, and additional evaluations. It considers the impacts of increased density and potential additional growth through the assessment of alternate density targets. The amendment also identifies the associated capital program and cost implications to inform updates to the City's Development Charges By-law.

1.4. Master Servicing Plan Objectives

The MSP Update for water, wastewater and stormwater services comprehensively documents the development, evaluation, and selection of the preferred water, wastewater, and stormwater servicing strategies to meet the servicing needs of existing and future development to 2051 and beyond.

The 2020 MSP Update evaluates the ability of existing and planned water, wastewater, and stormwater infrastructure in the City of Brantford to efficiently and effectively service the City's existing and anticipated growth, including servicing of the new urban land uses within the City's

new Settlement Area boundary in accordance with the draft Official Plan, and to evaluate and develop recommended servicing strategies. The 2025 MSP Amendment builds upon the 2020 and 2021 updates by incorporating revised density targets, updated growth forecasts, and provincial policy changes. It evaluates alternate growth scenarios and selects the High Growth Scenario as the preferred planning basis to ensure resiliency and adaptability. The amendment updates hydraulic modeling, confirms servicing capacity for intensification and greenfield development, and identifies associated capital programs and cost implications to inform the City's Development Charges By-law and long-term financial planning.

The key objectives of the 2025 MSP Amendment are as follows:

Update and refine water and wastewater servicing strategies to reflect higher density targets and provincial policy direction;

- Review and confirm servicing capacity under revised growth scenarios, selecting the High Growth Scenario as the preferred planning basis;
- Consider and incorporate proposed water, wastewater, and stormwater infrastructure needs to support the full buildout lands within the new municipal boundary beyond 2051;
- Maintain level of service objectives while optimizing infrastructure and minimizing under-sizing risks; Complete the MSP in accordance with the MEA Class EA process (further described in **Volume II**);
- Address key servicing considerations as part of the development and evaluation of servicing strategies including:
    - Level of service to existing users and approved growth
    - Operational flexibility and security of supply
    - Mitigation of impacts to natural, social, and economic environments
    - Opportunity to meet policy, policy statements, regulations and technical criteria
    - Opportunity to optimize existing infrastructure and servicing strategies
    - Ensuring the strategies are cost effective
- Consider and develop sustainable servicing solutions;
- Utilize updated industry trends and more detailed information from relevant City studies and projects to provide better capital cost estimates;
- Identify and prioritize capital projects with updated Class 4 cost estimates and escalation factors to ensure financial accuracy;
- Utilize recently completed and on-going projects to update infrastructure status, capacity and cost estimates;
- Provide a framework for implementation and integration with other master plans, including the Transportation Master Plan;
- Incorporate updated hydraulic modelling and system calibrations based on recent monitoring and data collection;
- Align the capital program with the upcoming Development Charges Background Study (2026) and the City's 10-year capital forecast; and

- Continue to support sustainable servicing solutions and resiliency in response to climate growth pressures.

1.5. Master Servicing Plan Documentation Layout

The 2025 MSP Amendment, including all supporting volumes, is the documentation placed on public record for the prescribed review period. This documentation, in its entirety, describes all required phases of the planning process and incorporates the procedure considered essential for compliance with the **Environmental Assessment Act** and fulfils the master servicing plan requirement.

The 2025 MSP Amendment is organized into six volumes as described below.

Volume I – Executive Summary

Volume I provides a brief overview of the 2025 MSP Amendment. It summarizes the information contained in **Volume II, III, IV, V** and **VI**, including problem statement, purpose of the study, significant planning, environmental and technical considerations, description of the analysis performed and final solution and recommendations.

Volume II – Plan & Policy

Volume II details the master planning process; including the Master Plan Class EA process, related studies, legislative, and policy planning context, water, wastewater, and stormwater servicing principles and policies, population and employment growth forecasts, existing environmental and servicing conditions, evaluation methodology, and future considerations.

The appendices in this volume contain relevant baseline and planning information including:

- Appendix A – Traffic Zone Population and Employment Projections
- Appendix B – Principles, Policies, and Level of Service
- Appendix C – Unit Rates

Volume III – Water Master Plan

Volume III consists of the principal document summarizing the study objectives, approach, methodologies, technical analyses, evaluation and selection of the preferred water servicing strategy. This volume outlines the water policies, design criteria and level of service needed to be achieved by the water network. In addition, **Volume III** identifies the existing water network and describes the hydraulic modelling tool used for the analysis. Further **Volume III** outlines the detailed evaluation and decision-making process as well as the preferred servicing strategy and associated capital program and implementation plan.

A significant amount of technical background information has been compiled, which is critical to the development of the Water Master Servicing Plan. This information is included as appendices in **Volume III**. The technical appendices contain relevant project, implementation, and technical analysis information including:

- Appendix A – Water System Schematic

- Appendix B – Traffic Zone Demand
- Appendix C – Expansion Lands Concepts
- Appendix D – Water Treatment Plant Concepts
- Appendix E – Evaluation Tables
- Appendix F – Capital Program Project Sheets
- Appendix G – Treatment Capacity Technical Memorandum

Volume IV – Wastewater Master Plan

Volume IV consists of the principal document summarizing the study objectives, approach, methodologies, technical analyses, evaluation and selection of the preferred wastewater servicing strategy. This volume outlines the wastewater policies, design criteria and level of service needed to be achieved by the wastewater network. In addition, **Volume IV** identifies the existing wastewater network and describes the hydraulic modelling tool used for the analysis. Further in **Volume IV** is the detailed evaluation and decision-making as well as the preferred servicing strategy and associated capital program and implementation plan.

A significant amount of technical background information has been compiled, which is critical to the development of the Wastewater Master Servicing Plan. This information is included as appendices in **Volume IV**.

The technical appendices contain relevant project, implementation, and technical analysis information including:

- Appendix A – Wastewater System Schematic
- Appendix B – Traffic Zone Flows
- Appendix C – Expansion Lands Concepts
- Appendix D – Wastewater Treatment Plant Concepts
- Appendix E – Evaluation Tables
- Appendix F – Capital Program Project Sheets

Volume V and Volume VI were part of the 2020 MSP. The 2025 MSP Amendment did not complete any Stormwater updates or additional Public Consultation; therefore these volumes are not part of this 2025 Amendment Document package. The content of the Volumes as they appeared in the 2020 MSP is outlined below.

Volume V – Stormwater Master Plan

Volume V consists of the principal document summarizing the study objectives, approach, methodologies, technical analyses, evaluation and selection of the preferred stormwater servicing strategy. This volume outlines the stormwater policies, design criteria and level of service needed to be achieved by the stormwater network. In addition, **Volume V** identifies the existing stormwater network and describes the hydraulic modelling tool used for the analysis. Further, **Volume V** outlines the detailed evaluation and decision-making as well as the preferred servicing strategy and associated capital program and implementation plan. The Stormwater

Master Plan will be updated during the 2030 MSP update. Therefore, this volume was not updated as part of the 2025 MSP Amendment.

A significant amount of technical background information has been compiled, which is critical to the development of the Stormwater Master Servicing Plan. This information is included as appendices in **Volume V**. The technical appendices contain relevant project, implementation, and technical analysis information including:

- Appendix A – Key Existing Stormwater Infrastructure Facility Details
- Appendix B – Expansion Lands Subwatershed Study
- Appendix C – Evaluation Tables
- Appendix D – Implementation Plan Detailed Study Overview Sheets
- Appendix E – Capital Program Project Sheets

Volume VI – Public and Agency Consultation

No additional consultation activities were undertaken for the 2025 Amendment; refer to Volume VI of the 2021 MSP Update for consultation documentation.

2. Master Planning Process

Municipalities recognize the benefits of comprehensive, long-range planning exercises that examine problems and solutions for an overall system of municipal services. The Municipal Class EA for Water and Wastewater Projects recognizes the importance of master plans as the basis for sound environmental planning. The Class EA defines master plans as:

"Long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. These plans examine an infrastructure system(s) or group of related projects in order to outline a framework for planning for subsequent projects and/or developments."

Master plans are distinguished from project-specific studies by their broader scope and systems-based focus. Key characteristics of master plans include:

- An emphasis on evaluating an overall infrastructure system or service area rather than individual projects;
- The identification of a range of potential projects distributed geographically across the study area; and
- Recognition that implementation of individual projects may occur incrementally over an extended planning horizon.

In accordance with the Municipal Class EA, a Master Plan must at least satisfy the requirements of Phases 1 and 2 of the Class EA process and incorporate the five key principles of environmental planning. The Master Plan must document public, Indigenous communities and review agency consultation at each phase of the process and a reasonable range of alternative solutions must be identified and systematically evaluated.

2.1. Master Servicing Plan Update Vision Statement

Through the Municipal Class EA process, Phase 1 requires the identification of a problem or opportunity statement that guides the development and evaluation of alternative strategies to address the deficiencies identified in the water, wastewater, and stormwater systems.

The 2020 MSP Update – 2051 Amendment was initiated to:

- Review and integrate the servicing needs to support buildout of the new urban land within the 2017 Boundary Adjustment Lands;
- Review planning forecasts to 2051 and determine the impacts on servicing needs for the City's water, wastewater and stormwater infrastructure;
- Re-evaluate growth needs and water supply and wastewater treatment capacities;
- Review approach and ability to support responsible development and coordinate integrated solutions with growth areas;
- Plan for Buildout that includes flexibility in servicing strategy and understanding of servicing impacts and costs; and,

- Update the long-term financial planning that includes a capital forecast to service existing and support growth and can be used as basis for development charges and rate updates.

The 2025 MSP Amendment builds upon the 2020 and 2021 updates to address new challenges and opportunities arising from higher density targets, revised growth forecasts, and provincial policy changes. It was initiated to:

- Update water and wastewater servicing strategies to reflect intensification and compact development policies;
- Assess and confirm servicing capacity under revised growth scenarios, selecting the High Growth Scenario as the preferred planning basis;
- Incorporate updated hydraulic modelling and system calibrations based on recent monitoring and data;
- Identify and prioritize capital projects with updated Class 4 cost estimates and escalation factors;
- Align the capital program with the upcoming Development Charges Background Study (2026) and the City's 10-year capital forecast;
- Maintain level of service objectives while optimizing infrastructure and minimizing under-sizing risks; and
- Provide a framework for implantation and integration with other master plans

This Master Servicing Plan Amendment represents an update within the framework of the approved Master Plan and does not constitute a new undertaking under the Environmental Assessment Act. The amendment builds upon the existing Class EA process completed for the Master Plan and does not, in itself, trigger a new or separate Class Environmental Assessment.

2.2. Problem and Opportunity Statement

Through the Municipal Class EA process, Phase 1 requires the identification of the problem and opportunity statement that guides the process of establishing preferred strategies to address the deficiencies observed in the water, wastewater, and stormwater systems, the last of which is excluded from this amendment. The following vision statement continues to guide the MSP Amendment, where problems and opportunities are clearly identified through the desire to provide an adequate level of service to users and improve system performance under both current and future conditions.

The Problem and Opportunity Statement is as follows:

Supporting a Strong and Growing Brantford

"To establish a preferred servicing plan for the City's water, wastewater, and stormwater systems that, meets current needs, supports growth and expansion of the City's urban boundary, maintains or improves service levels, considers priority areas of climate change, infrastructure optimization and renewal, and system resiliency."

2.3. Study Area

The City of Brantford is located in southwestern Ontario, 40 kilometers from the City of Hamilton and 120 kilometers from the City of Toronto. The City is situated in the west portion of the Greater Golden Horseshoe (GGH), as shown in **Figure 1**.

The City of Brantford is strategically connected to Cambridge to the north and Simcoe to the south by Highway 24, and to Woodstock in the west and Hamilton to the east by Highway 403. The City is well situated with respect to the industrialized portions of Southern Ontario and the large agricultural industry.

The City of Brantford has a total area of 102.5 square kilometers, including the Boundary Adjustment Lands, with a population of 103,596 people and 36,993 jobs in 2021. The study area covers the water, wastewater, and stormwater systems within the limits of the City.

The water, wastewater, and stormwater study areas including limits of existing infrastructure are as shown in **Figure 2, Figure 3,** and **Figure 4** respectively.

2.3.1. Tutela Heights Existing Water and Wastewater System

Existing residents within the Tutela Heights area are now integrated into the City of Brantford's existing water system. To support the anticipated intensification and growth in the area, it is proposed to upsize the existing watermains on Conklin Road, Mount Pleasant Road, and Tutela Heights Road, and to construct new distribution watermains on Davern Road and the planned Collector Road.

Existing residents within Tutela Heights are serviced by private on-lot septic systems. New growth within the Tutela Heights area will need to be serviced by the municipal wastewater system via an extension of the City's existing wastewater system. The existing septic areas can continue to remain as such; however, the sizing of any existing wastewater infrastructure should consider the future servicing of these septic areas.



General Features

- Expressway / Highway
- Arterial and Collector Roads
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Parks
- Waterbody and Watercourses

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary - Figure 1
Study Area

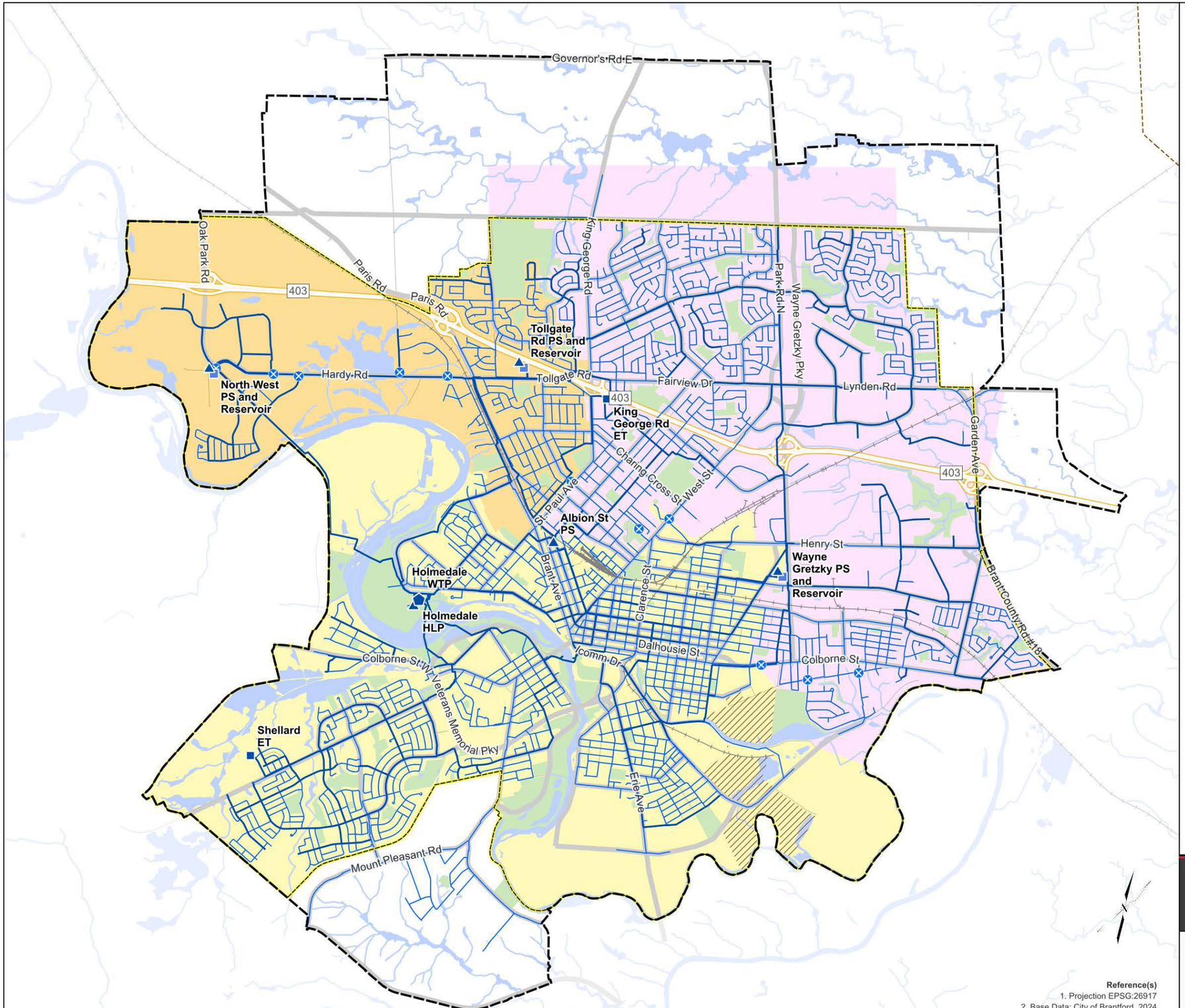
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(Ontario, Canada)

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Water Network

- Water Treatment Plant (WTP)
- Pumping Station (PS)
- Elevated Tank (ET) / Reservoir
- Pressure Reducing Valve (PRVs)
- Transmission Watermains (>250 mm)
- Watermains (≤250 mm)

Water Pressure Districts

- Pressure District 1
- Pressure District 2/3
- Pressure District 4

General Features

- Expressway / Highway
- Arterial and Collector Roads
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Parks
- Waterbody and Watercourses

Executive Summary - Figure 2
Existing Water System

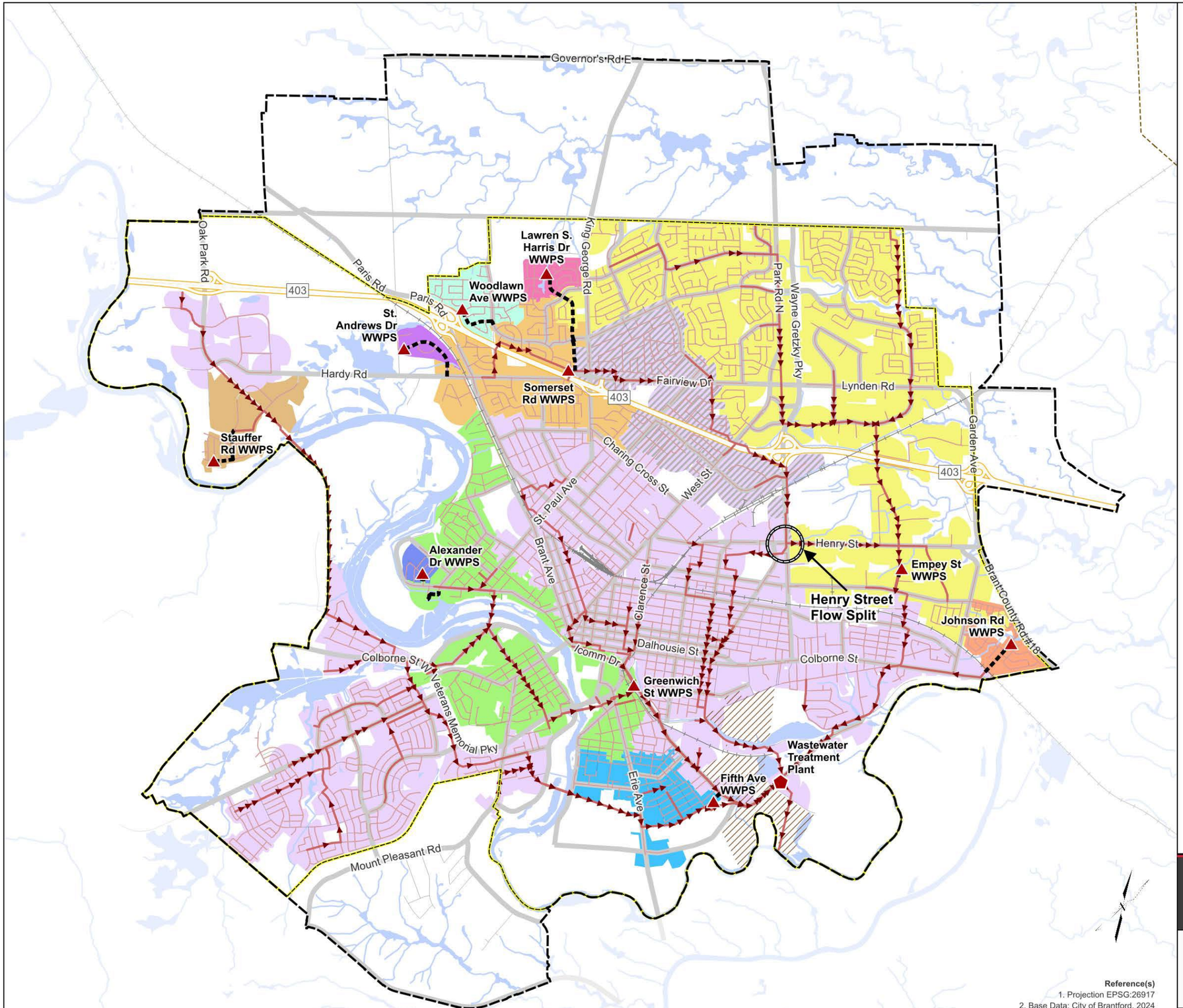
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Client Name:
City of Brantford
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Wastewater Network

