City of Brantford

2014 Master Servicing Plan (MSP) for Water, Sanitary and Stormwater Services

Volume I - Executive Summary

Final Report

July, 2014

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In Association With:

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1 Introduction

1.1 Background

Brantford is a city located in southwestern Ontario, bordering with the County of Brant and in close proximity with the City of Hamilton, and the Greater Golden Horseshoe Area. The City of Brantford is responsible for: water treatment, transmission and distribution mains, storage facilities and pumping stations; wastewater treatment, sewers, forcemains and sewage pumping stations; as well as, stormwater sewers, drainage ditches, culverts, and stormwater management ponds.

The City of Brantford owns and operate its water system, which draws water from the Grand River and distributes treated water to its residents. The City employs the Ontario Clean Water Agency (OCWA) to operate, maintain and manage the Brantford Water Pollution Control Plant and nine sewage pump stations. The entirety of the City is located within the Grand River Watershed. The majority of the City drains directly to the Grand River or Grand River tributaries Mohawk Lake and D'Aubigny Creek via City owned stormwater infrastructure; however, a significant portion of the northeastern segment of the City discharges to local creeks along the City's north and east boundaries.

The City of Brantford is part of the Greater Golden Horseshoe (GGH) area situated on the Grand River in the heart of Southern Ontario. The Government of Ontario's legislative growth plan, *Places to Grow Act, 2005*, and its *Amendment 2, 2013*, identifies substantial population and employment growth for the City to 2031.

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 initiated the preparation of a Master Servicing Plan for water, wastewater and stormwater services under the Municipal Engineers Association (MEA) Master Plan Class Environmental Assessment process.

As the study proponent, the City of Brantford retained BluePlan Engineering Limited as lead consultant, in association with Associated Engineering, GeoAdvice, Watson & Associates and McLeod Wood, to complete the Master Plan through an integrated process with City Staff, stakeholders and the public.

The 2014 Master Servicing Plan provides a review, evaluation and development of water, wastewater and stormwater servicing strategies to support existing needs and projected growth within the City. The Master Plan uses updated population and employment growth forecasts based on a 2031 planning horizon.

The 2014 Master Servicing Plan is being completed concurrently with the City's Transportation Master Plan Update to enable, where advantageous, alignment of recommended work or capital projects, minimizing potential impacts and disruptions to the public. The 2014 Master Servicing Plan is 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, sanitary and storm systems for the entire City to 2031 and beyond.

1.2 Master Plan Objectives

The Master Servicing Plan for Water, Sanitary 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 2031.

The 2014 Master Servicing Plan 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, and to evaluate and develop recommended servicing strategies.

The key objectives of the 2014 Master Servicing Plan are as follows:

- Review planning forecasts to 2031 and determine the impacts on servicing needs for the City's water, wastewater and stormwater infrastructure;
- Consider and incorporate proposed water, wastewater and stormwater infrastructure needs beyond 2031;
- Undertake a comprehensive review and analysis for the water, wastewater and stormwater servicing requirements;
- Complete the Master Servicing Plan 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;
- Utilize recently completed and on-going projects to update infrastructure status, capacity and cost estimates;
- Utilize the updated water, wastewater and stormwater hydraulic models for the analysis of servicing alternatives;
- Establish a complete and implementable water, wastewater and stormwater capital program; and
- Extensive consultation with the public and stakeholders.

1.3 Master Plan Documentation Layout

The 2014 Master Servicing Plan Report, including all supporting volumes, is the documentation placed on public record for the prescribed review period. The 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*.

The Master Servicing Plan Report is organized into six volumes as illustrated in Figure 1.1 and as described below:

Figure 1.1 – Master Servicing Plan Document Layout

Volume I – Executive Summary

Volume I provides a brief overview of the 2014 Master Servicing Plan. It summarizes the information contained in Volumes 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 solutions and recommendations.

Volume II – Background and Planning Context

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 and future considerations. This volume also introduces the existing infrastructure conditions for the water, wastewater and stormwater systems. The appendices in this volume contain relevant baseline and planning information including:

- Appendix 2A – Water and Wastewater Servicing Principles and Policies Paper
- Appendix 2B – Planning Data and Memo
- Appendix 2C – Environmental Mapping

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 in Volume III is the detailed evaluation and decision-making as well as the preferred servicing strategy and associated capital program.

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 of Volume III. The technical appendices contain relevant project, implementation and technical analysis information, including:

- Appendix 3A – Water Demand Projections
- Appendix 3B – Historical Water Demand
- Appendix 3C – Water Evaluation Tables
- Appendix 3D – Unit Costs
- Appendix 3E – Preliminary Water Model Results

Volume IV – Wastewater Master Plan

Volume IV consists of the principal document summarizing the study objectives, approach, methodologies, technical analyses, and 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.

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 of Volume IV. The technical appendices contain relevant project, implementation and technical analysis information, including:

- Appendix 4A – Wastewater Flow Projections
- Appendix 4B – Historical Wastewater Flows
- Appendix 4C – Wastewater Evaluation Tables
- Appendix 4D – Unit Costs
- Appendix 4E – Preliminary Wastewater Model Results

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 in Volume V is the detailed evaluation and decision-making as well as the preferred servicing strategy and associated capital program.

Background information is included as appendices of Volume V. The technical appendices contain relevant project, implementation and technical analysis information, including:

- Appendix 5A – Introduction to Stormwater Management
- Appendix 5B – Stormwater Evaluation Tables
- Appendix 5C – Unit Costs

Volume VI – Public and Agency Consultation

Volume VI contains all relevant documentation of the public consultation process including notices, comments and responses, and distribution information. Presentation material from all Public Information Centres (PICs) held during the process is included. Other presentation material and discussion information from workshops held with relevant agencies, approval bodies and other stakeholders are also included.

1.4 Master Plan Report Volume I

This volume provides a summary of the complete Master Servicing Plan including the major planning and Water, Wastewater and Stormwater strategies and costs as well as the EA Process summary.

Volume I is organized into the following sections:

1. Introduction
2. Background and Planning Context
3. Strategy Development, Evaluation and Selection
4. Preferred Water Servicing Strategy
5. Preferred Wastewater Servicing Strategy
6. Preferred Stormwater Servicing Strategy
7. Post-2031 Vision

Volume I is one of six volumes that make up the complete Master Servicing Plan Class EA Study Report and should be read in conjunction with the other volumes.

2 Background and Planning Context

2.1 Problem and Opportunity Statement

The problem or opportunity statement defines the principal starting point in the undertaking of the Master Servicing Plan Class EA and assists in defining the scope of the project. The problem or opportunity statement for the 2014 Master Servicing Plan for Water, Wastewater, and Stormwater Services is defined as follows:

- By 2031, the population and employment in the City are expected to grow by approximately 28,000 people and 13,000 jobs, respectively. To assess the impact of this growth, a comprehensive Master Servicing Plan for the Water, Wastewater, and Stormwater Systems was initiated to identify servicing requirements for existing service areas and growth areas to 2031 and beyond.
- Identification of post-2031, long-term visioning for the water, wastewater, and stormwater systems to enable an efficient and logical extension of infrastructure when required.

2.2 Study Area

The City of Brantford is located in southwestern Ontario, 40 kilometres 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).

The City of Brantford is strategically connected to Cambridge to the north and the Town of 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[1] of 72.47 square kilometres with a population of 93,650[2] in 2011. The study area covers the water, wastewater and stormwater systems within the limits of the City.

[1] Statistics Canada. 2012. Brantford, Ontario (Code 3529006) and Brant, Ontario (Code 3529) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed May 8, 2014).

[2] Statistics Canada. 2012. Brantford, Ontario (Code 3529006) and Brant, Ontario (Code 3529) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed May 8, 2014).