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Forcemains
- Trunk Mains (>300 mm)
- Gravity Mains (≤300 mm)

WWPS Catchment

- Alexander Dr WWPS
- Empey St WWPS
- Fifth Ave WWPS
- Greenwich St WWPS
- Johnson Rd WWPS
- Lawren S. Harris Dr WWPS
- Somerset Rd WWPS
- St.Andrew's Ave WWPS
- Woodlawn Rd WWPS
- Upstream of Henry Street Flow Split
- WWTP
- Stauffer Rd WWPS

General Features

- Expressway / Highway
- Arterial and Collector Roads
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Waterbody and Watercourses

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary - Figure 3
Existing Wastewater System

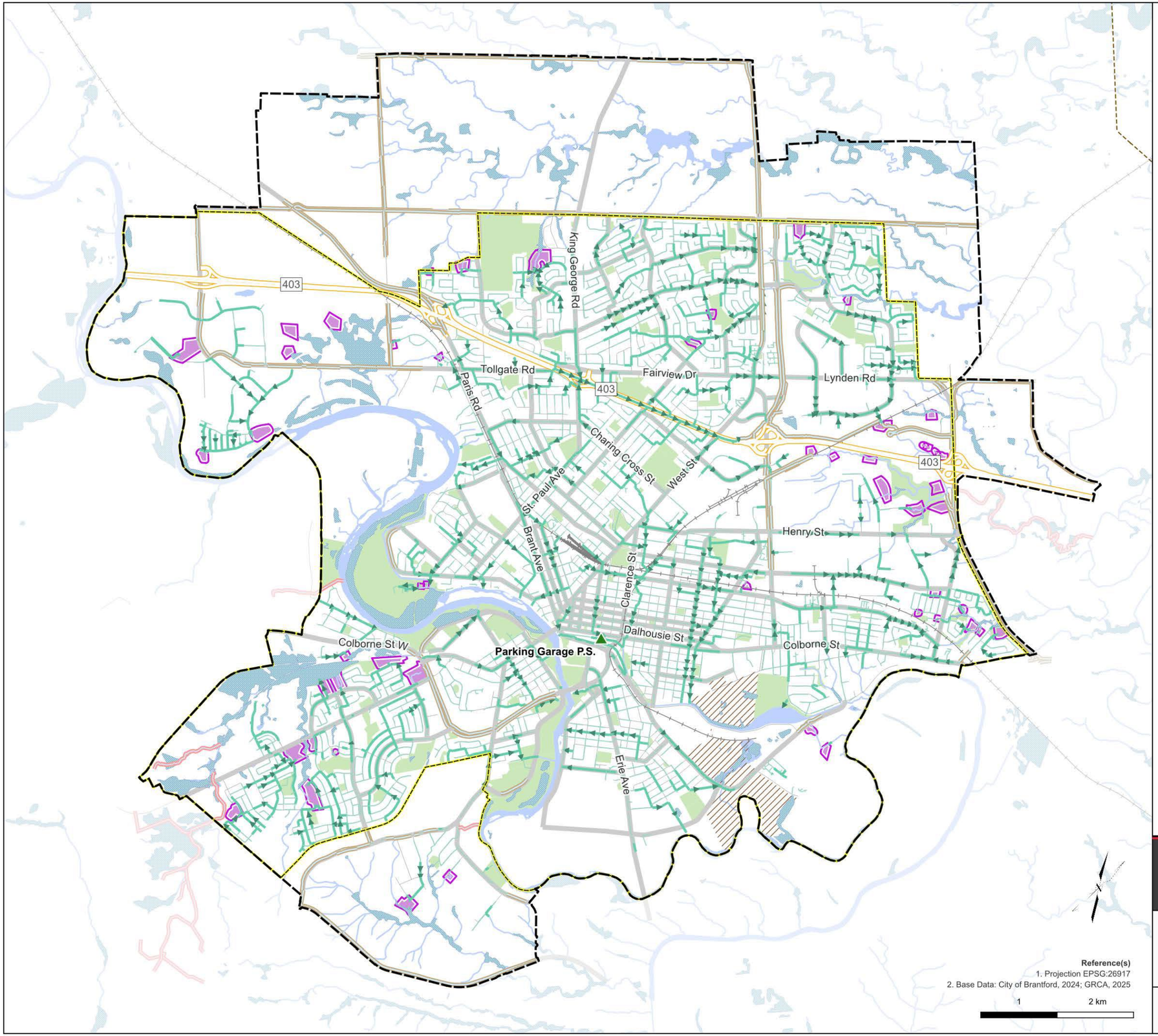
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Stormwater Network

- Pumping Station
- Stormwater Pipes (>=450 mm)
- Stormwater Pipes (<450 mm)
- Ditches
- Municipal Drain
- Detention Ponds

General Features

- Expressway / Highway
- Arterial and Collector Roads
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Wetlands (GRCA)
- Waterbody and Watercourses

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024; GRCA, 2025

1 2 km

Executive Summary - Figure 4
Existing Stormwater System

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford
(Ontario, Canada)

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2.4. Public Consultation

This Master Servicing Plan Amendment represents an update within the framework of the approved Master Plan and does not constitute a new undertaking under the Environmental Assessment Act. The amendment builds upon the existing Class EA process completed for the Master Plan and does not, in itself, trigger a new or separate Class Environmental Assessment. Therefore, additional public and agency consultation was not undertaken as a part of the 2025 MSP Amendment.

As completed per the 2021 MSP, the complete Public Consultation process, including all comments received, is documented in the 2021 MSP's **Volume VI.**

2.5. Infrastructure Funding

After the successful completion of the MSP Amendment, the City will be undertaking a Development Charges Background Study Update, a Water and Wastewater Rate Study, a Stormwater Rate Study, and a Financial Plan Update; these studies will be used to update the City's existing Development Charges, water and wastewater rates, and potentially implement a new stormwater user rate. Consideration for inclusion in the City's Development Charges Bylaw(s) will be completed under the scope of these above referenced studies.

3. Planning Context

A Place to Grow is a growth plan for the Greater Golden Horseshoe within Ontario, first released by the Province of Ontario in 2006. Amendments to the Province's Growth Plan updated the Schedule 3 population and employment forecasts to a 2041 horizon and subsequently the 2051 horizon.

The 2025 MSP Amendment builds upon this framework by incorporating revised density targets and evaluating alternate growth scenarios (Low, Medium, High) through sensitivity analysis. This approach ensures that long-term servicing strategies reflect higher intensification requirements and provincial policy direction introduced in the 2024 Provincial Planning Statement. The amendment confirms the High Growth Scenario as the preferred planning basis and updates hydraulic modeling, servicing capacity, and capital programs to support growth to 2051 and beyond, while maintaining flexibility for post-2051 needs.

3.1. Growth Lands

In 2016, the municipal boundary between the City of Brantford and the County of Brant was adjusted in order to secure additional lands in the City to accommodate future growth, effective January 1, 2017. The boundary adjustment brought new lands into Brantford's municipal boundary. To determine the amount of land needed to accommodate future growth, the City was required to undertake an MCR to inform a new Official Plan. Once completed, the new Official Plan can designate urban land uses within the expanded Settlement Area boundary.

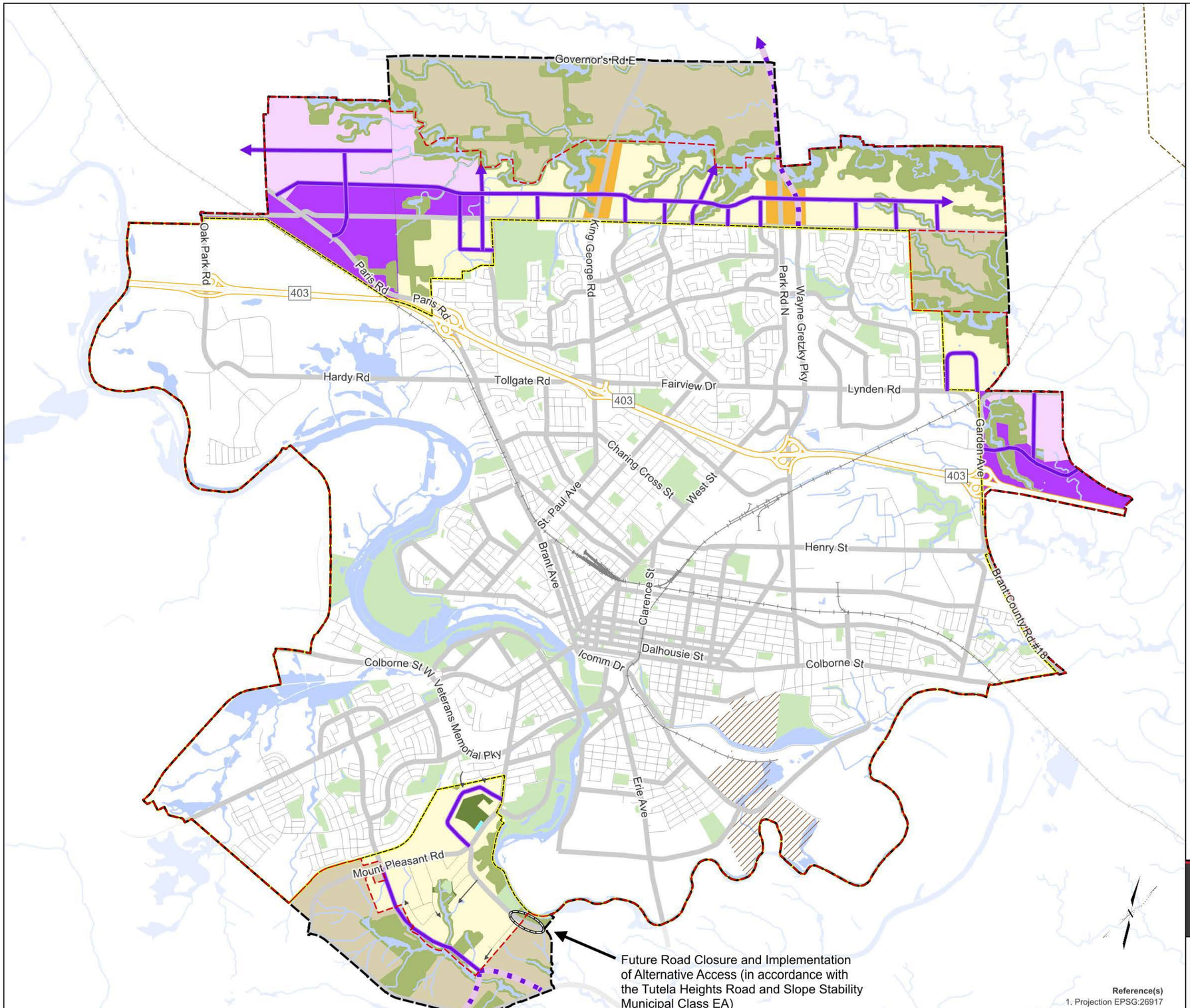
The MCR identified both growth and intensification targets as well as Settlement Area boundary expansion needs. The Settlement Area Boundary Expansion Lands are further subdivided into the following sub-areas:

- North Expansion Lands;
- East Expansion Lands; and,
- Tutela Heights.

Both the East Expansion Lands and Tutela Heights include lands previously within the County of Brant Settlement Area and through the boundary adjustment became part of the City's Settlement Area; however, as these areas require municipal servicing infrastructure, they are included as part of the three expansion sub-areas listed above.

The proposed land use designations, as shown in **Figure 5**, for the Settlement Area boundary expansion areas are presented in Schedule 4: Designated Greenfield Area Structure of the draft Official Plan and generally includes a variation of residential, intensification, and employment areas. Portions of the Settlement Area Boundary Expansion are within the Grand River Conservation Authority (GRCA) floodplain and Natural Heritage System; as such, urban development is not permitted in these areas of the new urban land uses due to their environmental sensitivity and the importance of maintaining the existing land uses. Additionally,

beyond the Settlement Area Boundary Expansion are Lands Outside Settlement Boundary (LOSB), which are lands held for future Settlement Area expansion following substantial development of the current proposed Settlement Area Boundary Expansion areas.



Proposed Preferred Road Options

- Collector Roads
- Major Arterial Roads
- Controlled Access Major Arterial

Proposed Preferred Land Use Options

- Agricultural Designation
- Core Natural Areas Designation
- Downtown Urban Growth Centre Designation
- General Employment Designation
- Intensification Corridor Designation
- Major Commercial Centre Designation
- Major Institutional Designation
- Parks and Open Space Designation
- Prestige Employment Designation
- Residential Designation

General Features

- Expressway / Highway
- Arterial and Collector Roads
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Settlement Area Boundary
- Outside Municipalities
- Parks
- Waterbody and Watercourses

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary - Figure 5
Preferred Land Uses

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford
(Ontario, Canada)

GEI

Last Updated: June 2026
Document ID: 2404322-G-001

Document Path: B:\Working\BRANTFORD ON_CITY OF\2404322 Master Servicing Plan - 2025 Development Charges Update\05_GIS\6_Final Report\2404322-G-001.mxd

The population projections to 2051 for the Expansion Lands within the Settlement Area Boundary are provided in **Table 1**.

Table 1: Expansion Lands Population Projections

Settlement Area Boundary Expansion Lands	Area (ha)	Population		
		Residential[(1)]	Employment[(2)]	Total
North Expansion Lands	1,883	52,816	26,794	79,613
East Expansion Lands	240	4,421	3,496	7,916
Tutela Heights	581	25,461	834	26,294

[(1)] Inclusion of 3% undercount and secondary suite residential population growth distributed within the expansion lands

[(2)] Inclusion of employment no fixed place of work and work from home employment growth distributed within the expansion lands

3.1.1. Population and Employment Growth Analysis

Growth projections for the City of Brantford were provided by SGL and subsequently updated by long-range planning at the City based on the City's Official Plan. SGL distributed the population and employment forecasts and allocated the projections based on Traffic Zone distribution, factoring projected detailed planning information within designated Greenfield Areas, Intensification Corridors, and the Settlement Area Boundary Expansion Lands. **Table 3** presents the population and employment breakdowns and **Appendix A** of **Volume II** provides a detailed breakdown of existing (2021) and 2051 population and employment projections by Traffic Zone.

Since the completion of the 2020 MSP Update and the 2021 Amendment, comprehensive block planning and provincial policy changes have resulted in higher density targets and revised growth assumptions shown in **Table 2**. The 2025 MSP Amendment incorporates these changes through a sensitivity analysis of three growth scenarios - Low, Medium, and High - to evaluate infrastructure needs under varying conditions. The High Growth Scenario was selected as the preferred planning basis to ensure resiliency and minimize under-sizing risks.

Table 2: New Density Targets

Area	Density (people or jobs/ha)		
	Low	Medium	High
Expansion Lands, Greenfield - Res	60	75	90
Expansion Lands, Greenfield - Emp	25	25	30
Tutela Heights	50	65	75
Intensification Corridors	60	80	100
Downtown Core	150	200	250

Table 3: Growth Population Estimates

Total MSP Growth	Population	Employment	Total	Growth from 2021	Additional Growth in LOSB
2021	103,596	36,993	140,589	-	-
2051 (2021 MSP)	164,736	83,362	248,098	107,509	-
2051 – Low	166,684	83,585	250,268	109,679	35,623
2051 – Med	181,651	88,350	270,001	129,412	35,623
2051 – High	196,044	96,792	292,836	152,247	35,623

This analysis confirmed that higher density development accelerates infrastructure triggers and increases capital program requirements. Updated hydraulic modeling and servicing strategies were developed to accommodate these projections.

3.1.2. County Agreements

As part of the 2016 Boundary Adjustment Agreement, the City committed to allowing the County to connect to the City's servicing infrastructure for areas referred to as the Airport Lands and the Cainsville Lands. The services to be connected were wastewater for the Airport Lands and water and wastewater for the Cainsville Lands. This was subject to a number of terms and conditions including that the City would provide adequate capacity to service the areas based on the City's design criteria and subject to both parties entering into a Servicing Agreement.

Under the 2016 Boundary Adjustment Agreement the County would be responsible for constructing the infrastructure to connect to the City's water and wastewater system.

The existing Cainsville water system is currently supplied by the City through an existing 300 mm watermain while the existing wastewater system is serviced by an existing collection and treatment system owned and operated by the County.

The County of Brant undertook a review to evaluate the infrastructure required to service the Airport and Cainsville Lands inline with the 2016 Boundary Adjustment Agreement. The results of the study were presented at the August 14, 2018 County of Brant Public Works Committee meeting (PW-18-69 – Airport and Cainsville Servicing Strategy). The study recommendations were as follows:

- Connecting the Airport Lands to the City's wastewater system will be costly and is not recommended over the next 5-10 years.
- To connect the Cainsville wastewater system to the City's existing 675mm trunk sewer on Colborne Street.
- There are two potential options to support the expansion of the Cainsville water system consisting of:
    - Maintaining the existing single connection on Colborne Street, and construction of a new elevated tank; or
    - Securing a second connection to the City of Brantford system.

As per the County report Phase 1 of the Cainsville Service Area was identified as the first priority for the County. This involves connecting Cainsville wastewater to the City's collection and treatment system and ensuring that the existing water connection to the City's distribution system is adequate. The Airport connection Phases were identified as a lower priority.

3.1.3. Post Period Considerations

The servicing analysis focuses on servicing the buildout of the internal growth and Settlement Area Boundary Expansion Areas to 2051; however, in the development of the recommended servicing strategy and infrastructure sizing, consideration for the full buildout of the City's municipal boundary, which includes the LOSB, was considered assuming similar population and employment densities. Where applicable, identification of future facility expansion needs and/or strategic upsizing of linear infrastructure was identified and incorporated into the final, recommended servicing plan.