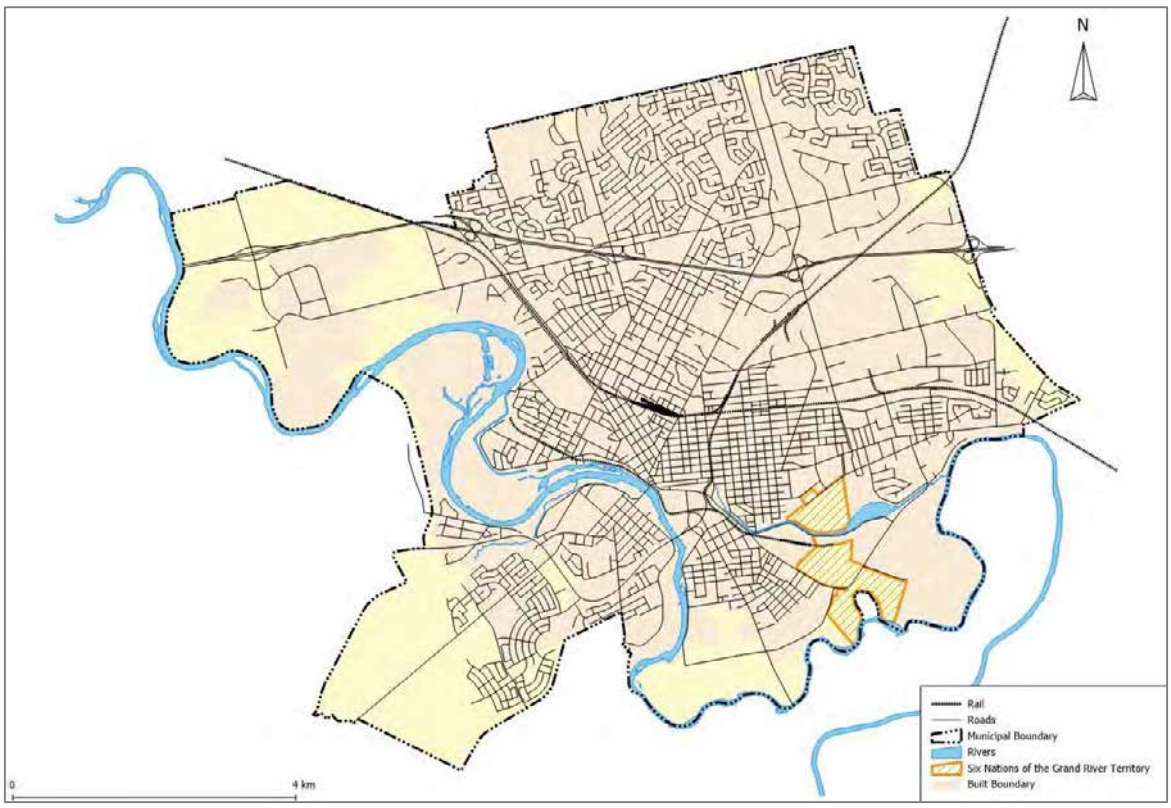

Figure 1.2 – Study Area for the 2014 Master Servicing Plan for Water, Wastewater and Stormwater Services

2.3 Planning Forecasts

Places to Grow is the official Provincial growth plan for the Greater Golden Horseshoe (GGH). It is a 25-year plan, released in 2006, that provides a framework for implementing the Government of Ontario's vision for building stronger, more prosperous communities by better managing growth in this region to 2031.

The Growth Plan has been amended twice since its release in 2006. The first amendment was released in January 2012 and contains new policies, schedules and definitions that apply in the Lake Simcoe Sub-area. The second amendment was released in June 2013 to update and extend the Growth Plan's vision, policies and population and employment forecasts to 2041 to help communities across the region better plan for growth and development in a sustainable way.

The original Places to Grow Growth Plan includes growth forecasts for the City of Brantford with a residential population of 126,000 and an employment force of 53,000 by 2031, as well as intensification policies and targets (e.g., 40 per cent of new development in urban areas). Development is to be directed to Urban Growth Centers, which includes Brantford City Centre for which Places to Grow sets a minimum density target of 150 persons and jobs per hectare.

Since the commencement of the 2014 Master Servicing Plan, the Province has released Amendment 2 (2013) which provides revised 2031 forecasts and new 2041 forecasts. Due to the timing of release of Amendment 2 and the preparation of the 2014 Master Servicing Plan, the 2014 Master Servicing Plan remains focused on the original forecasts as outlined below but with consideration given to the new post-2031 forecasts and 2041 horizon.

Table 1.1 – Population and Employment – Places to Grow and Places to Grow Amendment II

	Existing		Original Places to Grow Forecast		Places to Grow Amendment II Forecast			
	Pop	Emp	Pop	Emp	Pop	Emp	Pop	Emp
	2011	2011	2031A	2031A	2031B	2031B	2041	2041
City of Brantford	102,000	45,000	126,000	53,000	139,000	67,000	163,000	79,000

Notes: Data source is Places to Grow, Growth Plan for the Greater Golden Horseshoe 2006

2.4 Master Plan Forecasts

The City of Brantford Planning department has refined the population and employment forecasts set out in Places to Grow Growth Plan and allocated the projections based on Traffic Survey Zone distribution, factoring projected detailed planning information within Greenfield growth areas, intensification corridors and the Brantford Urban Growth Centre. The basis for the planning estimates was in conformance to the original Places to Grow forecasts identified in Table 1.1; however, refinements have resulted in the following forecasts shown in Table 1.2.