The growth projections for the remainder of the municipal boundary area, detailed in **Table 4**, were estimated by applying a density to these remaining areas, excluding Natural Heritage Areas. These densities include:

- 60 residents and jobs combined per hectare for North and East Expansion Lands
- 75 residents and jobs combined per hectare for Tutela Heights

This approach typically aligns with the residential densities for proposed growth to 2051.

Table 4: Municipal Boundary Full Buildout Population & Employment

Lands Outside Settlement Boundary (LOSB)	Area (ha)	Population & Employment
North Expansion Lands	360	21,571
Tutela Heights	187	14,052
Total LOSB	**547**	**35,623**

3.2. Water Demand Projections

Water demand criteria was updated as part of the Master Servicing Plan and has been used to project water demands, detailed in **Table 5**, as well as to determine capacity requirements and establish the water infrastructure program. The following water design criteria was used:

- Residential Per Capita Rate: 270 L/c/d
- Employment Per Capita Rate: 270 L/c/p
- Maximum Day Peaking Factor: 1.8

Table 5: Water Demand Projections

Pressure District	ADD (MLD)		MDD (MLD)	
	2021	2051	2021	2051
Pressure District 1	14.9	29.3	25.3	51.2
Pressure District 2/3	14.6	34.1	24.9	60.1
Pressure District 4	3.5	10.7	6.0	18.8
Total	**33.0**	**74.1**	**56.2**	**130.1**

3.2.1. County Water Agreements

The City currently supplies potable water to Cainsville, in the County of Brant, through a 300 mm watermain on Colborne Street. In the 2016 Boundary Adjustment Agreement, signed by the City and the County, the City committed to entering into a Servicing Agreement based on various principles including that the water system capacity will be provided based on the City's design criteria. **Table 6** details the existing and buildout demands within Cainsville.

Table 6: County of Brant Water Demands

County of Brant Servicing	Growth Scenario	ADD (MLD)	MDD (MLD)
Cainsville Buildout	2016	0.70	1.40
	Buildout	1.80	3.70
	Growth	1.10	2.30

3.2.2. Water Post Period Considerations

The growth projection for the remainder of the urban boundary area was estimated by applying a density to these remaining areas, not including Natural Heritage Areas. These densities include:

- 30 jobs per hectare for North and East Expansion Employment Lands
- 90 residents and jobs combined per hectare for North and East Expansion Residential Lands
- 75 residents and jobs combined per hectare for Tutela Heights

The estimated full buildout demands are provided in **Table 7**.

Table 7: Municipal Boundary Full Buildout Population and Demands

Pressure District	Area (ha)	Population & Employment	ADD (MLD)	MDD (MLD)
Pressure District 1 (Tutela Heights)	187	14,052	3.8	6.8
Pressure District 2/3 (North Expansion Lands)	360	21,571	5.8	10.5
Total	**547**	**35,623**	**9.6**	**17.3**

3.3. Wastewater Flow Projections

Wastewater flow criteria were updated as part of the MSP Update and have been used to project wastewater flows, determine capacity requirements, and establish the wastewater infrastructure program. The following criteria were used to estimate wastewater flows presented in **Table 8** wastewater pumping station (WWPS) and the WWTP:

- Residential Per Capita Rate: 245 L/c/d
- Employment Per Capita Rate: 270 L/c/p
- Inflow and Infiltration Allowance: 0.3 L/s/ha

Table 8: Wastewater Flow Projections

Wastewater Catchment	Average Dry Weather Flow (MLD)(1)	
	2021	2051
Brantford WWTP	37.8	123.2
Johnson Road WWPS	0.4	0.5
Empey Street WWPS	8.0	43.8
Somerset Road WWPS	2.0	3.2
Woodlawn Road WWPS	0.6	1.0
St. Andrew's Drive WWPS	0.1	0.3
Lawren S. Harris Drive WWPS	0.2	0.3
Greenwich Street WWPS	5.3	10.5
Alexander Drive WWPS	0.5	0.6
Fifth Avenue WWPS	1.2	2.0
Stauffer Road WWPS	0.1	0.2

(1) ADWF includes the WWPS catchment and all upstream catchments established from the City's Wastewater model

3.3.1. County Wastewater Agreements

In the 2016 Boundary Adjustment Agreement, signed by the City and the County, the City committed to entering into a Servicing Agreement based on various principles including that the wastewater system capacity will be provided based on the City's design criteria.

As per County Council report PW-18-69 (August 2018) future flows from Cainsville are likely to be conveyed to the City of Brantford; however, the Airport connection is not anticipated within the next 5 to 10 years and feasibility will be revisited at a later date.

The flows for Cainsville and Airport in the County of Brant are provided in **Table 9** to provide context for the possible flows; if the County and City enter into a wastewater agreement in the future.

Table 9: Cainsville and Airport Flows

County of Brant Servicing	Average Dry Weather Flow (MLD) [1]	
	2021	2051
Airport	0.2	1.6
Cainsville	0.7	1.8
Total	**0.9**	**3.4**

[1] ADWF is estimated based on most recent available data from 2021 Master Servicing Plan Update.

3.3.2. Wastewater Post Period Considerations

The growth projection for the remainder of the municipal boundary area was estimated by applying a density to these remaining areas, excluding Natural Heritage Areas. These densities include:

- 60 residents and jobs combined per hectare for North and East Expansion Lands
- 75 residents and jobs combined per hectare for Tutela Heights

The estimated full buildout wastewater flows are provided in **Table 10**.

Table 10: Municipal Boundary Full Buildout Population and Flows

Trunk Sewer	Area (ha)	Population & Employment	Average Dry Weather Flow (MLD)
Coulbeck Trunk Sewer	359	31,571	8.0
Mount Pleasant Trunk Sewer	187	14,052	3.5
Total	546	45,623	11.5

3.4. Stormwater Servicing Needs

3.4.1. Role of Stormwater in this MSP Update

Stormwater servicing is discussed in this Master Servicing Plan (MSP) Update at a high level to provide background context for land use planning and growth. Consistent with the project scope, this MSP Update does not include updates to the stormwater servicing strategy, stormwater modelling, capital program development, or refinement of development charge (DC) eligibility for stormwater infrastructure. This work will be completed as a part of the 2030 MSP.

3.4.2. Existing Stormwater Servicing

Existing land use within the North Expansion Lands currently consists largely of unserviced agricultural lands, vacant lands, and a few areas of commercial and residential uses. The majority of the commercial properties are located along King George Road, while residential lands, all unserviced, are located along Powerline Road, Park Road, and Golf Road.

The existing land use within the East Expansion Lands currently consists largely of unserviced agricultural lands.

The existing land use within Tutela Heights, which has existing stormwater municipal services, consists primarily of existing residential lands, vacant lands, and agricultural lands. Most residential clusters are located along Mount Pleasant Road and Tutela Heights Road.

Existing stormwater conditions and servicing are documented in previously completed watershed and sub-watershed studies and are not reassessed as part of this MSP Update.

3.4.3. Future Stormwater Servicing

The proposed land use consists predominantly of residential and employment lands to support future growth metrics. Portions of the Settlement Area Boundary Expansion are within the GRCA floodplain and the Natural Heritage System; as such, urban development is not permitted in these portions of the new urban land uses due to their environmental sensitivity and the importance of maintaining existing land uses. Intensification corridors are proposed along King George Road, a major arterial road, and Park Road North, a minor arterial road.

The North Expansion Lands are envisioned to contain a mixed-use community, with residential lands primarily to the north and east and employment lands primarily in the west. The East Expansion Lands are envisioned to contain residential lands primarily to the north and employment lands primarily to the south. Tutela Heights is envisioned to mainly include residential lands.

Stormwater management for future development areas will be addressed through site-specific Stormwater Management Plans, informed by the City's existing stormwater policies, approved watershed studies, and the forthcoming stormwater model update. Detailed stormwater servicing strategies and infrastructure requirements will be confirmed through subsequent studies and approvals processes.

Table 11 provides a description of the various land use types and their impact on the stormwater management system in its entirety. Note that the average runoff coefficient provided for each land use is preliminary. As outlined in the North Brantford and Tutela Heights Sub-watershed Study (2020), area specific refinements will be required following the results of the field investigations and once detailed draft plans are available.

The runoff coefficients presented below are provided for general planning context only and are based on assumptions from previously completed studies. These values are preliminary and will

be refined through future site-specific stormwater management plans and the City's stormwater model update. The coefficients are not used to derive stormwater capital works or DC project requirements as part of this MSP Update.

Table 11: Stormwater Servicing Land Uses and Runoff Coefficients

Land Use	Description	Average Runoff Coefficient
Neighbourhood Residential	Single family residential	0.45
Neighbourhood Corridor	Semi-detached residential & reduced frontage residential	0.60
Neighbourhood Centre	Residential/commercial areas with high intensification	0.75
Intensification Corridor	Areas with highest proposed intensification	0.90
Employment Supportive	Commercial/employment	0.90
General Employment	Industrial/employment	0.80
Prestige Employment	Industrial/employment with best locations	0.80
Institutional	Schools & churches	0.75

An increase in stormwater runoff volume, peak runoff flowrate, and a decrease in stormwater runoff quality are anticipated due to intensification of the previously pervious surfaces. Future land uses will require volume control, peak flowrate, and quality to pre-development or better conditions. Controls within the expansion lands will be determined on a site-specific basis.

3.4.4. Proposed Development Lands

Several development and redevelopment proposals are currently at various stages of planning within the City. These developments are expected to manage stormwater on a site-specific basis through approved stormwater management plans and applicable regulatory approvals.

These developments are expected to proceed in accordance with the City's established stormwater policies and approved watershed planning framework.

- Greenfield area located at Erie Avenue and Birkett Lane
- Vacant lands located at Highway 403 and Wayne Gretzky Parkway
- Vacant lands located at Henry Street and Wayne Gretzky Parkway
- Draft plans of a subdivision (vacant lands) located at the Grand River and proposed Oak Park Road extension
- Greenfield area located west of Conklin Road

The 2020 MSP Update acknowledges future planned stormwater management features, provided existing stormwater management plans have been approved.

3.4.5. Stormwater Post Period Considerations

Beyond the Settlement Area Boundary Expansion are LOSB and full buildout of the municipal boundary, which are lands held for future Settlement Area expansion following substantial development of the current proposed Settlement Area Boundary Expansion areas. No allowances or considerations are required to account for stormwater post-period conditions. Stormwater within the expansion lands, LOSB, and buildout of the municipal boundary will be managed locally, and the stormwater systems will not cross between the existing boundary, expansion lands boundary, LOSB, and full buildout of the municipal boundary due to local topography and watercourse location.

No stormwater post-period capital infrastructure requirements or DC-related considerations are identified or assessed as part of this MSP Update.

4. Servicing Principles and Policy

Execution of reasonable Policies and Level of Service (LOS) objectives are essential in ensuring that the proper planning and design principles are followed in the development of detailed servicing strategies, implementation of system capital program, and operations and maintenance practices.

In the context of the 2021 MSP Update, these Policies and LOS objectives provide guidelines and direction to the master planning process, in addition to ensuring demands and flows are adequately representative to support the decision making for sizing and timing of future infrastructure.

Through the 2021 MSP Update, draft Policies and LOS objectives were established and used to guide future investment in the water, wastewater, and stormwater systems. The 2021 MSP Update Policies and LOS objectives and recommendations are included in **Appendix B** of **Volume II**.

4.1. Servicing Principles and Policies

Specific servicing principles and policies have been developed to guide the development of water, wastewater, and stormwater servicing strategies. In general, the City of Brantford is looking to build and maintain efficient, reliable, sustainable, and well-managed infrastructure systems that provide high level of service to the public. The servicing policies which impact the water, wastewater, and stormwater servicing are summarized in **Appendix B** of **Volume II**.

4.2. Design Criteria and Hydraulic Performance Criteria

A guiding principle of design criteria is to ensure that the demand and flows projections are adequately predicted with an appropriate factor of safety and risk management. This overall principle also ensures that infrastructure has sufficient capacity to meet the growing needs of the City and does not impede the approved/planned growth.

The design criteria was previously reviewed as part of the 2021 MSP Update and has been reviewed as a part of the 2025 MSP Amendment to ensure that they are accurate and will support sizing and timing of future infrastructure.

5. Water Servicing Strategy

The process for developing, evaluating, and selecting the preferred water servicing strategy followed these key steps:

- Review of baseline conditions across the water system;
- Identify opportunities and constraints of the water system;
- Develop high level servicing concepts;
- Review each concept with respect to environmental, social, legal, technical, and financial factors. Develop advantages and disadvantages for each;
- Provide additional detail for the preferred concept ensuring alignment, siting, capacity, timing, and other technical factors are identified; and,
- Develop a conceptual cost estimate for each project.

5.1. Opportunities and Constraints

Existing and future water opportunities and constraints were identified through discussions with City staff, as well as through hydraulic analyses and review of infrastructure data (e.g. GIS, design reports, as-built information, etc.). The InfoWater hydraulic model was used to analyze the performance of the existing and future system under different demand conditions such as Average Day Demand (ADD), Maximum Day Demand (MDD), Peak Hour Demand (PHD) and Maximum Day Demand plus Fire Flow (MDD+FF). The following water opportunities and constraints, as shown in **Figure 6**, were used to evaluate the existing and future water system:

Storage

- Storage deficiencies are realized in all three pressure districts by 2051 with limited balancing storage within the existing system
- Opportunity to increase elevated storage to decrease pumping needs
- Opportunity to replace aging King George Elevated Tank with new, larger elevated tank

Pumping

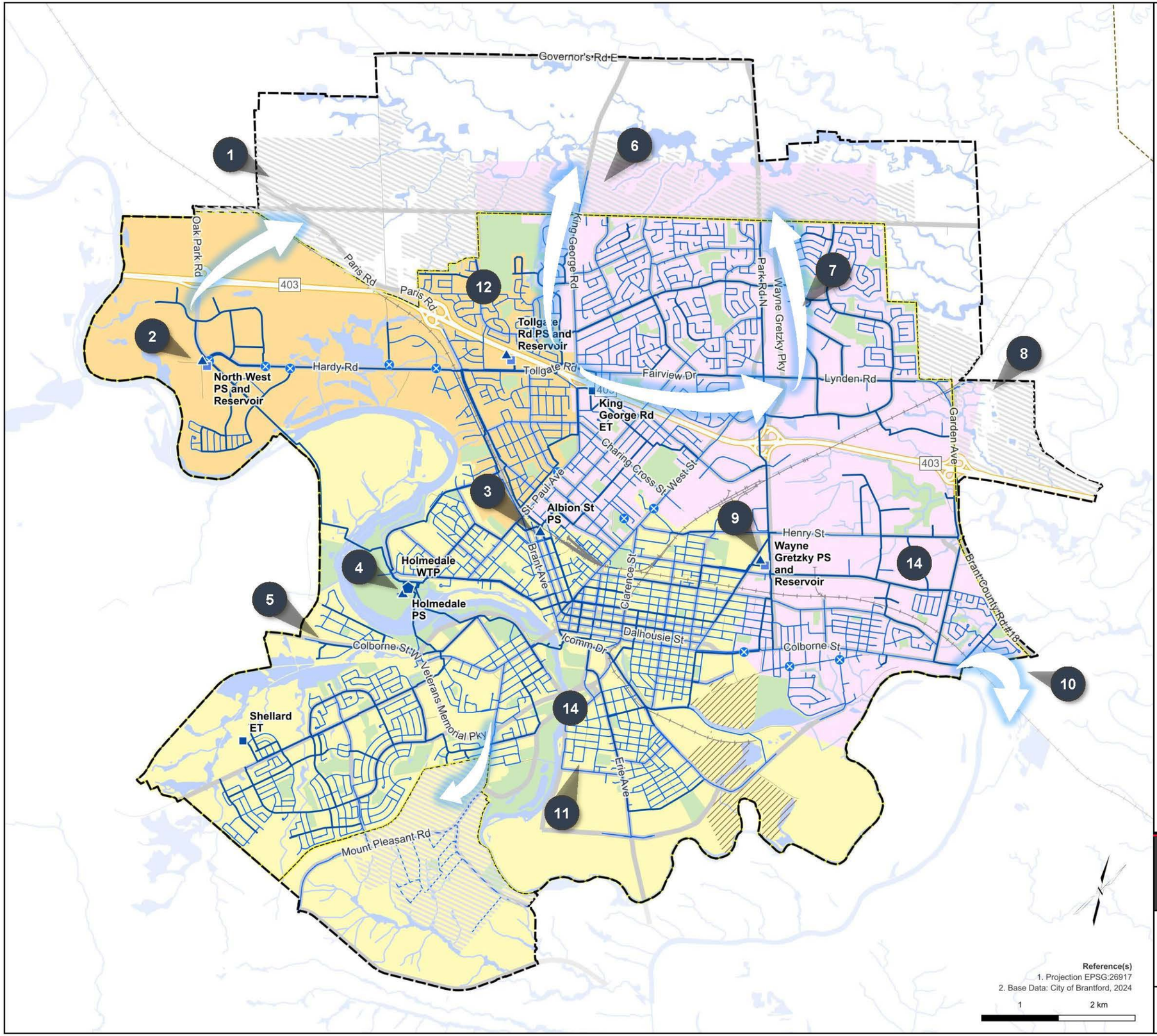
- Limited pumping upgrades needed in Pressure District 1 (PD1) or PD2/3 to accommodate 2051 growth
- PD4 may need pumping upgrades; dependent on storage strategy
- Opportunity to upgrade aging Albion BPS

Transmission

- Aging watermains will need to be replaced to improve local conveyance
- Trunk watermain upgrades to support intensification and to service expansion lands
- Existing system fire flow deficiencies are located primarily downtown, in areas with older cast iron watermains, and in areas with limited trunk conveyance

Pressure

- High and low pressures exist due to variation in elevations



Water Network

- Water Treatment Plant (WTP)
- Pumping Station (PS)
- Elevated Tank (ET) / Reservoir
- Pressure Reducing Valve (PRVs)
- Transmission Watermains (>250 mm)
- Watermains (≤250 mm)

Water Pressure Districts

- Pressure District 1
- Pressure District 2/3
- Pressure District 4

General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Parks
- Waterbody and Watercourses
- Expansion Lands

Opportunities & Constraints

1. Future Servicing of northwest employment lands.
2. Managing northwest capacity and water quality.
3. Further evaluation of aging facility as growth occurs.
4. Water treatment capacity and emergency closure storage capacity.
5. Low pressures in local high areas.
6. Increased storage needs within north lands.
7. Upside trunks to support intensification and growth areas.
8. New trunks to support growth areas.
9. Review and optimize operation capacity of existing system storage and pumping capacity.
10. Provide capacity to Cainsville subject to potential servicing agreement.
11. High pressures in low areas near the Grand River.
12. Local trunk and distribution upgrades to support fire flow.

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary – Figure 6
Existing Water System Opportunities and Constraints

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford (Ontario, Canada)

GEI Consultants Canada

Last Updated: December 2025
Document ID: 24043.22-W-002

5.2. Preferred Water Servicing Strategy Overview

In general, the preferred water servicing strategy consists of maintaining the existing pressure district (PD) delineation with a new elevated tank (ET) in PD2/3 and PD4 and upgrades to existing pumping stations (PS).

Water will be supplied to the North Expansion residential lands via PD2/3 through a primary trunk connection at King George Road. Additional watermain connections to PD2/3 are recommended at Park Road North and Brantwood Park Road. The North Expansion employment lands will be serviced via PD4 and supplied through a trunk extension at Oak Park Road.