Table 1.2 – Population and Employment– Master Servicing Plan Estimates

	Master Servicing Plan Forecasts							
	Pop	Emp	Pop	Emp	Pop	Emp	Pop	Emp
	2011	2011	2021	2021	2031	2031	2041	2041
City of Brantford	94,000	47,000	98,000	49,000	121,000	60,000	164,000	82,000

These Planning estimates, distributed throughout the City of Brantford Traffic Survey Zones were the basis for water and wastewater demand and flow projections for the Master Servicing Plan. A full description of the planning projection development relating to Places to Grow, Places to Grow Amendment II and the Traffic Zone projections put forward by the City for the purposes of the Master Servicing Plan are provided in Volume II.

The Intensification and Greenfield growth areas as well as land uses for the City of Brantford are identified in Figure 1.3.

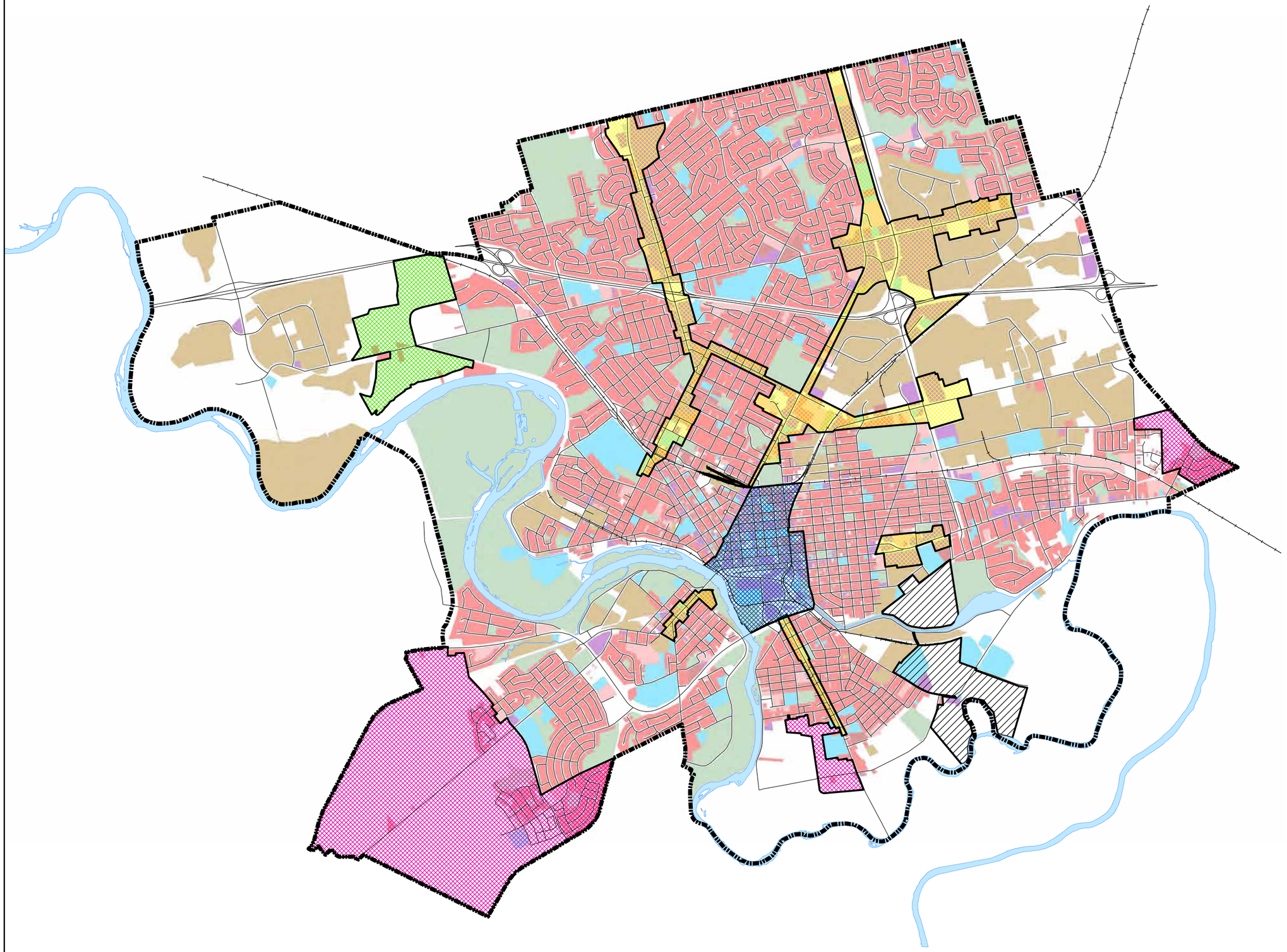

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Figure 1.3 - Growth Areas and Land Use