East Expansion residential lands north of Lynden Road will be serviced by a direct connection to PD2/3 on Lynden Road. East Expansion employment lands, east of Garden Avenue, will be serviced by a direct connection to PD2/3 at Lynden Road and/or Sinclair Boulevard.

To integrate Tutela Heights into PD1 and within the City's system, connections at both Mount Pleasant Road and Conklin Road are required.

5.2.1. Holmedale Water Treatment Plant (WTP)

Upgrades at the Holmedale WTP will increase the rated capacity of the WTP to 130 MLD with completion over the next 10-15 years. The proposed works will be completed at the existing WTP with minimal disruption to operations and include the following upgrades:

- **Low Lift Pumping Station & Header:** Second low lift pump station which includes new intake and twin header
- **Polymer Pumps:** Increase pumping capacity
- **Ozonation:** Additional generator and new contact chamber
- **Filtration:** Upsize filtration well and backwash pumps
- **Residual Management:** Expand capacity at existing facility
- **Hydrogen Peroxide:** Future addition to the preliminary treatment process

5.2.2. Pumping Stations (PS)

The following details the recommended upgrades at existing pumping stations:

- **Holmedale Water Treatment Plant High Lift Pump Upgrades (W-P-001):** Install additional pump to supply elevated tank and reservoirs from reservoirs in PD1
- **Wayne Gretzky Pump Upgrades (W-P-002):** Replace existing pumps with three (3) new pumps at Wayne Gretzky PS to improve operational capacity and support new Pressure District HGL. Install new PRV to allow PD2/3 to backfeed to PD1
- **Tollgate Pump Upgrades (W-P-003):** Replace existing pumps with three (3) new pumps at Tollgate PS to improve operational capacity and support new Pressure District HGL. Install new PRV to allow PD2/3 to backfeed to PD1
- **Albion Booster Pumping Station Upgrades (W-P-006)**: Replace existing pumps with three (3) new pumps at Albion BPS to improve operational capacity.

5.2.2.1. Sub-Pressure District Pumping Stations (PS)

The following details the recommended projects for proposed sub-pressure district pumping stations:

- **Colborne Street West Booster Pumping Station (W-P-004)**: New 11.1 MLD booster pumping station to be serviced off of PD1 to service existing properties on Colborne Street and development extending west to the municipal boundary. Construction of this BPS was completed in 2025.
- **Strawberry Hill Booster Pumping Station (W-P-005):** Install new booster pumping station to boost flows from PD1 to a new sub-pressure district extending from Shellard Lane to Mount Pleasant Street. This booster pumping station is required to service future development.

5.2.3. Storage

The following details the recommended storage projects:

- **Pressure District 2/3 Elevated Tank (W-ET-001/W-ET-004):** New twinned ET in PD2/3, sized to service both PD2/3 and PD1 storage deficiency including North Expansion Lands until 2051. Phase 1 to build new 6.0 ML ET within 5 years, followed by Phase 2 to build new 11 ML ET within 10 years. Post 2051, the PD2/3 ET will service PD2/3 and the LOSB with additional storage needed in PD1 post 2051.
- **Pressure District 4 Elevated Tank (W-ET-002):** New 9.0 ML ET in PD4 to service the PD4 storage deficiency including North Expansion Lands and LOSB.
- **Decommissioning of King George Elevated Tank (W-D-001):** Decommissioning of the King George ET as it will be replaced by the new PD2/3 ET.

5.2.4. Existing System Upgrades

Projects to service the existing water system include the following:

- **Upsize Fairview Drive/Lynden Road Trunk Watermain (W-M-027):** Watermain upgrades on Fairview Drive/Lynden Road from King George Road to Brantwood Park Road to 600 mm to support growth in PD2/3.
- **Downtown Trunk Watermain (W-M-028):** Upsize existing watermain along Pearl Street from St. James Street to West Street to 400 mm.
- **Garden Avenue Watermain Upgrade (W-M-029):** Upsize existing watermain along Garden Avenue from Lynden Road to Sinclair Boulevard to 300 mm to create loop within PD2/3.
- **Fire Flow Watermain Upgrades (W-M-030):** Fire flow program to include replacing watermains less than or equal to 100mm, replacing Cast Iron watermains, replacing Asbestos Cement/Ductile Iron watermains (installed before 1990) and upsizing and looping to strengthen local trunk network. All watermain replacements will be PVC.
- **Shellard Lane Watermain (W-M-031):** Upsize existing watermain alone Shellard Lane from Diana Avenue to Spalding Drive to 600mm.

5.2.5. North Expansion Lands

Projects to service the North Expansion Lands include the following:

- **King George Road Watermain (W-M-001):** Upsize existing watermain from 400 mm to 750 mm on King George Road from Tollgate PS to the proposed east-west collector road in the North Expansion Lands or the new PD2/3 ET.
- **Oak Park Road Trunk Watermain (W-M-002):** New 600 mm trunk watermain extending from Oak Park Road watermain limit to Powerline Road in PD4.
- **Powerline Road Trunk Watermain (W-M-003):** New 600 mm trunk watermain in PD4 along Powerline Road from new Oak Park Road watermain to the proposed east-west collector road.
- **North-South Collector Road Trunk Watermain (W-M-004):** New 600 mm trunk watermain in PD4 along proposed north-south collector road from Powerline Road to proposed east-west Collector Road
- **North-South Collector Road Local Watermain (W-M-005):** New 300 mm local watermain in PD4 along proposed north-south collector road from proposed east-west collector road to North expansion limit.
- **Paris Road Trunk Watermain (W-M-006):** New 600 mm watermain in PD4 along Paris Road from Tollgate Road to proposed north-south collector road at Powerline Road.
- **Powerline Road Distribution Watermain (W-M-007/W-M-008):** New 300 mm distribution watermain in PD4 along Powerline Road from proposed north-south collector road to Balmoral Drive extension.
- **Pressure District 4 East-West Collector Road Trunk Watermain (W-M-009):** New 400 mm trunk watermain in PD4 along east-west collector road from north-south collector road to PD4 boundary at Balmoral Drive Road extension.
- **Pressure District 2/3 East-West Collector Road Trunk Watermain (W-M-011/W-M-012)**: New 600 mm trunk watermain in PD2/3 along east-west collector road from PD4 boundary trunk watermain to Park Road North.
- **Pressure District 2/3 East-West Collector Road Trunk Watermain (W-M-010):** New 400 mm trunk watermain in PD2/3 along east-west collector road from Park Road North to Brantwood Park Road.
- **Brantwood Park Road Trunk Watermain (W-M-014):** New 400 mm trunk watermain in PD2/3 along Brantwood Park Road from Powerline Road to east-west collector road.
- **Park Road North Trunk Watermain (W-M-015):** New 600 mm trunk watermain in PD2/3 along Park Road North from Powerline Road to east-west collector road.
- **Powerline Road Local Watermain (W-M-016):** New 300 mm local watermain in PD2/3 along Powerline Road from Brantwood Park Road to east-west collector road eastern limit.
- **East-West Collector Road Local Watermain (W-M-017):** New 300 mm local watermain in PD2/3 along east-west collector road from Powerline Road eastern limit to Brantwood Park Road.

5.2.6. East Expansion Lands

Projects required to service the East Expansion Lands include the following:

- **Lynden Road Trunk Watermain (W-M-018):** Upgrade existing watermain to 400 mm on Lynden Road from Brantwood Park Road to eastern limit for East Expansion Lands.
- **Lynden Road Distribution Watermain Extension (W-M-019):** New 300 mm local watermain in PD2/3 along Lynden Road from Lynden Road trunk watermain to East Expansion Lands limit.
- **East Expansion Lands Residential Loop (W-M-020):** New 300 mm local watermain in East Expansion Lands along proposed collector road north of Lynden Road.
- **East Expansion Lands Employment Loop (W-M-021):** New 300 mm local watermain in East Expansion Lands along employment lands collector road from Lynden Road watermain extension to Sinclair Road connection including two (2) new PRVs from PD2/3 to the East Expansion Lands at Lynden Road and Sinclair Road.

5.2.7. Tutela Heights

Watermain upgrades that will be required to accommodate growth include the following:

- **Mount Pleasant Road Watermain Upgrades (W-M-022):** Upsize existing 200 mm watermain on Mount Pleasant Road in Tutela Heights to 300 mm, including automatic flushers at the dead ends.
- **Conklin Road Watermain Upgrades (W-M-023):** Upsize existing 200 mm watermain on Conklin Road from Blackburn Drive to Mount Pleasant Road to 300 mm.
- **Tutela Heights Road Upgrades (W-M-024):** Upsize existing 200 mm watermain on Tutela Heights from Mount Pleasant Road to Davern Road to 300 mm.
- **Tutela Heights Collector Road Distribution Watermain (W-M-025):** New 300 mm distribution watermain along collector road from Mount Pleasant Road to Phelps Road in Tutela Heights, including automatic flushers at the dead ends.
- **Davern Road Distribution Watermain (W-M-026):** New 300 mm distribution watermain along Davern Road from Mount Pleasant Road southern limit to collector road.

5.3. Water Capital Program Summary

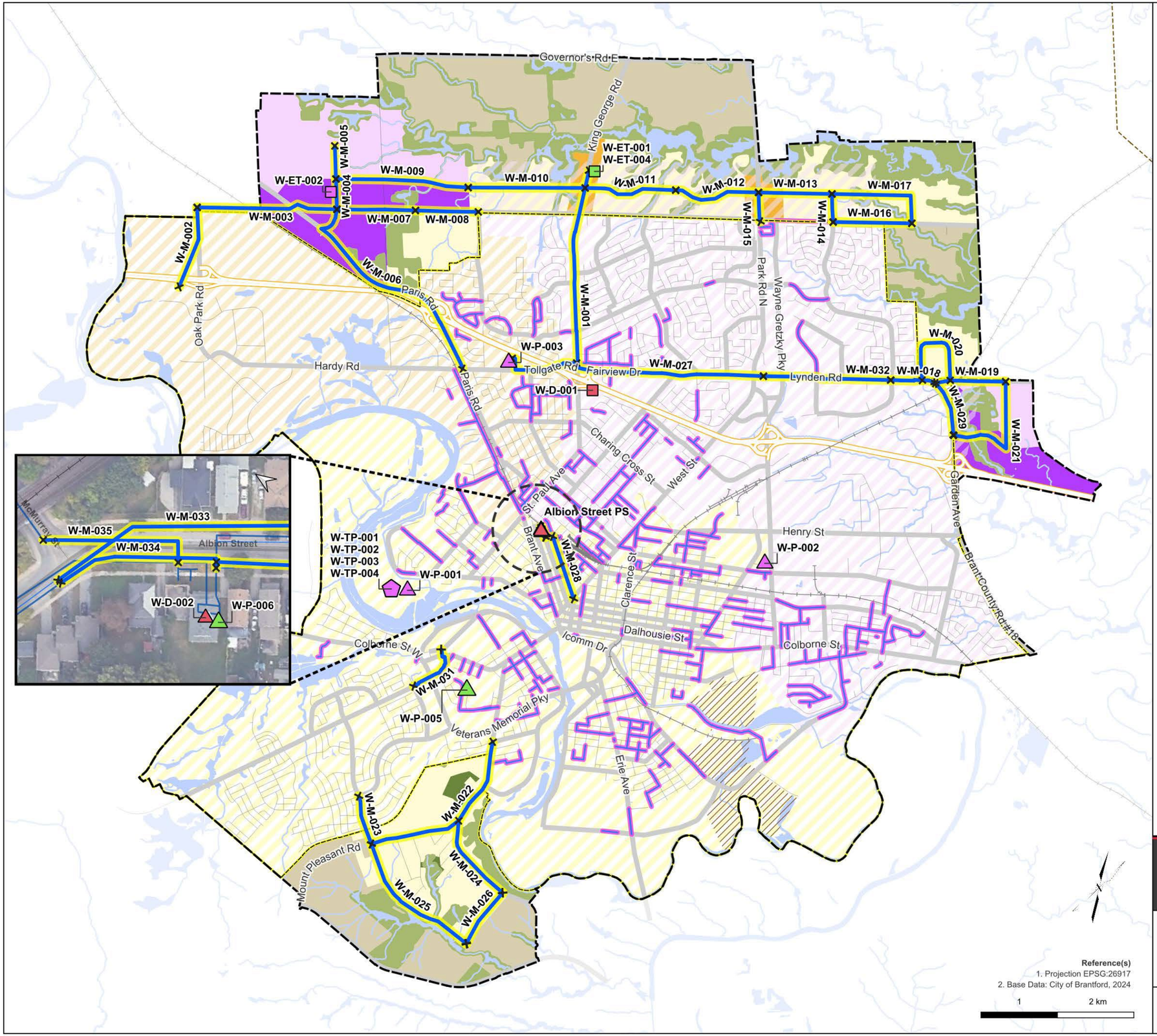
A summary of the water servicing strategy capital program with details for each project is provided in **Table 12** and shown in **Figure 7**.

Table 12: Water Capital Program

Capital Program ID	Name	Required Studies	Class EA Schedule	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
W-M-001	King George Road Watermain	-	Eligible for Screening	750 mm	$25,564,000	0-5 Years	C
W-M-002	Oak Park Road Trunk Watermain	Municipal Class EA	B	600 mm	$20,006,000	0-5 Years	A
W-M-003	Powerline Road Trunk Watermain	Municipal Class EA	B	600 mm	$11,257,000	0-5 Years	A
W-M-004	North-South Collector Road Trunk Watermain	-	Exempt	600 mm	$1,602,000	10-20 Years	A
W-M-005	North-South Collector Road Local Watermain	-	Exempt	300 mm	$779,000	10-20 Years	A
W-M-006	Paris Road Trunk Watermain	Municipal Class EA	B	600 mm	$15,834,000	5-10 Years	C
W-M-007	Powerline Road Distribution Watermain	-	Eligible for Screening	300 mm	$2,020,000	5-10 Years	A
W-M-008	Powerline Road Distribution Watermain	-	Eligible for Screening	300 mm	$2,152,000	5-10 Years	A
W-M-009	Pressure District 4 East-West Collector Road Trunk Watermain	-	Exempt	400 mm	$4,892,000	10-20 Years	A
W-M-010	Pressure District 2/3 East-West Collector Road Trunk Watermain	-	Exempt	400 mm	$3,994,000	10-20 Years	A
W-M-011	Pressure District 2/3 East-West Collector Road Trunk Watermain	-	Exempt	600 mm	$4,988,000	10-20 Years	A
W-M-012	Pressure District 2/3 East-West Collector Road Trunk Watermain	-	Exempt	600 mm	$4,720,000	10-20 Years	A
W-M-013	East-West Collector Road Trunk Watermain	-	Exempt	400 mm	$2,238,000	0-5 Years	A
W-M-014	Brantwood Park Road Trunk Watermain	-	Exempt	400 mm	$959,000	0-5 Years	A
W-M-015	Park Road North Trunk Watermain	-	Eligible for Screening	600 mm	$1,657,000	0-5 Years	A
W-M-016	Powerline Road Local Watermain	-	Eligible for Screening	300 mm	$2,127,000	0-5 Years	A
W-M-017	East-West Collector Road Local Watermain	-	Exempt	300 mm	$2,499,000	0-5 Years	A
W-M-018	Lynden Road Trunk Watermain Upgrades	-	Eligible for Screening	300 mm	$1,306,000	5-10 Years	B
W-M-019	Lynden Road Distribution Main Extension	-	Eligible for Screening	300 mm	$4,388,000	0-5 Years	A
W-M-020	East Expansion Lands Residential Loop	-	Exempt	300 mm	$2,286,000	0-5 Years	A
W-M-021	East Expansion Lands Employment Loop	-	Exempt	300 mm	$3,698,000	5-10 Years	A

Capital Program ID	Name	Required Studies	Class EA Schedule	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
W-M-022	Mount Pleasant Road Watermain Upgrades	-	Eligible for Screening	300 mm	$5,089,000	0-5 Years	D
W-M-023	Conklin Road Watermain Upgrades	-	Eligible for Screening	300 mm	$1,295,000	0-5 Years	D
W-M-024	Tutela Heights Road Upgrades	-	Eligible for Screening	300 mm	$2,544,000	5-10 Years	B
W-M-025	Tutela Heights Collector Road Distribution Watermain	-	Exempt	300 mm	$3,447,000	10-20 Years	A
W-M-026	Davern Road Distribution Watermain	-	Eligible for Screening	300 mm	$1,650,000	10-20 Years	A
W-M-027	Upsize Fairview Drive/Lynden Road Trunk Watermain	-	Eligible for Screening	600 mm	$10,977,000	0-5 Years	B
W-M-028	Downtown Trunk Watermain	-	Eligible for Screening	400 mm	$2,628,000	5-10 Years	D
W-M-029	Garden Avenue Watermain Upgrade	-	Eligible for Screening	300 mm	$1,700,000	5-10 Years	B
W-M-030	Fire Flow Watermain Upgrades	-	Eligible for Screening	300 mm	$14,545,000	0-5 Years	D
W-M-031	Shellard Lane Watermain Upgrade	-	Eligible for Screening	600 mm	$8,733,000	0-5 Years	C
W-M-032	Upsize Lynden Road Trunk Watermain	-	Eligible for Screening	600 mm	$7,683,000	5-10 Years	B
		-				0-10 Years	C
W-M-034	Albion Street Trunk Watermain	-	Eligible for Screening	400 mm	$1,020,000	0-10 Years	C
W-M-035	McMurray Street Trunk Watermain	-	Eligible for Screening	300 mm	$204,000	0-5 Years	C
W-ET-001	Pressure District 2/3 Elevated Tank (Phase 1)	Municipal Class EA	B	6.0 ML	$29,627,000	10-20 Years	C
W-ET-002	Pressure District 4 Elevated Tank	Municipal Class EA	B	9.0 ML	$37,098,000	Completed in 2021	C
W-ET-003	Pressure District 1 Elevated Tank	Municipal Class EA	B	6.0 ML	--	5-10 Years	C
W-ET-004	Pressure District 2/3 Elevated Tank (Phase 2)	Municipal Class EA	Exempt	11.0 ML	$27,025,000	5-10 Years	C
W-D-001	Decommissioning of King George Elevated Tank	-	Eligible for Screening	-	$1,337,000	0-5 Years	D

Capital Program ID	Name	Required Studies	Class EA Schedule	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
W-P-001	Holmedale Water Treatment Plant High Lift Pump Upgrades	-	Eligible for Screening	-	$3,779,000	0-5 Years	C
W-P-002	Wayne Gretzky Pump Upgrades	-	Eligible for Screening	-	$9,355,000	5-10 Years	C
W-P-003	Tollgate Pump Upgrades	-	Eligible for Screening	-	$10,691,000	5-10 Years	C
W-P-004	Colborne Street West Booster Pumping Station	Municipal Class EA	Exempt	11.1 MLD	--	Completed in 2025	B
W-P-005	Strawberry Hill Booster Pumping Station	Municipal Class EA	B	0.9 MLD	$13,744,000	10-20 Years	B
W-P-006	Albion Booster Pumping Station Upgrades	-	Eligible for Screening	25.9 MLD	$5,213,000	0-10 Years	C
W-TP-001	Water Treatment Plant Upgrades - 0-5 Years	-	Eligible for Screening	-	$126,507,000	0-5 Years	D
W-TP-002	Water Treatment Plant Upgrades - 5-10 Years	-	Eligible for Screening	-	$8,840,000	5-10 Years	A
W-TP-003	Water Treatment Plant Upgrades - 10-20 Years	-	Eligible for Screening	-	$151,490,000	10-20 Years	A
W-TP-004	New Intake Canel to Holmedale WTP	-	Eligible for Screening	-	$80,250,000	10-20 Years	A
				TOTAL	**$685,437,000**		



Capital Program Projects

- Decommission Elevated Tank
- Decommission Pumping Station
- New Elevated Tank
- New Pumping Station
- Existing Elevated Tank Upgrade
- Existing Pumping Station Upgrade
- Existing Water Treatment Plant Upgrade
- Proposed Watermains
- Proposed Fire Flow Upgrades

Water Network

- Water Treatment Plant (WTP)
- Pumping Station (PS)
- Elevated Tank (ET) / Reservoir
- Pressure Reducing Valve (PRVs)
- Transmission Watermains (>250 mm)
- Watermains (≤250 mm)

Water Pressure Districts

- Pressure District 1
- Pressure District 2/3
- Pressure District 4

General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Waterbody and Watercourses

Proposed Preferred Land Use Options

- Agricultural Designation
- Core Natural Areas
- Downtown Urban Growth Centre
- General Employment
- Intensification Corridor
- Major Commercial Centre
- Major Institutional
- Parks and Open Space
- Prestige Employment
- Residential

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary - Figure 7
Water - Capital Program

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford (Ontario, Canada)

GEI

Last Updated: August 2026
Document ID: 2404322-W-005-Water Capital Program

Document Path: B:\Working\BRANTFORD ON, CITY OF\2404322 Master Servicing Plan - 2025 Development Charges Update\05_GIS\6_Final Report\2404322-W-005-Water Capital Program.qgz

6. Wastewater Servicing Strategy

Similar to water, the process for developing, evaluating, and selecting the preferred wastewater servicing strategy followed these key steps:

- Review of baseline conditions across the wastewater system;
- Identify opportunities and constraints of the wastewater system;
- Develop high level servicing concepts;
- Review each concept with respect to environmental, social, legal, technical, and financial factors. Develop advantages and disadvantages for each;
- Provide additional detail for the preferred concept ensuring alignment, siting, capacity, timing and other technical factors are identified; and,
- Develop a conceptual cost estimate for each project.