GROWTH AREAS
- Greenfield Area
- Intensification Area
- Under OMB Review
- Urban Growth Centre

LAND USE
- Commercial
- Industrial
- Institutional
- Open Space
- Residential High
- Residential Low
- Residential Medium
- Rail
- Roads
- Municipal Boundary
- Rivers
- Six Nations of the Grand River Territory

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3 Strategy Development, Evaluation and Selection

The 2014 Master Servicing Plan sets out to meet the Approach 2 requirements under the Municipal Engineers Association (MEA) Class EA process. Under Approach 2, a Master Plan document is prepared at the conclusion of Phases 1 and 2 of the Class EA process. This approach allows for all Schedule A, A+ and selected Schedule B projects identified in the Master Plan to move forward to implementation. To achieve this result, systematic evaluation and documentation is required to support selected Schedule B project Class EA requirements along with applicable review agency commitments prior to implementation. Select Schedule B projects and all identified Schedule C projects will require additional supporting information and decision making to proceed onto separate studies and continue to Phases 3 and 4 of the Class EA process.

The identification and evaluation of servicing options is a critical component of the master planning process because it enables a comprehensive review of a reasonable range of alternatives while documenting the process in a transparent manner. This section describes the general evaluation process undertaken for the Water, Wastewater and Stormwater Strategies.

The evaluation approach has been designed to ensure a logical and transparent process that can document the evaluation and decision making that will ultimately develop a defensible capital program. Sustainability principles were also considered in the development of the 2014 Master Servicing Plan and have been integrated within the five-point evaluation. Examples of such principles are:

- Making best use of existing infrastructure
- Minimizing the cost of new infrastructure;
- Considering operation and maintenance costs to ensure financial sustainability
- Ensuring the long-term reliability and security of the water, wastewater and stormwater systems.

The opportunities and constraints for each system were identified at the outset of the study and were used as the starting point for identifying Servicing Strategies.

The evaluation process progresses from high-level servicing concepts to more detailed servicing strategies and, where applicable, to detailed evaluation of individual alignments or sites. The progression from high-level to an increasing level of detail allows for a more efficient process, as it screens out non-feasible and unfavourable servicing concepts before they are carried forward for detailed evaluation.

The process for evaluating concepts and strategies was as follows:

- The preliminary Opportunities and Constraints are established throughout each of the infrastructure systems
- A list of servicing concepts to address existing and future issues was evaluated at a high level, with advantages and disadvantages considered for each in order to either carry forward or screen out the concept. The concepts included the “Do Nothing” and “Limit Growth” as required for the Class EA Process.
- Combinations of the concepts that were carried forward formed the servicing strategies. These strategies are intended to be compared at a more detailed level for evaluation.

- Each Strategy is subjected to a five-point evaluation, which includes environmental, technical, social/cultural, financial and legal/jurisdictional impacts

Each strategy is scored based on the positive and negative aspects identified for each category using a rating system of High, Medium or Low (3, 2 or 1 point(s)). The strategy with the highest overall score was selected as the preferred.

Four water and four wastewater Master Plan-level strategies were evaluated. These preferred strategies are described in the following sections. For the stormwater system a range of four to six Master Plan level strategies were evaluated for each of the City's sub-watershed/growth areas, with preferred strategies identified for each. A schematic flow diagram of the concept and strategy evaluation process is shown in Figure 1.4.

The stormwater management strategies presented in this Master Servicing Plan are intended to develop a framework providing overall guidance of the Citywide Stormwater Management Objectives and Criteria and area specific strategies to address the management of the City's stormwater infrastructure. These area specific management strategies are to be further refined, and technical details to be confirmed as part of follow-on Sub-Watershed Studies, which are further discussed in Volume V.