6.1. Opportunities and Constraints

Existing and future wastewater opportunities and constraints were identified through discussions with City staff, as well as through hydraulic analyses and review of infrastructure data (e.g. GIS, design reports, as-built information, etc.). The InfoWorks ICM hydraulic model was used to analyze the performance of the existing and future system under dry weather and wet weather flow conditions. The following wastewater opportunities and constraints, as shown in **Figure 8**, were used to evaluate the existing and future wastewater system:

Treatment

- Existing WWTP upgrades are needed to support existing and future users
- Opportunity for short term optimization and upgrades

Pumping

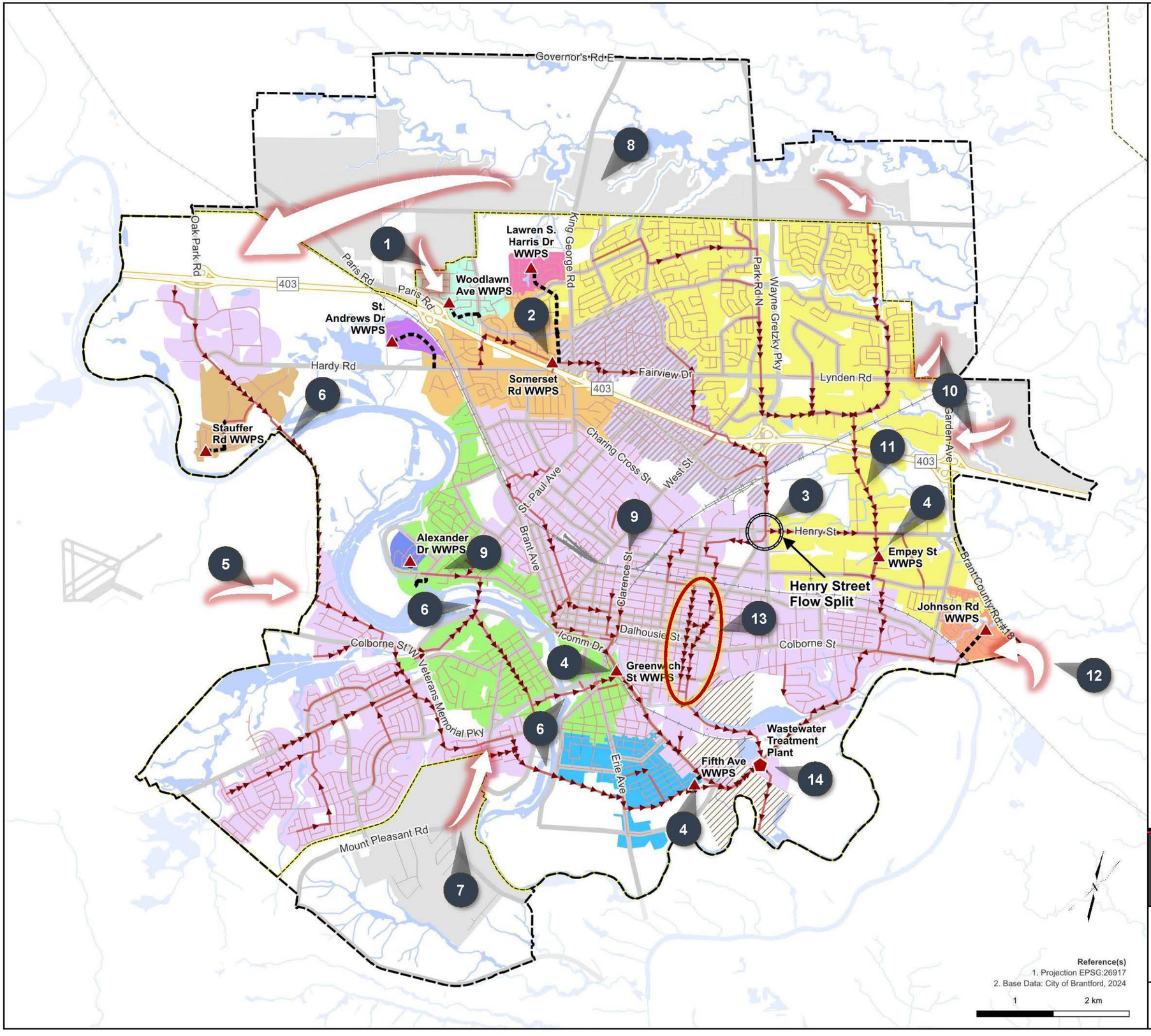
- Short- and long-term strategies are needed to manage wastewater pumping station capacity (Fifth Avenue WWPS, Empey Street WWPS, Greenwich Street WWPS, Woodlawn Road WWPS, and Johnson Road WWPS)

Sanitary Sewer

- Trunk capacity needs to support intensification corridors and northern/eastern growth areas
- A number of existing sewers are at capacity or will be at capacity with 2051 growth flows and upgrades are necessary
- Optimization of local wastewater system and flow splits is required to maximize available sewer and pumping capacities to support 2051 growth

Inflow and Infiltration

- Wet weather management is needed throughout the entire wastewater system



Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Wastewater Network

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Forcemains
- Trunk Mains (>300 mm)
- Gravity Mains (≤300 mm)

WWPS Catchment

- Alexander Dr WWPS
- Empey St WWPS
- Fifth Ave WWPS
- Greenwich St WWPS
- Johnson Rd WWPS
- Lawren S. Harris Dr WWPS
- Somerset Rd WWPS
- St.Andrew's Ave WWPS
- Woodlawn Rd WWPS
- Upstream of Henry Street Flow Split
- WWTP
- Stauffer Rd WWPS

General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Settlement Area Boundary
- Outside Municipalities
- Parks
- Waterbody and Watercourses
- North Expansion Lands

Opportunities & Constraints

1. Partial servicing of northwest lands through Woodlawn WWPS.
2. Optimization of local sewers to support growth areas.
3. Optimization of Henry St flow split.
4. Short and long term strategies to manage pump station capacity (Fifth, Empey, and Greenwich).
5. Provide capacity to Airport employment land (may be subject to potential servicing agreement)
6. Capacity, maintenance, and security of existing river crossings.
7. Extend City's wastewater system to service new development in the Tutela Heights area.
8. Future servicing of expansion lands including multiple new pumping stations and trunk sewers.
9. Management of wet weather flow and system resiliency to climate change.
10. Trunk capacity to support growth areas along eastern boundary.
11. Trunk capacity needs to support intensification corridors and northern growth areas.
12. Provide capacity to Cainsville (may be subject to potential servicing agreements).
13. Existing trunk sewers at capacity.
14. Treatment capacity to support existing and future users.

Executive Summary – Figure 8
Existing Wastewater System
Opportunities and Constraints

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford
(Ontario, Canada)

GEI Consultants Canada

Last Updated: June 2026
Document ID: 2404322-WW-002

6.2. Preferred Wastewater Servicing Strategy Overview

The preferred wastewater strategy includes pumping upgrades to the Empey Street WWPS, Fifth Avenue WWPS, and Greenwich Street WWPS. Within the Greenwich Street WWPS catchment, flows at the Grand River Avenue and Jubilee Avenue flow split will be primarily conveyed along the upsized Grand River Avenue sewer. Flow constraints within north Brantford, generally east of King George Road, will be addressed through the upsizing of the sewers along Memorial Drive and Ashgrove Avenue to Park Road North. The Henry Street flow split will be optimized to convey the majority of flows to the Empey Street WWPS catchment.

Wastewater servicing to the North Expansion lands will be through the installation of four new WWPS and forcemains to convey flow by gravity where needed. Flows east of King George Road will be conveyed to the Coulbeck Road trunk sewer, located at the eastern extremity of the existing wastewater system, flowing to the Empey Street WWPS catchment. Flows west of King George Road will be conveyed to the Oak Park Road trunk sewer, located at the western extremity of the existing wastewater system, flowing to the WWTP catchment.

The East Expansion lands will be serviced through the installation of a new WWPS and forcemain, located along Lynden Road. Flows will be conveyed to the Lynden Road sewer via a forcemain, flowing to the Empey Street WWPS catchment.

Tutela Heights flows will be conveyed to the WWTP catchment through a connection at Gilkison Street. Flows within the lower elevations in Tutela Heights will be serviced by a new WWPS and forcemain which will convey flows to Tutela Heights Road.

6.2.1. Brantford Wastewater Treatment Plant

Process maintenance and optimization at the Brantford WWTP will allow for a rated capacity of 81.8 MLD to be maintained when completed within the next 10 years. Upgrades at the WWTP are needed to accommodate 2051 growth flows. All proposed upgrades will be completed within the next 20 years and include the following upgrades:

- **Raw Sewage Pumping:** Increase pumping capacity with an additional pumping station and a twinned forcemain.
- **Preliminary Treatment:** Additional bar screen and grit chamber.
- **Primary Clarifiers:** Increase clarifier capacity.
- **Aeration Tanks:** Optimize process flow rates to Process Module 1 (PM1) and PM2. Increase capacity of PM2 aeration tanks and add blowers.
- **Secondary Clarification:** Bring all existing tanks back into service.
- **Waste Activated Sludge (WAS) Thickening:** New WAS thickening facility to support primary clarifiers and anaerobic digester
- **Biosolids Storage Tank:** New decant system which is currently under construction

6.2.2. Wastewater Pumping Stations (WWPS)

6.2.2.1. Upgrades to existing Wastewater Pumping Stations (WWPS)

The following details the recommended upgrades at existing pumping stations

- **Empey Street WWPS Storage Upgrades (WW-PS-007)**: 2021 MSP Update recommended a twinned Wet Well (Duplicate of existing ~0.5 ML of storage), and 2.0 ML Storage Chamber, includes 4 new pumps and a new control building. Recent upgrades include 2.2 ML of storage in new storage tank, 1.1 ML of storage in collection system, and 0.5 ML of storage in wet well for a total of 3.8 ML of storage.
- **Empey Street Wastewater Pumping Station Rehabilitation and Improvements (WW-PS-008)**: Renewal to meet current flow needs including maintenance and repair and rehabilitation.
- **Fifth Avenue Wastewater Pumping Station Upgrades (WW-PS-009)**: Recent upgrades at existing WWPS include upgrading capacity to 11.2 MLD, and a new forcemain (twinned) which is currently under construction.
- **Fifth Avenue Wastewater Pumping Station Storage Upgrades (WW-PS-010):** Upgrades at the existing WWPS to accommodate 1 hour of storage, 0.468 ML, at peak flows of 11.2 MLD.
- **Greenwich Wastewater Pumping Station Rehabilitation and Improvements (WW-PS-011)**: Renewal to meet current flow needs including maintenance and repair, rehabilitation, and replacing existing pumps with new pumps and non-clog impellers to reduce plugging. Pumps selected are to match current firm capacity to preservice the existing station capacity.
- **St. Andrews Wastewater Pumping Station Storage Upgrades (WW-PS-012)**: 2021 MSP Update recommended an additional 0.02 ML of storage to address existing and future peak weather flow storage deficit. Recent upgrades include 25 m^3 of storage, 7 m^3 of storage in collection system, and 20 m^3 of storage in wet well for a total of 52 m^3 of storage.
- **Johnson Wastewater Pumping Station Storage Upgrades (WW-PS-013)**: An additional 0.12 ML of storage to address existing and future peak weather flow storage deficit.
- **Johnson Wastewater Pumping Station Rehabilitation (WW-PS-014)**: Rehabilitation, maintenance, and repair to address operational concerns related to WWPS.
- **Woodlawn Wastewater Pumping Station Rehabilitation (WW-PS-015)**: Rehabilitation, maintenance, and repair to address operational concerns related to WWPS.

6.2.2.2. New Wastewater Pumping Stations (WWPS)

The following details the recommended new pumping stations to service the Expansion Lands:

- **Northwest-1 Wastewater Pumping Station (WW-PS-001)**: New 2.6 MLD WWPS located northeast of Golf Road or Powerline Road Trunk Sewer. Flows will be pumped to the trunk sewer along the north-south collector road, draining to Oak Park Road. WWPS to

be sized for North Expansion Lands while securing site capacity to allow for upgrades for full buildout flows post 2051.

- **Northwest-2 Wastewater Pumping Station (WW-PS-002)**: New 17.4 MLD WWPS located east of Golf Road on east-west collector road. Flows will be pumped to the trunk sewer along the Powerline Road trunk sewer, draining to Oak Park Road. WWPS to be sized for North Expansion Lands while securing site capacity to allow for upgrades for full buildout flows post 2051.
- **North Wastewater Pumping Station (WW-PS-003):** New 8.4 MLD WWPS located along the east-west collector road between King George Road and Park Road North, south of Jones Creek. WWPS to be sized for North Expansion Lands while securing site capacity to allow for upgrades for full buildout flows post 2051.
- **Northeast Wastewater Pumping Station (WW-PS-004)**: New 6.5 MLD WWPS located along Powerline Road, east of Coulbeck Road. Flows will be pumped to Coulbeck Road trunk sewer.
- **East Wastewater Pumping Station (WW-PS-005)**: New 9.1 MLD WWPS located at the northeast intersection of Garden Avenue and Lynden Road. Flows will be pumped to trunk sewer on Lynden Road.
- **Tutela Heights Wastewater Pumping Station (WW-PS-006)**: New 6.9 MLD WWPS located in south Tutela Heights along collector road. Flows to be pumped to trunk sewer on Tutela Heights Road, extending to Mount Pleasant Road trunk sewer.

6.2.2.3. New Forcemains

The following details the recommended new forcemains to service the Expansion Lands:

- **Northwest-1 Wastewater Pumping Station Forcemain (WW-FM-001)**: New 250 mm forcemain extending from Northwest-1 WWPS to north-south collector road trunk sewer. Forcemain sized to accommodate North Expansion Lands with allowance for potential twinning for full buildout flows.
- **Northwest-2 Wastewater Pumping Station Forcemain (WW-FM-002)**: New 500 mm forcemain extending from Northwest-2 WWPS to Powerline Road trunk sewer. Forcemain sized to accommodate existing flows and full buildout flows.
- **North Wastewater Pumping Station Forcemain (WW-FM-003)**: New 350 mm forcemain from North WWPS to east-west collector road trunk sewer. Forcemain sized to accommodate existing flows and full buildout flows.
- **Northeast Wastewater Pumping Station Forcemain (WW-FM-004)**: New 300 mm forcemain from Northeast WWPS to Coulbeck Road trunk sewer. Forcemain sized to accommodate existing flows and full buildout.
- **East Wastewater Pumping Station Forcemain (WW-FM-005)**: New 350 mm forcemain extending from East WWPS to Lynden Road trunk sewer.
- **Tutela Heights Wastewater Pumping Station Forcemain (WW-FM-006)**: New 350 mm forcemain extending from Tutela Heights WWPS to Tutela Heights Road trunk sewer.

6.2.3. Existing System Upgrades

Projects to service the existing system include the following:

- **Bodine Road Easement Sewer Upgrades (WW-SS-017)**: Upsize existing 975 mm sewer to 1,350 mm on alignment 270 m east of Bodine Road from Roy Boulevard to Henry Street crossing under Highway 403 to address future capacity issues; sewer sized to accommodate full buildout. Project costs include ongoing flow monitoring in existing trunk sewer to ensure Inflow and Infiltration (I&I) does not trigger project earlier than anticipated.
- **North Ashgrove Avenue Sewer Upgrades (WW-SS-018)**: Upgrade existing 375-500 mm sewers to 600 mm on Memorial Drive from Kensington Drive to Ashgrove Avenue and on Ashgrove Avenue from Memorial Drive to the Homestead Place to address capacity issues in North Brantford.
- **Summerhayes Crescent Servicing Study (WW-SS-019)**: Feasibility study to assess the connection of the existing septic service lands to the existing King George Road sewer or pumping the services to east-west collector road trunk sewer (east of King George Road) and North WWPS. The feasibility study will determine sewer upsizing needs.
- **Henry Street Flow Split Reconfiguration (WW-SS-020)**: Reconfigure sewer flow split to redirect flows to Empey Street WWPS to relieve downstream sewer capacity constraints.
- **Grand River Avenue Sewer Upgrades (WW-SS-021)**: Optimize Grand River Avenue and Jubilee Avenue flow split by diverting more flows to Grand River Avenue. Upsize existing 300 mm sanitary sewers to 525 mm along Grand River Avenue to accommodate increased flows.
- **Oakhill Sewer Upgrades (WW-SS-022)**: Upsize Oakhill Drive sewer between Jennings Road and Colborne Street West from 675 and 750 mm to 1,050 mm to accommodate growth flows from the North Expansion Lands as well as address any potential operational issues due to the smaller sewer diameter.
- **Downtown Sewers (WW-SS-023)**: The growth projection identifies substantial potential for intensification and redevelopment, as per the Downtown Brantford Revitalization EA, within the City's downtown area. Sewer capacity upgrades may be required to support the increased density. Sewer upgrades will be coordinated with other planned rehabilitation works and/or as required to support individual developments.
- **Mohawk Trunk Sewer Upgrades (WW-SS-024)**: Upgrade existing 1,200 mm sewer on Mohawk Street from Mohawk Street siphon (south of Forest Road) to WWTP entrance to address future capacity issues; sewer sized to accommodate full buildout. Project costs include ongoing flow monitoring in existing trunk sewer to ensure I&I does not trigger project earlier than anticipated.
- **Localized System Upgrades**: Due to the substantial amount of growth and intensification within the City's urban boundary, localized surcharges were identified through hydraulic modelling, indicating sewer capacity upgrades may be required in these localized areas. The upgrades will be coordinated with other planned rehabilitation works and/or as required to support individual developments.