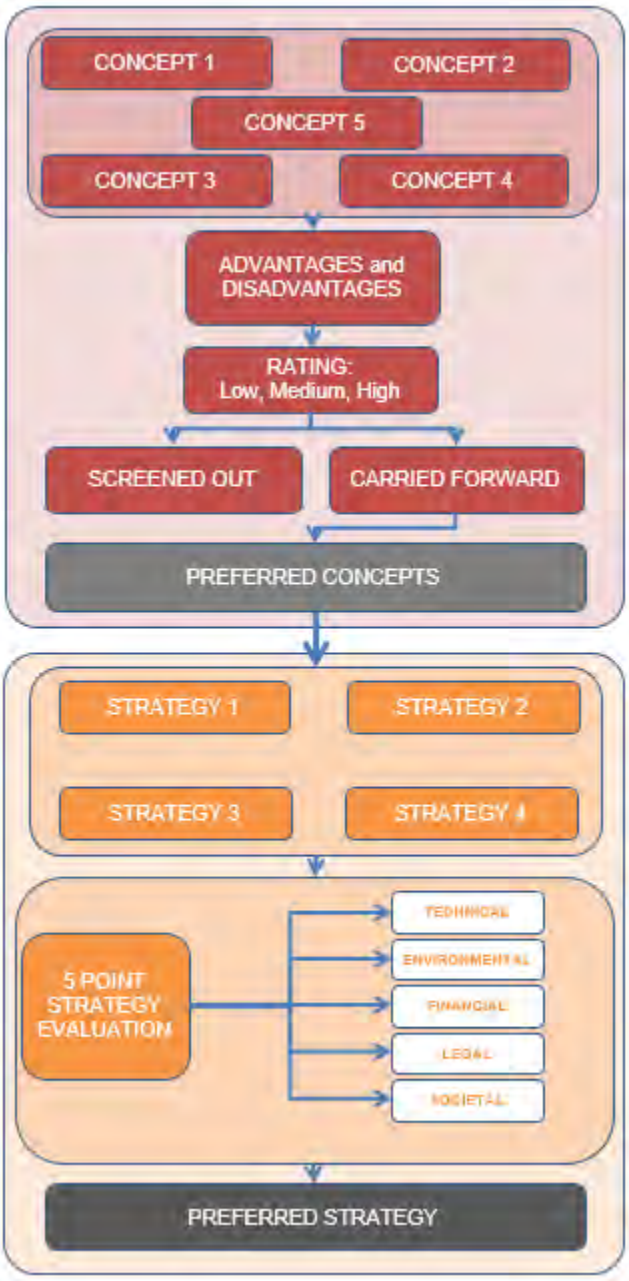

Figure 1.4 – Servicing Option Evaluation Flow Diagram

4 Preferred Water Servicing Strategy

4.1 Water Servicing Strategy Summary

Several separate water servicing components are recommended throughout the City of Brantford that collectively make up the overall Preferred Strategy. Strategy 1 was determined to be the Preferred Servicing Strategy from the 5-point evaluation to satisfy growth to 2031. This Strategy consists of expansion of the existing network into Greenfield growth areas as well as optimization of pumping feeds into the upper zones as well as the addition of new elevated storage.

Greenfield growth within the 2031 horizon extends along Shellard Lane west of McGuiness Drive. The Preferred Water Servicing Strategy within this area requires extension of the trunk watermain along Shellard Lane. In addition, a local network of local watermains along the future road alignments will be required to support growth in the area.

Greenfield growth will also extend north of Hwy 403 on either side of Oak Park Road. Extension of the water network into this area, crossing Hwy 403 will service the new growth. Local loop of watermains within the growth area is also recommended.

The main components that make up the Preferred Servicing Strategy are as follows:

- New 5.0 ML Zone 1 Elevated Tank (TWL: 271 m)
- New Zone 4 watermains to service Northwest Brantford
- New Zone 1 watermains to service Southwest Brantford
- Twinning of Zone 2/3 Watermain on King George Rd
- Intensification Upgrades (as required under further detailed study)
- Holmedale WTP Raw Water Canal Storage Capacity Upgrade

Key benefits of the preferred Water Servicing Strategy include:

- Provision of floating storage within Pressure Zone 1, that will improve pressures to existing users in the Strawberry Hill area and provide additional storage to service future growth
- Maximizing use of existing feeds to Pressure Zone 2/3
- Extension of existing servicing to future growth areas, in the northwest and southwest parts of the City
- Reinforcing feed on King George Street., which will support future intensification along the corridor
- Setting the stage for future servicing of growth post-2031

4.2 Water Capital Program

As described in the previous section and depicted in Figure 1.5, the Preferred Water Servicing Strategy has been developed to satisfy the existing and growth areas within Brantford to 2031. The capital costs for each project within the Preferred Strategy were developed according to the costing methodology outlined in Volume III. These projects are listed according to their project number and are shown, along with costs and preliminary implementation scheduling in Table 1.3.