6.2.4. North Expansion Lands

Projects to service the North Expansion Lands include the following:

- **Oak Park Road Trunk Sewer (WW-SS-001):** New 825 mm trunk sewer extending from north-south collector road to Oak Park Road to service North Expansion lands west of King George Road.
- **North-South Collector's Road Trunk Sewer (WW-SS-002)**: New 825 mm trunk sewer extending along north-south collector road from east-west collector road to Powerline Road to service North Expansion lands west of King George Road.
- **North-South Collector's Road Trunk Sewer (WW-SS-003)**: New 525 mm trunk sewer extending along north-south collector's road from northern east-west collector road to north-south collector road to service lands north of east-west collector road.
- **East-West Collector's Road Trunk Sewer (West of King George) (WW-SS-005)**: New 600 mm trunk sewer extending along east-west collector road east of Northwest-2 WWPS and west of King George Road.
- **East-West Collector's Road Trunk Sewer (East of King George Road) (WW-SS-008)**: New 525 mm trunk sewer extending along east-west collector road east of King George Road to North WWPS.
- **East-West Collector's Road Trunk Sewer (East of North WWPS) (WW-SS-009)**: New 525 mm trunk sewer extending from North WWPS forcemain to Park Road North.
- **Powerline Road Trunk Sewer (East of North WWPS) (WW-SS-010/WW-SS-011)**: New 825 mm trunk sewer along Park Road North then on Powerline extending from East-West Collector's Road to Coulbeck Road trunk sewer. Sewer sized to accommodate full buildout.

6.2.5. East Expansion Lands

Projects required to service the East Expansion Lands include the following:

- **East Expansion Lands Trunk Sewer (WW-SS-012)**: New 525 mm trunk sewer from Lynden Road to East WWPS along the east collector road.
- **Lynden Road Trunk Sewer Upgrades (WW-SS-013)**: Upsize existing 250 mm sewer to 525 mm along Lynden Road from East WWPS forcemain to Brantwood Park Road.

6.2.6. Tutela Heights

Wastewater sewer upgrades that will be required to accommodate growth include the following:

- **Mount Pleasant Road Trunk Sewer Upgrades (WW-SS-014)**: New 825 mm along Gilkison Street from Mount Pleasant Road to the trunk sewer connection at Delamere Street.
- **Mount Pleasant Road Trunk Sewer (WW-SS-015)**: New 600 mm trunk sewers along Mount Pleasant Road from Tutela Heights Road to existing trunk sewer on Mount Pleasant Road.

- **Tutela Heights Road Trunk Sewer (WW-SS-016)**: New 600 mm trunk sewers along Tutela Heights Road from Tutela Heights WWPS forcemain to Mount Pleasant Road.

6.2.7. Additional Studies

- **Flow Monitoring (WW-II-001)**: City wide flow monitoring program to address existing issues and provide guidance for wet weather flow management practices.
- **City Wide Inflow and Infiltration Program (WW-II-002)**: City wide I&I reduction program based on flow monitoring results to address existing areas of high I&I.
- **Greenwich Street WWPS Inflow and Infiltration Reduction (WW-II-003)**: Greenwich WWPS catchment is subject to high I&I which will be addressed through the initiation of an I&I program to manage peak flows allowing for additional capacity to be realized at the existing Greenwich Street WWPS.
- **Johnson Road WWPS Inflow and Infiltration Reduction (WW-II-004)**: Johnson Road WWPS catchment subject to very high I&I which will be addressed through the initiation of an I&I program to manage peak flows allowing for additional capacity to be realized at the existing Johnson Road WWPS.

6.3. Wastewater Capital Program Summary

A summary of the wastewater servicing strategy capital program with details for each project is provided in **Table 13** and shown in **Figure 9**.

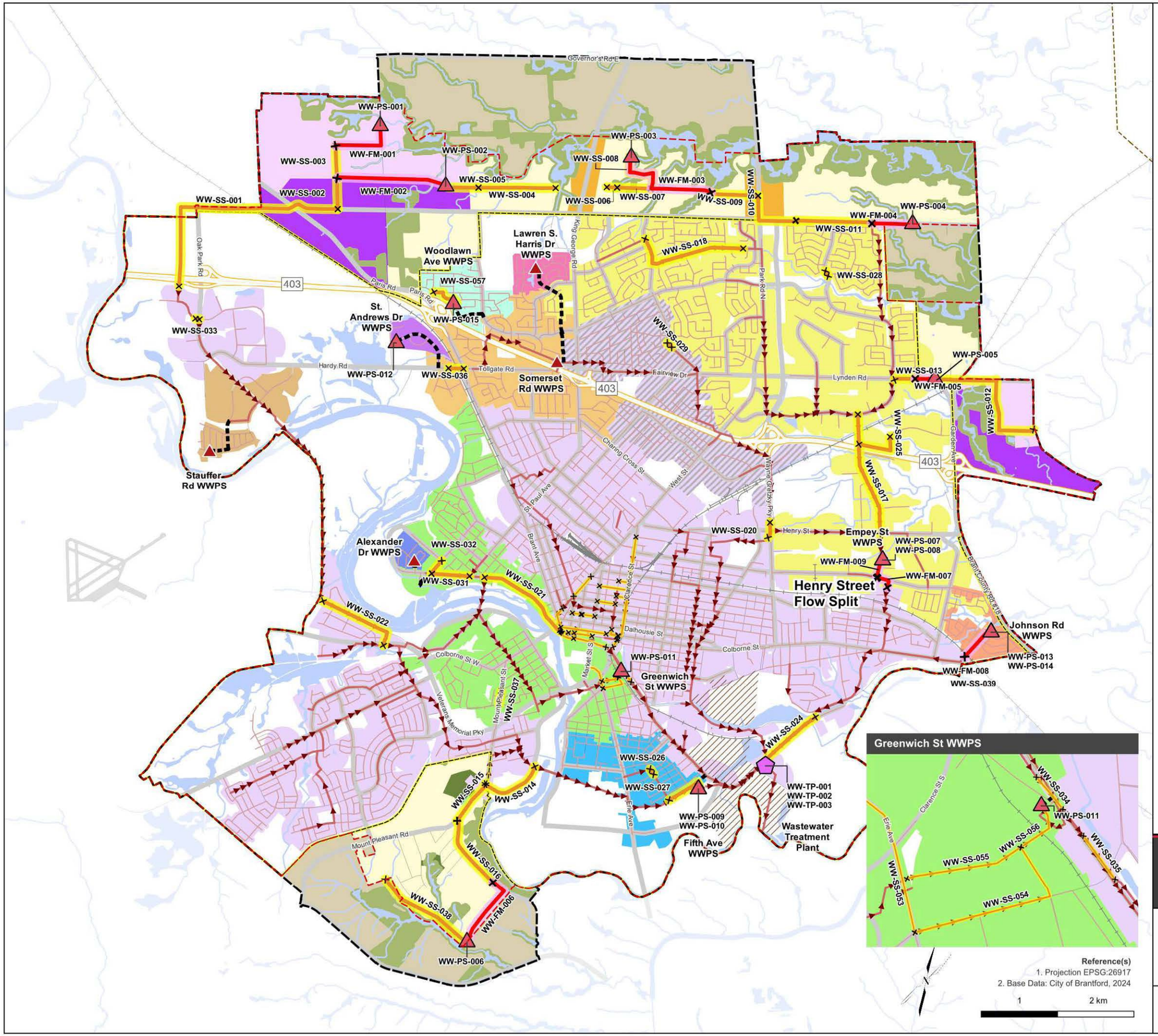
Table 13: Wastewater Capital Program

Capital Program ID	Name	Required Studies	Class EA Schedule	Project Type	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
WW-SS-001	Oak Park Road Trunk Sewer	Municipal Class EA	Schedule B	Sewer 5m	825 mm	$32,885,000	0-5 Years	A
WW-SS-002	North-South Collector's Road Trunk Sewer	-	Exempt	Sewer 5m	825 mm	$1,532,000	0-5 Years	A
WW-SS-003	North-South Collector's Road Trunk Sewer	-	Exempt	Sewer 5m	525 mm	$869,000	10-20 Years	A
WW-SS-004	East-West Collector's Road Trunk Sewer (West of King George Road)	-	Exempt	Sewer 5m	525 mm	$2,054,000	10-20 Years	A
WW-SS-005	East-West Collector's Road Trunk Sewer (West of King George Road)	-	Exempt	Sewer 5m	600 mm	$1,041,000	5-10 Years	A
WW-SS-006	East-West Collector's Road Trunk Sewer (East of King George Road)	-	Exempt	Sewer 5m	300 mm	$219,000	10-20 Years	A
WW-SS-007	East-West Collector's Road Trunk Sewer (East of King George Road)	-	Exempt	Sewer 5m	300 mm	$720,000	10-20 Years	A
WW-SS-008	East-West Collector's Road Trunk Sewer (East of King George Road)	-	Exempt	Sewer 5m	525 mm	$1,547,000	10-20 Years	A
WW-SS-009	East-West Collector's Road Trunk Sewer (East of North WWPS)	-	Exempt	Sewer 5m	525 mm	$1,739,000	5-10 Years	A
WW-SS-010	Powerline Road Trunk Sewer (East of North WWPS)	-	Exempt	Sewer 5m	825 mm	$3,122,000	5-10 Years	A
WW-SS-011	Powerline Road Trunk Sewer (East of North WWPS)	-	Exempt	Sewer 5m	825 mm	$5,511,000	0-5 Years	A
WW-SS-012	East Expansion Lands Trunk Sewer	-	Exempt	Sewer 5m	525 mm	$6,283,000	5-10 Years	A
WW-SS-013	Lynden Road Trunk Sewer Upgrades	-	Exempt	Sewer 5m	525 mm	$657,000	0-5 Years	A
WW-SS-014	Gilkinson Street Trunk Sewer	-	Exempt	Sewer 5m	825 mm	$3,686,000	0-5 Years	B
WW-SS-015	Mount Pleasant Road Trunk Sewer	-	Exempt	Sewer 5m	600 mm	$1,833,000	0-5 Years	A
WW-SS-016	Tutela Heights Road Trunk Sewer	-	Exempt	Sewer 5m	750 mm	$4,192,000	5-10 Years	A
WW-SS-017	Bodine Road Easement Sewer Upgrades	Municipal Class EA	Schedule B	Sewer 5m	1350 mm	$30,832,000	20+ Years	B
WW-SS-018	North Ashgrove Avenue Sewer Upgrades	-	Exempt	Sewer 5m	600 mm	$4,455,000	0-5 Years	B
WW-SS-019	Summerhayes Crescent Servicing Study	Feasibility Study	Exempt	Sewer 5m	-	$200,000	0-5 Years	B
WW-SS-020	Henry Street Flow Split Reconfiguration	-	Exempt	Sewer 10m	825 mm	$670,000	0-5 Years	D
WW-SS-021	Grand River Avenue Sewer Upgrades	-	Exempt	Sewer 5m	525 mm	$4,752,000	5-10 Years	E
WW-SS-022	Oakhill Sewer Upgrades	-	Exempt	Sewer 5m	1050 mm	$6,893,000	10-20 Years	B
WW-SS-023	Downtown Sewers - Chatham St	Feasibility Study	Exempt	Sewer 5m	450 mm	$322,000	0-20 Years	C
WW-SS-024	Mohawk Street Sewer Upgrades	-	Exempt	Sewer 5m	1350 mm	$7,951,000	20+ Years	B

Capital Program ID	Name	Required Studies	Class EA Schedule	Project Type	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
WW-SS-026	Division St Sewer Upgrades	-	Exempt	Sewer 5m	450 mm	$190,000	0-5 Years	B
WW-SS-027	Fifth Ave Sewer Upgrades	-	Exempt	Sewer 5m	450 mm	$990,000	0-5 Years	E
WW-SS-028	Brantwood Park Rd Sewer Upgrades	-	Exempt	Sewer 5m	300 mm	$1,123,000	10-20 Years	E
WW-SS-029	Memorial Dr Sewer Upgrades	-	Exempt	Sewer 5m	375 mm	$1,521,000	10-20 Years	E
WW-SS-030	Clarence St Sewer Upgrades	-	Exempt	Sewer 5m	450 mm	$11,162,000	10-20 Years	D
WW-SS-031	Grand River Ave Sewer Upgrades (West Section)	-	Exempt	Sewer 5m	525 mm	$9,066,000	5-10 Years	E
WW-SS-032	Morrell St Sewer Upgrades	-	Exempt	Sewer 5m	375 mm	$3,305,000	5-10 Years	E
WW-SS-033	Fen Ridge Court Sewer to Resolve Oak Park Road Bottleneck	-	Exempt	Sewer 5m	825 mm	$209,000	5-10 Years	A
WW-SS-034	Greenwich St Sewer Upgrades (US of WWPS)	Feasibility Study	Exempt	Sewer 5m	900 mm	$578,000	0-5 Years	B
WW-SS-035	Greenwich St Sewer Upgrades (DS of WWPS)	Feasibility Study	Exempt	Sewer 5m	900 mm	$715,000	0-5 Years	B
WW-SS-036	Hardy Road Sewer Upgrades	-	Exempt	Sewer 5m	300 mm	$1,077,000	10-20 Years	B
WW-SS-037	Mount Pleasant Street Sewer Upgrades	-	Exempt	Sewer 5m	300 mm	$673,000	10-20 Years	E
WW-SS-038	Tutela Heights Sewer Upstream of Tutela Heights WWPS	Municipal Class EA	Schedule B	Sewer 5m	300 mm	$4,613,000	0-5 Years	A
WW-SS-039	Johnson WWPS Inlet Sewer Upgrades	-	Exempt	Sewer 5m	375 mm	$832,000	5-10 Years	E
WW-SS-040	Downtown Sewers - Darling St	Feasibility Study	Exempt	Sewer 5m	250 mm	$453,000	0-20 Years	B
WW-SS-041	Downtown Sewers - Icomm Dr	Feasibility Study	Exempt	Sewer 5m	750 mm	$2,698,000	0-20 Years	B
WW-SS-042	Downtown Sewers - West St	Feasibility Study	Exempt	Sewer 5m	375 mm	$704,000	0-20 Years	B
WW-SS-043	Downtown Sewers - Marlborough St	Feasibility Study	Exempt	Sewer 5m	300 mm	$273,000	0-20 Years	B
WW-SS-044	Downtown Sewers - Sheridan St	Feasibility Study	Exempt	Sewer 5m	450 mm	$842,000	0-20 Years	B
WW-SS-045	Downtown Sewers - Nelson St	Feasibility Study	Exempt	Sewer 5m	375 mm	$494,000	0-20 Years	B
WW-SS-046	Downtown Sewers - Colborne St	Feasibility Study	Exempt	Sewer 5m	250 mm	$981,000	0-20 Years	B
WW-SS-047	Downtown Sewers - Brant Ave	Feasibility Study	Exempt	Sewer 5m	525 mm	$807,000	0-20 Years	B
WW-SS-048	Downtown Sewers - Colborne St E	Feasibility Study	Exempt	Sewer 5m	525 mm	$393,000	0-20 Years	B
WW-SS-049	Downtown Sewers - Clarence St	Feasibility Study	Exempt	Sewer 5m	675 mm	$2,733,000	0-20 Years	B
WW-SS-050	Downtown Sewers - Clarence St S	Feasibility Study	Exempt	Sewer 5m	900 mm	$900,000	0-20 Years	B

Capital Program ID	Name	Required Studies	Class EA Schedule	Project Type	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
WW-SS-051	Downtown Sewers - Water St	Feasibility Study	Exempt	Sewer 5m	250 mm	$496,000	0-20 Years	B
WW-SS-052	Downtown Sewers - Easement	Feasibility Study	Exempt	Sewer 5m	375 mm	$159,000	0-20 Years	B
WW-SS-053	Downtown Sewers - Market St Erie Ave	Feasibility Study	Exempt	Sewer 5m	375 mm	$938,000	0-20 Years	A
WW-SS-054	Downtown Sewers - Eagle Ave	Feasibility Study	Exempt	Sewer 5m	525 mm	$867,000	0-20 Years	A
WW-SS-055	Downtown Sewers - Veterans Memorial Pkwy	Municipal Class EA	Schedule B	Sewer 5m	675 mm	$977,000	0-20 Years	B
WW-SS-056	Downtown Sewers - Greenwich WWPS Inlet	Municipal Class EA	Schedule B	Sewer 5m	900 mm	$714,000	0-20 Years	B
WW-SS-057	Myrtleville Sewer	-	Exempt	Sewer 5m	300 mm	$829,000	5-10 Years	C
WW-FM-001	Northwest-1 WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	250 mm	$1,534,000	10-20 Years	A
WW-FM-002	Northwest-2 WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	500 mm	$5,393,000	5-10 Years	A
WW-FM-003	North WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	350 mm	$3,279,000	10-20 Years	A
WW-FM-004	Northeast WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	300 mm	$1,012,000	0-5 Years	A
WW-FM-005	East WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	350 mm	$1,460,000	5-10 Years	A
WW-FM-006	Tutela Heights WWPS Forcemain	Municipal Class EA	Schedule B	Forcemain	350 mm	$1,175,000	10-20 Years	A
WW-FM-007	Empey WWPS Forcemain Extension	-	Eligible for Screening	Forcemain	900 mm	$6,897,000	10-20 Years	C
WW-FM-008	Johnson WWPS Forcemain Upgrades	-	Exempt	Forcemain	300 mm	$1,372,000	5-10 Years	E
WW-FM-009	Empey WWPS Forcemain Replacement	-	Eligible for Screening	Forcemain	900 mm	$6,979,000	5-10 Years	B
WW-PS-001	Northwest-1 Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	30 L/s	$12,298,000	10-20 Years	A
WW-PS-002	Northwest-2 Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	190 L/s	$20,800,000	5-10 Years	A
WW-PS-003	North Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	97 L/s	$15,578,000	10-20 Years	A
WW-PS-004	Northeast Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	75 L/s	$14,344,000	0-5 Years	A
WW-PS-005	East Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	105 L/s	$16,028,000	5-10 Years	A
WW-PS-006	Tutela Heights Wastewater Pumping Station	Municipal Class EA	Schedule B	Pumping	80 L/s	$16,772,000	10-20 Years	A
WW-PS-007	Empey Street WWPS Storage Upgrades	Municipal Class EA	Schedule B	Pumping	1000 m^3	$9,568,000	0-5 Years	D
WW-PS-008	Empey Street WWPS Rehabilitation and Improvements	Feasibility Study	Exempt	Pumping	1600 L/s	$7,800,000	0-5 Years	E
WW-PS-009	Fifth Avenue Wastewater Pumping Station Upgrades	-	Exempt	Pumping	72 L/s	$5,057,000	Completion 2021	D

Capital Program ID	Name	Required Studies	Class EA Schedule	Project Type	Size/ Capacity	Total Estimated Cost (2025$)	Timeline	DC Benefit to Existing Class
WW-PS-010	Fifth Avenue WWPS Storage Upgrades	Feasibility Study	Exempt	Pumping	468 m^3	$3,327,000	0-5 Years	E
WW-PS-011	Greenwich Wastewater Pumping Station Rehabilitation and Improvements	Feasibility Study	Eligible for Screening	Pumping	141 L/s	$1,296,000	10-20 Years	E
WW-PS-012	St. Andrews WWPS Storage Upgrades	Feasibility Study	Exempt	Pumping	25 m^3	$503,000	0-5 Years	D
WW-PS-013	Johnson WWPS Storage Upgrades	Feasibility Study	Eligible for Screening	Pumping	115 m^3	$897,000	0-5 Years	E
WW-PS-014	Johnson WWPS Rehabilitation	Feasibility Study	Exempt	Pumping	70 m^3	$576,000	0-5 Years	E
WW-PS-015	Woodlawn WWPS Rehabilitation	Feasibility Study	Exempt	Pumping	-	$576,000	0-5 Years	E
WW-II-001	Flow Monitoring	-	Exempt	Wet Weather Reduction	-	$12,129,000	0-5 Years	D
WW-II-002	City Wide I&I Program	-	Exempt	Wet Weather Reduction	-	$38,502,000	0-5 Years	D
WW-II-003	Greenwich WWPS I&I Reduction	-	Exempt	Wet Weather Reduction	-	$8,019,000	0-5 Years	D
WW-II-004	Johnson WWPS I&I Reduction	-	Exempt	Wet Weather Reduction	-	$8,019,000	0-5 Years	D
WW-TP-001	Wastewater Treatment Plant Upgrades - 0 - 5 Years	Municipal Class EA	Schedule C	Treatment	-	$19,500,000	0-5 Years	D
WW-TP-002	Wastewater Treatment Plant Upgrades - 5-10 Years	Municipal Class EA	Schedule C	Treatment	-	$9,750,000	5-10 Years	B
WW-TP-003	Wastewater Treatment Plant Upgrades - 10-20 Years	Municipal Class EA	Schedule C	Treatment	-	$75,400,000	10-20 Years	B
					TOTAL	**$502,117,000**		



Capital Program Projects

- Pumping Stations
- Wastewater Treatment Plant
- Sewer Mains
- Forcemains

Wastewater Network

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Forcemains
- Trunk Mains (>300 mm)
- Gravity Mains (≤300 mm)

WWPS Catchment

- Alexander Dr WWPS
- Empey St WWPS
- Fifth Ave WWPS
- Greenwich St WWPS
- Johnson Rd WWPS
- Lawren S. Harris Dr WWPS
- Somerset Rd WWPS
- St.Andrew's Ave WWPS
- Woodlawn Rd WWPS
- Upstream of Henry Street Flow Split
- WWTP
- Stauffer Rd WWPS

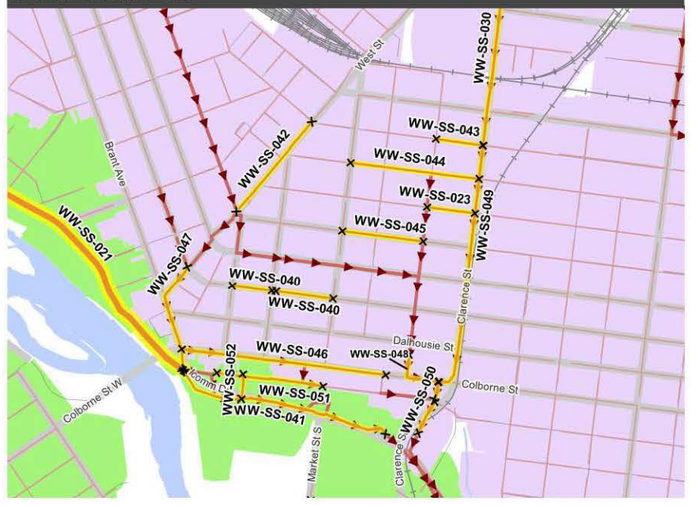
General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Settlement Area Boundary
- Outside Municipalities
- Waterbody and Watercourses

Proposed Preferred Land Use Options

- Agricultural Designation
- Core Natural Areas
- Downtown Urban Growth Centre
- General Employment
- Intensification Corridor
- Major Commercial Centre
- Major Institutional
- Parks and Open Space
- Prestige Employment
- Residential

Downtown Brantford



Greenwich St WWPS

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024

1 2 km

Executive Summary - Figure 9
Wastewater - Capital Program

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford (Ontario, Canada)

GEI

Last Updated: August 2026
Document ID: 2404322-WW-005-WW
Capital Program v2

Document Path: B:\Working\BRANTFORD ON, CITY OF\2404322 Master Servicing Plan - 2025 Development Charges Update\05_GIS\6_Final Report\2404322-WW-005-WW

7. Stormwater Servicing Strategy

The 2025 amendment is limited to updates to the City's water and wastewater servicing strategies. No changes to the stormwater servicing strategy were undertaken as part of the 2025 Master Servicing Plan (MSP) Amendment. Accordingly, Volume V – Stormwater remains unchanged from the 2021 Master Servicing Plan Update – 2051 Amendment. The summary provided below is unchanged and is retained to reflect the content of the 2021 MSP Update as documented in the posted Volume V.

Similar to water and wastewater, the process for developing, evaluating and selecting the preferred stormwater servicing strategy followed these key steps:

- Review of baseline conditions across the stormwater system;
- Identify opportunities and constraints of the stormwater system;
- Develop high level servicing concepts;
- Review each concept with respect to environmental, social, legal, technical and financial factors. Develop advantages and disadvantages for each;
- Provide additional detail for the preferred concept ensuring alignment, siting, capacity, timing and other technical factors are identified; and,
- Develop a conceptual cost estimate for each project.

7.1. Opportunities and Constraints

Existing and future stormwater opportunities and constraints were identified through discussions with City staff, as well as through hydraulic analyses and review of infrastructure data (e.g. GIS, design reports, as-built information, etc.). The stormwater system's hydraulic model was used to analyze the performance of the existing and future system under the City of Brantford's Chicago storm event for various return periods.

In general, the stormwater collection system has various local and trunk sewer deficiencies for the applicable level-of-service storm events within each subcatchment. Due to the segmented nature of the City's stormwater system, the opportunities and constraints were determined on a subcatchment specific basis.

The key opportunities and constraints, summarized in **Figure 10**, identified by the City and through the modelling exercise are included as follows.

Outlet

- **Area with no formal outlet north of Highway 403:** A greenfield area north of Highway 403 does not have an existing stormwater outlet based on local topography. The area is bound by Powerline Road to the north, Paris Road to the east, Highway 403 to the south, and the Grand River to the west.
- **Low areas upstream of dike system have no outlet when gates are closed:** The City of Brantford is protected from high Grand River water elevations through the use of a dike system. During periods of high-water elevation, the outfall gates to the Grand River are

temporarily closed to prevent backwater effects into the stormwater system. As such, subcatchments which outlet to the Grand River along the dike system do not have an adequate stormwater outlet when water levels are high.

Conveyance

- **Determine bottlenecks and beneficial infrastructure upgrades:** Bottlenecks have been identified within the underground linear infrastructure.
- **Capacity needs and upgrades within intensification corridors to be determined:** Intensification corridors have been outlined in the Official Plan update and strategically determined throughout the City of Brantford. Policy within the City states that development within the City must control post-development flowrates to pre-development flowrates. As the intensification corridors will be redeveloped within the 2051 planning horizon, there are unique opportunities to manage and mitigate stormwater flows through Low Impact Development within these areas.
- **Both short-term and long-term strategies to manage conveyance capacity:** Immediate conveyance capacity concerns where historical flooding has been noted require solutions implemented in the short term. To ensure the entire City system is adequately sized to convey the minor storm event, strategies need to be implemented through long term planning to manage both construction timelines and City budgeting priority. Long-term solutions include innovative technologies such as Low Impact Development, as well as the planning, monitoring, and studies required to support long-term infrastructure decision making in the City of Brantford.

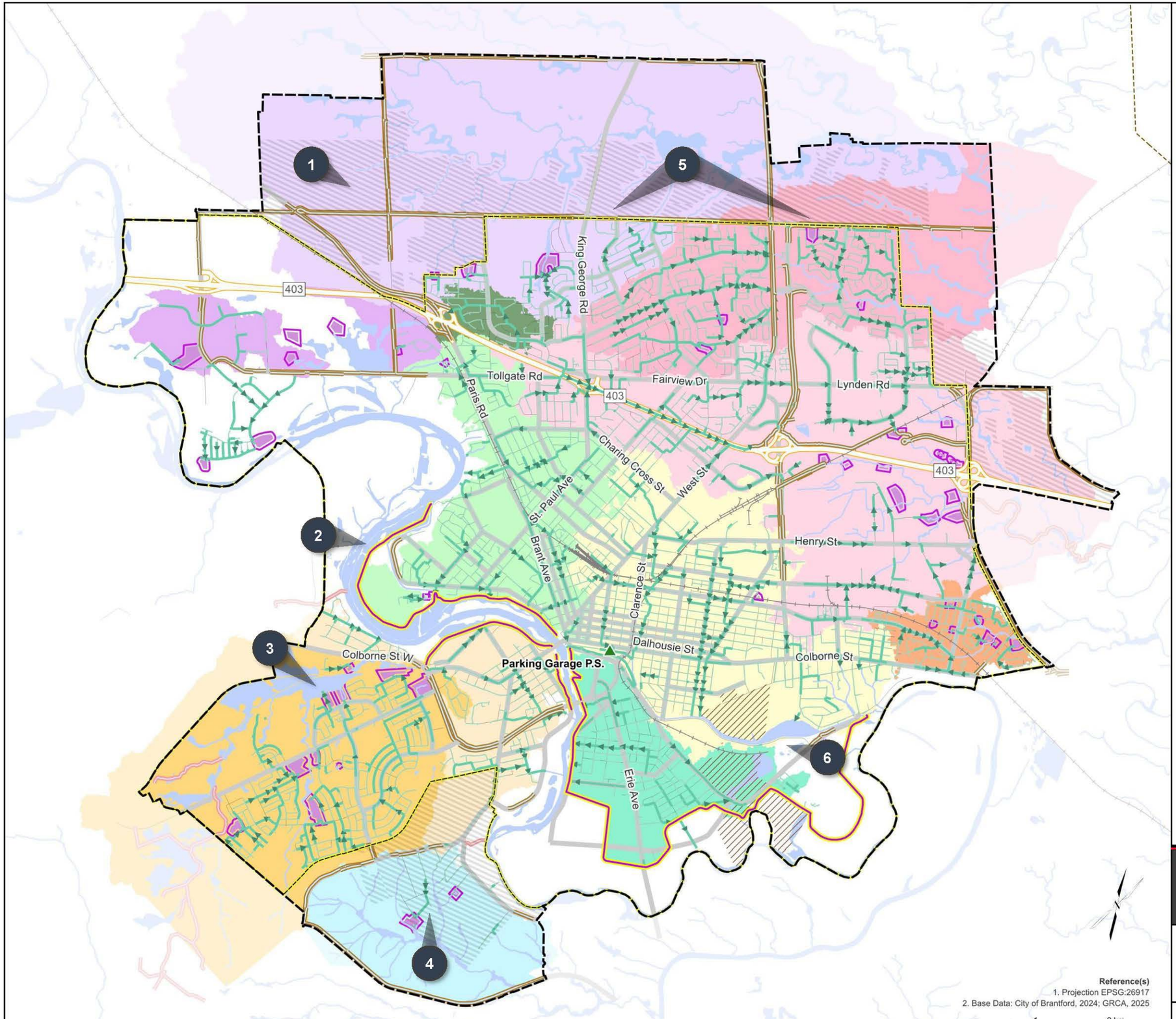
Water Quality

- **Temperature control for coldwater creeks and sensitive species:** Portions of the headwaters of Fairchild Creek are coldwater watercourses and require thermal mitigation prior to the discharge of stormwater. Future intensification and developments discharging to coldwater creeks in the City of Brantford will be required to account for thermal mitigation practices and technologies to mitigate the effects of intensification on stormwater temperature. Additional information on coldwater creeks in the City of Brantford are found in the North Brantford and Tutela Heights Subwatershed Study (2020).
- **High nutrient loading to Mohawk Lake with potential for quality enhancement:** The Mohawk Lake subcatchment discharges into Mohawk Lake and the Mohawk Canal, which ultimately discharges into the Grand River. The City recently completed the Mohawk Lake and Mohawk Canal Functional Master Drainage and Restoration Study (2019) which outlines the water quality concerns within Mohawk Lake and follows the Municipal Class EA process to determine preferred remediation alternatives.
- **Implement Low Impact Development (LID) technologies in areas with high groundwater recharge:** The City of Brantford has conducted multiple subwatershed studies to determine the areas of high groundwater recharge within the City limits. Low Impact Development technologies are an innovative method of matching post-development groundwater recharge to pre-development conditions. Maintaining

existing groundwater recharge conditions through LID technologies promotes healthy groundwater conditions within the watershed.

Expansion Lands

- **Future servicing of expansion lands including multiple new stormwater management ponds:** This includes details on preliminary pond sizes and locations, control criteria for expansion lands, and details on the background information related to the expansion lands.
- **Conveyance and storage infrastructure isolated from existing system:** The future stormwater system within the expansion lands is isolated from the existing stormwater collection and conveyance system due to existing topography. Existing conditions must be maintained during future development to ensure the health of the watershed. As such, the existing isolated systems within the expansions will continue to drain to the existing outlets.



Stormwater Network

- Pumping Station
- Stormwater Pipes (>=450 mm)
- Stormwater Pipes (<450 mm)
- Dikes
- Ditches
- Municipal Drain
- Detention Ponds

Major Subcatchments

- D'Aubigny
- Fairchild-Garden
- Fairchild-Jones
- Fairchild-North
- Fairchild-South
- Grand Eagle View
- Grand Homedale
- Grand NW
- Grand SW
- Mohawk
- Tutela Heights
- Unknown

General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Waterbody and Watercourses
- Expansion Lands

Reference(s)
1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024; GRCA, 2025

1 2 km

Site Specific Opportunities & Constraints

1. Future servicing of expansion lands including multiple new stormwater management ponds / facilities.
2. Grand River dikes need to manage stormwater flow and potential flooding during high Grand River level.
3. Temperature control for coldwater creeks with sensitive species.
4. Servicing of growth in Tutela Heights area.
5. Expansion lands conveyance and storage infrastructure isolated from existing systems.
6. High natural loading to Mohawk Lake – potential for enhancement.

Overall Opportunities & Constraints

- Implement Low Impact Development (LID) technologies in areas with high groundwater recharge.
- Short- and long-term strategies to manage infrastructure conveyance capacity.
- Determine bottlenecks and most beneficial infrastructure upgrades.
- Storm sewer capacity needs along intensification corriddors.
- Achieve long-term Level of Service (LOS) targets for flooding and water quality at outlet.
- Implement system resiliency to climate change.

Executive Summary – Figure 10
Existing Stormwater System Opportunities and Constraints

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford
(Ontario, Canada)

GEI Consultants Canada

Last Updated: December 2025
Document ID: 2404322-SW-002

7.2. High-Level Servicing Concepts

The servicing concepts presented in **Table 14** were evaluated from a high level to determine the City of Brantford stormwater management criteria which benefit from the proposed servicing concepts. Within **Table 14**, an "✗" indicates that the control criterion is not impacted by or adequately addressed under the proposed servicing concept. A "✓" indicates that the control criterion is impacted or adequately addressed under the proposed servicing concept. When the symbols are enclosed by parenthesis, this indicates that the control criterion is/is not impacted or adequately addressed under most specific scenarios or technologies involved. Due to the variety of stormwater management technologies available within high-level servicing concepts, it is important to recognize that some specific technologies may or may not address control criteria concerns, dependent on the specific technology/strategy selected.

Table 14: High-Level Servicing Concept Evaluation

	Description	Flow Control	Volume Control	Quality Control	Thermal Control
Status Quo	- As is System	✗	✗	✗	✗
Minor System Upgrades	- Sewers	✓	✗	✗	✗
Storage	- Ponds - Underground Storage - Bioretention (LIDs)	✓	(✓)	(✓)	(✗)
Low Impact Development (LID) Strategies	- Permeable Pavers - Infiltration Systems - BioRetention - BioFiltration - Green Roofs	(✓)	(✓)	(✓)	(✓)
Major System Upgrades	- Roadway Curbing - Roadway ditches - Open Channel - Sewers (limited)	✓	✗	(✗)	(✗)
Other	- Oil Grit Separator	✗	✗	✓	✗

7.3. Preferred Stormwater Servicing Strategy

The City of Brantford's understanding of the existing condition and performance of its stormwater system is continuing to evolve; however, there remains a higher degree of uncertainty as compared to the City's understanding of its water and wastewater systems.

Throughout the development of the 2020 MSP Update, it was determined that the best plan of action, as is related to the Stormwater Infrastructure, was to undertake a high-level (less detailed) assessment and evaluation of the stormwater system with the goal of establishing the overall vision and strategy for the management of the stormwater system. The high-level assessment and evaluation will then be utilized to establish a preliminary stormwater capital program. The resultant preliminary stormwater capital program will then be used as a guide while the City undertakes subsequent investigations and studies to strengthen the City's understanding of the condition and performance of the stormwater systems, develop and confirm the desired servicing objectives, refine local stormwater servicing strategies, and confirm upgrade needs. The stormwater implementation plan presented in **Section 7.4** provides a roadmap for the specific studies and fieldwork required to close the data gaps and provide specific, concrete servicing strategies and solutions.

7.3.1. Preferred Stormwater Servicing Strategy Overview

The preliminary preferred stormwater servicing strategy is split between multiple components for each sub-catchment, as well as system wide local upgrades by subcatchment. The preliminary preferred servicing strategy has been determined to address existing stormwater system deficiencies, as future growth, expansion, and intensification will require control of post-development conditions to pre-development/existing conditions or better. A summary of the preliminary preferred stormwater servicing strategy is as follows:

- **Grand River – Holmedale Subcatchment:** Upgrade trunk sewers along Lawrence Street and Albany Street to accommodate existing flows. Local upgrades are also required to address localized system deficiencies.
- **Grand River – Southwest Subcatchment:** Local upgrades are required to address localized system deficiencies.
- **Grand River – Eagle Place Subcatchment:** Divert stormwater west, to a proposed upgraded Seventh Street trunk sewer, away from existing Sanderson Street sewers. Local upgrades are also required to address localized system deficiencies.
- **Grand River – Northwest Subcatchment:** Direct the future Greenfield Area growth north of Highway 403 to the west, to a single outlet at the Grand River. Local upgrades are also required to address localized system deficiencies.
- **Mohawk Lake Subcatchment:** Proceed with upgrades and recommendations contained within the Mohawk Lake and Mohawk Canal Functional Master Drainage and Restoration Study (2019). Local upgrades are also required to address localized system deficiencies.
- **Fairchild Creek – Garden Subcatchment:** Divert stormwater north of Highway 403 to a future trunk sewer along Fairview Drive. Local upgrades are also required to address localized system deficiencies.
- **Fairchild Creek – Jones Subcatchment:** Local upgrades are required to address localized system deficiencies.

- **Fairchild Creek – North Subcatchment:** Proceed with upgrades and recommendations contained within The North-East End Flood Remediation Study (October 2020).
- **Fairchild Creek – South Subcatchment:** Minimal local upgrades are required to address localized system deficiencies.
- **D'Aubigny Creek Subcatchment:** Minimal local upgrades are required to address localized system deficiencies.