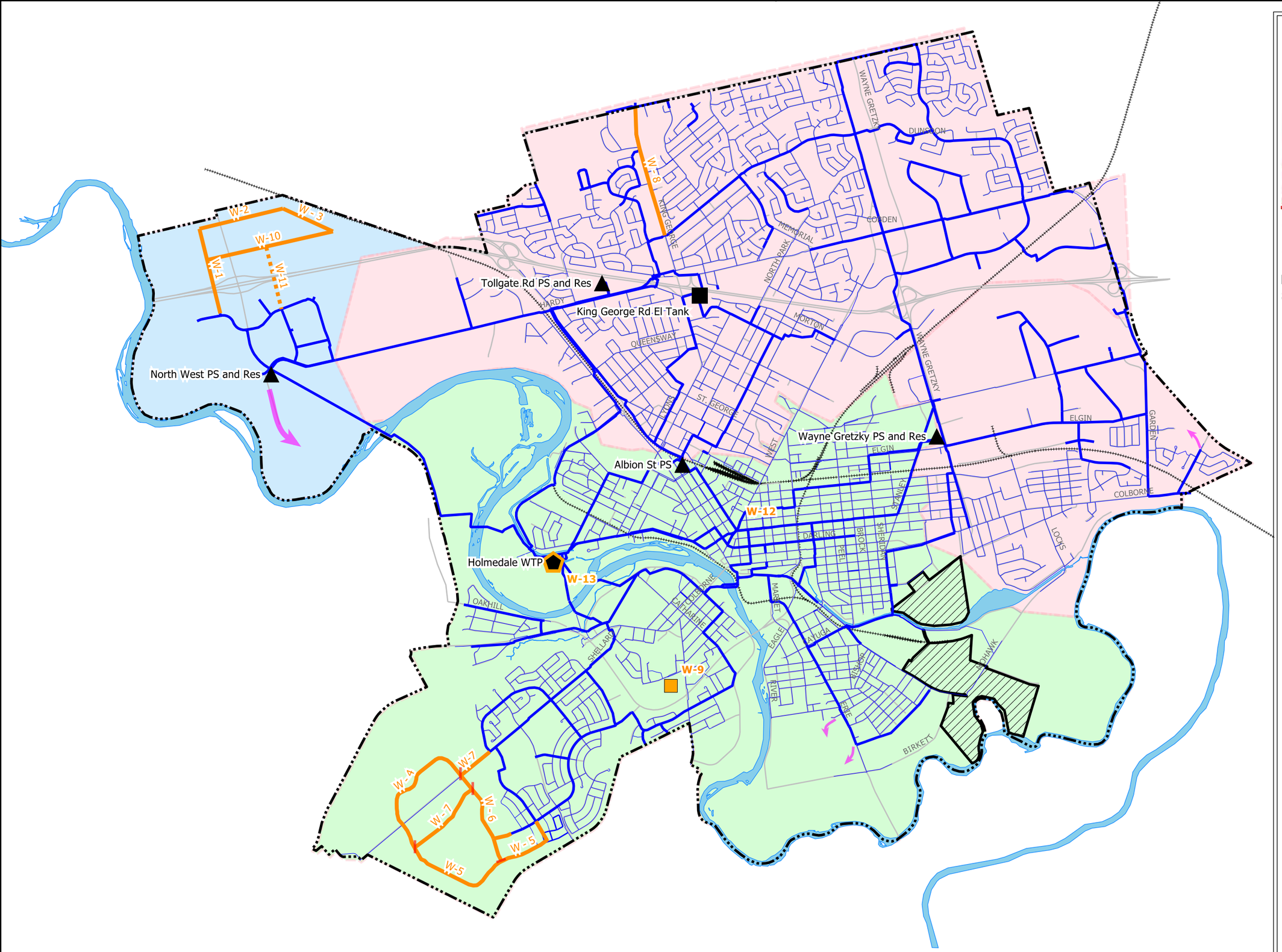

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Figure 1.5 - Preferred Water Servicing Strategy

Proposed System
- Storage
- Watermain
- Potential Crossing
- Expansion of Local System

- Pressure Zone 1
- Pressure Zone 2/3
- Pressure Zone 4

Existing Water Infrastructure
- Elevated Tank
- PS & Reservoir
- Water Treatment Plant
- > 250 mm
- <= 250 mm

- Roads
- Water Bodies
- Municipal Boundary
- Six Nations of the Grand River Territory

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Table 1.3 Water Capital and Implementation Table