7.4. Implementation Plan

Due to the high-level nature of the stormwater component, multiple additional studies are recommended to gain a more in-depth understanding of the City of Brantford's stormwater infrastructure before the City proceeds to implement the stormwater recommendations.

The recommended study implementation pathway is provided in **Figure 11**. The implementation plan lays out the systematic process for investigation and studies that are required to determine condition and performance of the stormwater systems, develop and confirm the desired servicing objectives, and refine local stormwater servicing strategies and confirm upgrade needs. **Table 15** provides a summary of the required studies and consultation.

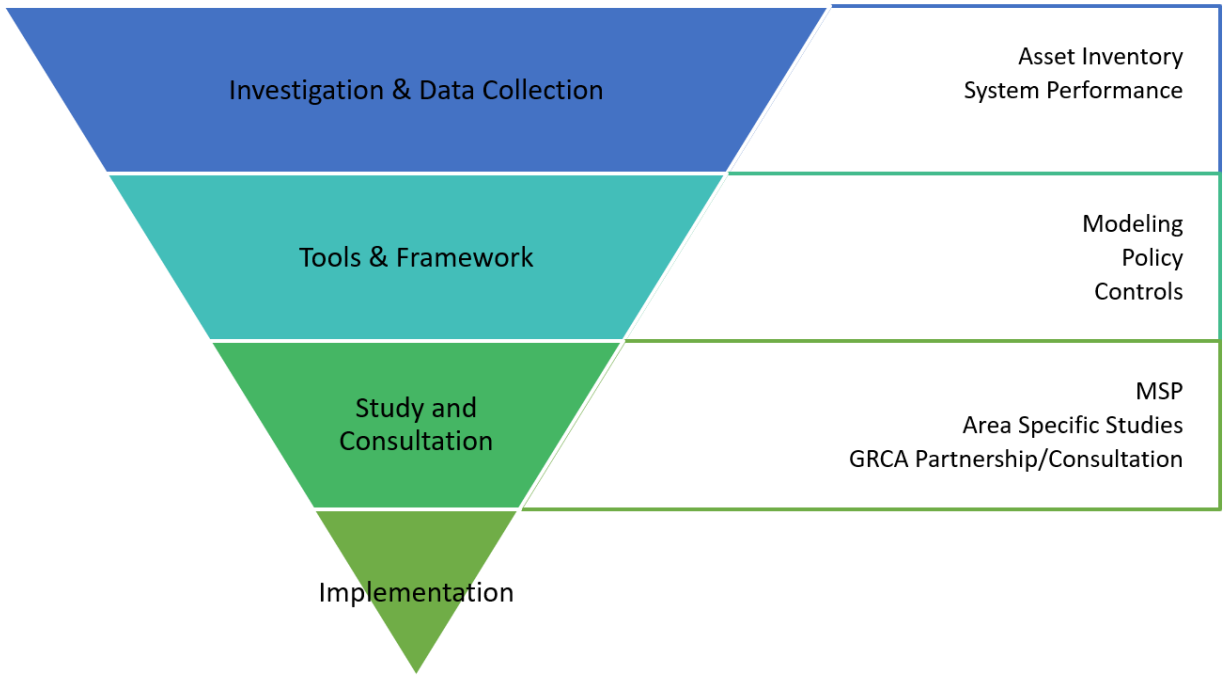


Figure 11: Recommended Path to Implementation

7.4.1. Investigation & Data Collection

At the highest level and most time sensitive process within the implementation plan is the Investigation and Data Collection. There are currently gaps in the City's data and understanding of the interactions within the stormwater management and conveyance system. As such, it is

important to initiate the data collection and investigation as soon as budgets permit (0 - 5 years).

The following is a list of the recommended data that is either to be collected on an ongoing basis, or the initiation of data collection is required:

- LiDAR Survey of municipal right-of-way
  - Required to determine major overland flow paths to better understand deficiencies under the major storm events
- Rural ditch survey (recently completed)
  - Required to provide interconnections between minor system (pipe) outlets and the ultimate watercourses. Ditches are also often used to collect and convey the major system flows in rural areas.
- Existing infrastructure survey and condition assessment (CCTV sewers – completed through ongoing City initiative)
  - The existing stormwater model and analysis performed throughout the 2020 MSP Update was based on capacity deficiencies and future planning. It is necessary to determine costs associated with aging infrastructure, as well as confirm technical model details through the infrastructure survey. This includes a stormwater management pond assessment and Pond Bathymetric survey
- Continuous flow monitoring and water quality monitoring
  - Flow monitoring (including stream flow and temperature monitoring) is required to continually calibrate/validate the stormwater model with various storm events to ensure that the tools used in financial decision making are accurate.
- Dike outlet monitoring
  - The dike system is currently manually operated and potentially creates both minor system and major system surcharging and/or flooding with high water levels in the Grand River. Monitoring of the outlets is required to determine a flooding mitigations strategy.
- Groundwater monitoring
  - Required to support the stage 2 subwatershed studies.

The data collected from the above studies will support the tools and framework that the City utilizes to determine the implementation of stormwater related capital projects.

A detailed asset inventory will be built from these data-sets, and these datasets will allow the system-wide performance to be assessed. These datasets will also support the detailed Feasibility Studies and Schedule B EA studies required in support of the capital projects.

7.4.2. Tools & Framework

Once the investigation and data collection are complete, the Tools and Framework in place will be adjusted or redeveloped with the newly acquired data. Where there are no existing tools or framework in place, new tools will be developed, and framework written to benefit the future management of the City of Brantford's stormwater infrastructure. The proposed tools and framework to be updated or developed are as follows:

- Stormwater model update and calibration
  - Utilizes minor and major system data collected to assist in determining required capital projects. The accuracy of the model is dependent on the quality of the data collected.
- Climate change adaption and mitigation policy
  - As climate change progresses, there are indications that the intensity, duration, and frequency of storm events are changing. An adaption strategy and infrastructure mitigation policy will assist in determining that infrastructure is future-proof.
- Stormwater Policies and By-Laws Review and Update
  - A comprehensive review and update to the City's existing stormwater management policies, by-laws, and other supportive documents to ensure that they are up to date, consistent with existing and future planned updates to Provincial and Federal regulations and are consistent with and support the implementation of the proposed stormwater management strategies.
- Stormwater infrastructure update funding studies and associated policy
  - Stormwater within the City of Brantford is currently tax supported in its entirety. A policy determining potential user rates would support the capital requirements for operational and maintenance upgrades.

The tools and framework above will support the studies required to determine the most practical and cost-effective strategies for implementation.

7.4.3. Studies & Consultation

Lastly, prior to implementation, Studies and Consultation will be required to confirm the stormwater system needs and upgrade requirements. Details of the specific studies are included in **Volume V**.

Table 15: Summary of Required Studies and Consultation

Capital Program ID	Name	Timeline (years)	Cost
SW-SD-001	City-Wide Asset Inventory	0-5	$ 322,000
SW-SD-002	Continuous Water Quality & Flow Monitoring and Reporting	0-5	$ 5,910,000
SW-SD-003	Stormwater Model Update	0-5	$ 371,000
SW-SD-004	Dike System Outlet Program	0-5	$ 439,000
SW-SD-005	Update Subwatershed Studies	0-5	$ 1,170,000
SW-SD-006	Climate Change Action Plan and Best Practices Review	0-5	$ 117,000
SW-SD-007	Stormwater Master Servicing Plan Update	0-5	$ 293,000
SW-SD-008	Stormwater Rate Review	0-5	$ 117,000
SW-SD-009	Local Area Stormwater Management Investigation and Implementation Plans	0-5	$ 140,000

7.5. Stormwater Capital Program Summary

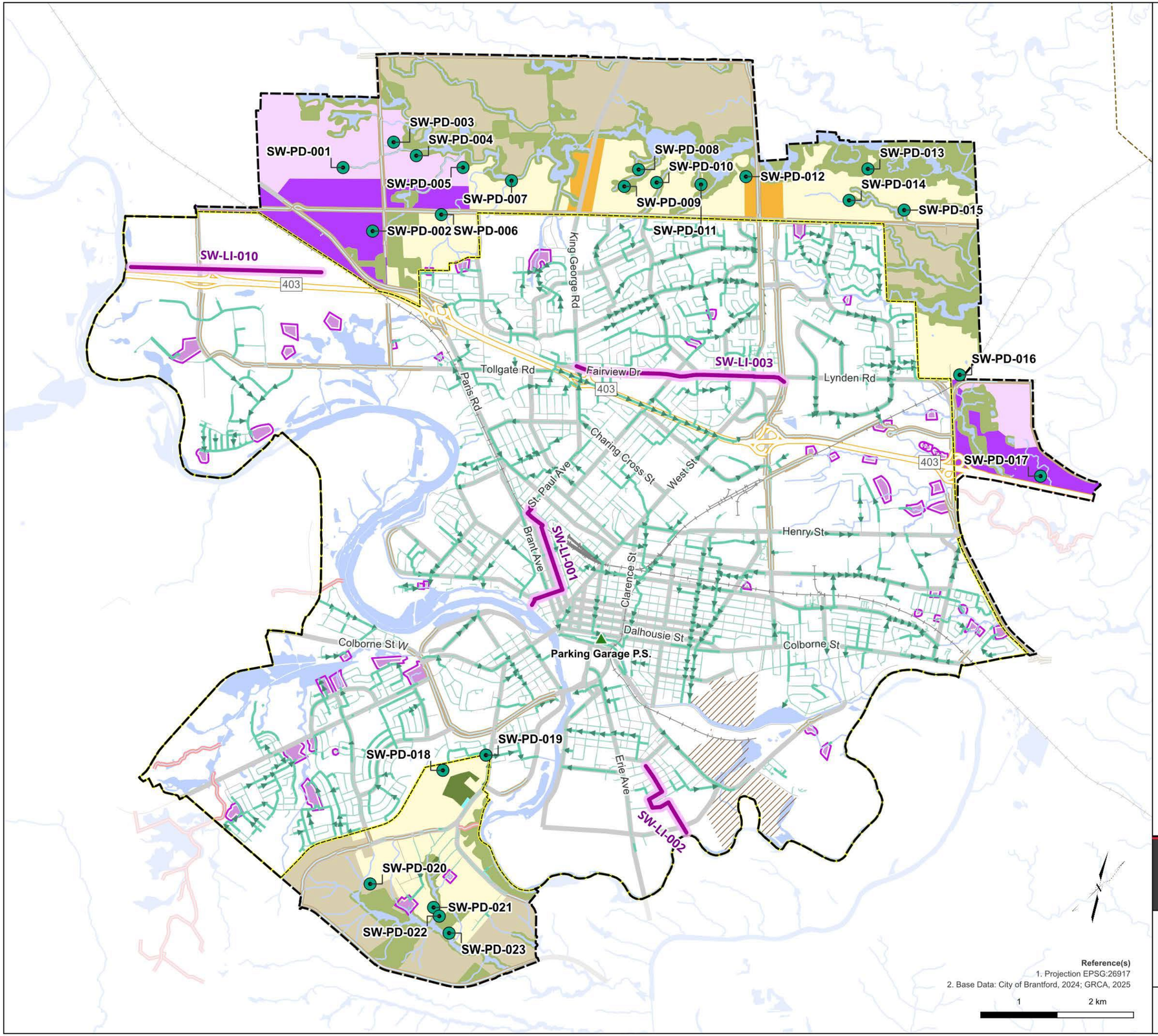
Table 16 provides a summary of the capital program for stormwater infrastructure projects and study projects. All "SW-LI-###" projects within **Table 16**, aside from SW-LI-006, SW-LI-007, and SW-LI-011 which have recently completed Schedule B EA studies, will require a Feasibility Study or Schedule B EA to confirm the recommended Master Plan approach based on additional in-depth analysis. These projects include both the local infrastructure upgrade estimates required to accommodate existing level of service concerns, as well as trunk sewer alignment upgrades or diversion estimates per the capital plan.

The "SW-PD-###" projects within **Table 16**, shown in **Figure 12**, provide a summary of the pond projects and timelines associated with the Secondary Plan areas**.**

Table 16: Stormwater Capital Program Summary Table

Capital Program ID	Name	Required Studies	Class EA Schedule	Size/ Capacity	Total Estimated Cost (2020$)	Timeline	DC Benefit to Existing Class
SW-LI-001	Homedale Catchment Trunk & Local Upgrades	Feasibility Study	Eligible for Screening	Varies	$9,129,000	0-5 years	E
SW-LI-002	Eagle Place Catchment Trunk & Local Upgrades	Feasibility Study	Eligible for Screening	Varies	$6,336,000	0-5 years	E
SW-LI-003	Fairchild Garden Catchment Trunk & Local Upgrades	Municipal Class EA	B	Varies	$49,156,000	0-10 years	E
SW-LI-004	Grand River Southwest Catchment Local Upgrades	Feasibility Study	Eligible for Screening	450 mm	$2,449,000	10-20 years	E
SW-LI-005	Mohawk Lake Local Catchment Upgrades	Feasibility Study	Eligible for Screening	525 mm	$17,008,000	5-10 years	E
SW-LI-006	Mohawk Lake Catchment Upgrades	Various	-	Varies	$7,180,000	0-5 years	E
SW-LI-007	Mohawk Lake Catchment Upgrades	Various	-	Varies	$12,150,000	0-10 years	E
SW-LI-008	Fairchild Creek South Catchment Local Upgrades	Feasibility Study	Eligible for Screening	450 mm	$557,000	10-20 years	F
SW-LI-009	Fairchild Creek Jones Catchment Local Upgrades	Feasibility Study	Eligible for Screening	525 mm	$3,369,000	10-20 years	E
SW-LI-010	Grand River Northwest Catchment Local Upgrades	Municipal Class EA	B	Varies	$11,011,000	0-5 years	A
SW-LI-011	Fairchild Creek North Catchment Local Upgrades	-	-	Varies	$30,300,000	0-5 years	F
SW-PD-001	Northwest Employment Area (Pond #1)	Municipal Class EA	B	94 ML	$1,418,000	0-5 years	A
SW-PD-002	Southwest Employment Area (Pond #2)	Municipal Class EA	B	62 ML	$1,318,000	0-5 years	A
SW-PD-003	Golf Road North Employment Area (Pond #3)	Municipal Class EA	B	25 ML	$396,000	0-5 years	A
SW-PD-004	Golf-Powerline Employment Area (Pond #4)	Municipal Class EA	B	40 ML	$877,000	0-5 years	A
SW-PD-005	Balmoral-Powerline Northwest Area (Pond #5)	Municipal Class EA	B	25 ML	$576,000	0-5 years	A
SW-PD-006	Balmoral-Powerline Southwest Area (Pond #6)	Municipal Class EA	B	19 ML	$456,000	0-5 years	A
SW-PD-007	Northridge North Area (Pond #7)	Municipal Class EA	B	14 ML	$356,000	0-5 years	A
SW-PD-008	King George Corridor (Pond #8)	Municipal Class EA	B	16 ML	$396,000	0-10 years	A
SW-PD-009	King George Corridor (Pond #9)	Municipal Class EA	B	10 ML	$276,000	0-10 years	A
SW-PD-010	King George Corridor (Pond #10)	Municipal Class EA	B	6 ML	$195,000	10-20 years	A
SW-PD-011	Powerline-Park (Pond #11)	Municipal Class EA	B	7 ML	$216,000	10-20 years	A

Capital Program ID	Name	Required Studies	Class EA Schedule	Size/ Capacity	Total Estimated Cost (2020$)	Timeline	DC Benefit to Existing Class
SW-PD-012	Powerline-Park (Pond #12)	Municipal Class EA	B	13 ML	$335,000	10-20 years	A
SW-PD-013	Northeast Residential Area (Pond #13)	Municipal Class EA	B	13 ML	$335,000	0-5 years	A
SW-PD-014	Northeast Residential Area (Pond #14)	Municipal Class EA	B	22 ML	$516,000	0-5 years	A
SW-PD-015	Northeast Residential Area (Pond #15)	Municipal Class EA	B	9 ML	$256,000	0-5 years	A
SW-PD-016	Lynden-Garden Residential Area (Pond #16)	Municipal Class EA	B	15 ML	$376,000	0-5 years	A
SW-PD-017	Garden-403 Employment Area (Pond #17)	Municipal Class EA	B	72 ML	$1,519,000	0-10 years	A
SW-PD-018	Tutela Heights North Area (Pond #18)	Municipal Class EA	B	17 ML	$417,000	0-5 years	A
SW-PD-019	Tutela Heights North Area (Pond #19)	Municipal Class EA	B	9 ML	$256,000	0-5 years	A
SW-PD-020	Phelps Creek Area (Pond #20)	Municipal Class EA	B	4 ML	$156,000	10-20 years	A
SW-PD-021	Phelps Creek Area (Pond #21)	Municipal Class EA	B	12 ML	$316,000	10-20 years	A
SW-PD-022	Phelps Creek Area (Pond #22)	Municipal Class EA	B	19 ML	$456,000	10-20 years	A
SW-PD-023	Phelps Creek Area (Pond #23)	Municipal Class EA	B	6 ML	$195,000	10-20 years	A
SW-SD-001	City-Wide Asset Inventory	-	-	-	$322,000	0-5 years	Study
SW-SD-002	Continuous Water Quality & Flow Monitoring and Reporting	-	-	-	$5,910,000	0-5 years	Study
SW-SD-003	Stormwater Model Update	-	-	-	$371,000	0-5 years	Study
SW-SD-004	Dike System Outlet Program	-	-	-	$439,000	0-5 years	Study
SW-SD-005	Update Subwatershed Studies	-	-	-	$1,170,000	0-5 years	Study
SW-SD-006	Climate Change Action Plan and Best Practices Review	-	-	-	$117,000	0-5 years	Study
SW-SD-007	Stormwater Master Servicing Plan Update	-	-	-	$293,000	0-5 years	Study
SW-SD-008	Stormwater Rate Review	-	-	-	$117,000	0-5 years	Study
SW-SD-009	Stormwater Policy Review and Update	-	-	-	$140,000	0-5 years	Study
				TOTAL	**$169,859,000**		



Capital Program Projects

- Stormwater Ponds
- Alignment Projects

Stormwater Network

- Pumping Station
- Stormwater Pipes (>=450 mm)
- Stormwater Pipes (<450 mm)
- Ditches
- Municipal Drain
- Detention Ponds

General Features

- Expressway / Highway
- Arterial and Collector
- Local Roads
- Railway
- Six Nations of the Grand River Territory
- Current City Municipal Boundary
- 2016 Municipal Boundary
- Outside Municipalities
- Waterbody and Watercourses

Proposed Preferred Land Use Options

- Agricultural Designation
- Core Natural Areas
- Downtown Urban Growth Centre
- General Employment
- Intensification Corridor
- Major Commercial Centre
- Major Institutional
- Parks and Open Space
- Prestige Employment
- Residential

Reference(s)

1. Projection EPSG:26917
2. Base Data: City of Brantford, 2024; GRCA, 2025

Executive Summary - Figure 12
Stormwater - Capital Program

Project Name:
Water and Wastewater Master Servicing Plan – Development Charges Update 2025 Amendment

Client Name:
City of Brantford (Ontario, Canada)

GEI Consultants Canada

Last Updated: June 2026
Document ID: 2404322-SW-003 SW Capital Program

Document Path: B:\Working\BRANTFORD ON, CITY OF\2404322 Master Servicing Plan - 2025 Development Charges Update\05_GIS\6_Final Report\2404322-SW-003 SW Capital Program.qgz