Project Number	Project Name	Project Description	Year In Service	Class EA Schedule	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
1	North West Brantford Watermain 1	New 400 mm watermain from existing 750 mm watermain stub on Fen Ridge Ct north aproximately 1,100 m on easement, Hwy 403 crossing and future road alignment (shared easement with wastewater project WW-9)	2021-2026	A+	WDM	$3,170,000	$0	$0	$3,170,000
2	North West Brantford Watermain 2	New 300 mm watermain along future east west road connecting to future watermain projects W-1 and W-3 on new road alignments	2026-2031	A+	WDM	$1,586,000	$0	$1,427,000	$159,000
3	North West Brantford Watermain 3	New 300 mm watermain along new road alignment connecting to future 300 mm watermain projects W-2 and W-10 on new road alignments	2026-2031	A+	WDM	$1,033,000	$0	$930,000	$103,000
4	West of Conklin Watermain 4	New 300 mm watermain along future road north of Shellard Lane conecting to new 400 mm watermain W-7 to the east and W-7 to the west south of Shellard Lane	2021-2026	A+	WDM	$3,128,000	$0	$2,815,000	$313,000
5	West of Conklin Watermain 5	New 300 mm watermain along future road south of Shellard Lane from the new 400 mm watermain W-7 to existing 300 mm watermain on Powell Rd	2016-2021	A+	WDM	$3,789,000	$0	$3,410,000	$379,000
6	West of Conklin Watermain 6	New 300 mm watermain along future road south of Shellard Lane connecting to new 400 mm watermain W-7, 300 mm watermain W-5 and connecting to existing 300 mm watermain on Blackburn Dr.	2016-2021	A+	WDM	$2,054,000	$0	$1,849,000	$205,000
7	West of Conklin Watermain 7	New 400 mm watermain west along Shellard Lane from existing 400 mm watermain, south on future road connecting to new 300 mm watermain W-6, west on future road connecting to new 300 mm watermain W-5.	2014-2016	A+	WDM	$3,310,000	$0	$0	$3,310,000
8	King George Rd Watermain	New 300 mm watermain along King George Rd from Dunsdon St to Powerline Rd.	2026-2031	A+	WDM	$3,530,000	$0	$0	$3,530,000
9	Elevated Storage Tank	Elevated Storage Tank in PD1 located in the vicinity of the John Noble Home site	2016-2021	B (Separate)	WS	$7,319,000	$4,391,000	$0	$2,928,000
10	North West Brantford Watermain 10	New 300 mm watermain along new road alignments from future 400 mm watermain W-1 to future 300 mm watermain W-3 on new road alignments	2021-2026	A+	WDM	$2,865,000	$0	$0	$2,865,000
11	North West Brantford Watermain 11	New 300 mm watermain from existing 400 mm watermain on Savannah Oak Dr. north on future easement including Hwy 403 crossing and connecting to new 300 mm watermain W-10	2026-2031	A+	WDM	$2,405,000	$0	$0	$2,405,000
12	General Intensification Upgrades	Lump Sum cost for pipe upgrades within intensification areas (Approx 2,000 m of 300mm at urban construction costs)	2014-2031	A+	WDM	$5,598,000	$2,799,000	$0	$2,799,000
13	Holmedale WTP Raw Water Canal Upgrades	Upgrades to existing Holmedale Canal to expand its capacity from 16 ML to 74 ML providing security of supply and emergency	2016-2021	A+	WDM	$5,598,000	$2,992,000	$0	$2,606,000
						$45,385,000	**$10,182,000**	**$10,431,000**	**$24,772,000**

5 Preferred Wastewater Servicing Strategy

5.1 Wastewater Servicing Strategy Summary

Several separate wastewater servicing components are recommended throughout the City of Brantford that collectively make up the overall Preferred Strategy. Strategy 4 was evaluated as the preferred Servicing Strategy from the 5-point evaluation to satisfy growth to 2031. This strategy consists of extension of the existing network into Greenfield growth areas as well as diversion of flow to the Empey SPS and capacity upgrades to the Empey SPS.

Greenfield growth within 2031 extends along Shellard Lane west of McGuiness Drive. The preferred wastewater servicing strategy within this area requires extension of a trunk sewer along Shellard Lane. In addition, a local network of gravity sewers along future road alignments will be required to drain the future growth flows to the trunk sewer.

Greenfield growth also extends north of Hwy 403 on either side of Oak Park Road. Extension of gravity servicing, crossing Hwy 403 west of Oak Park Road, will service the new growth and connect the growth area to the existing sanitary network. The servicing options for northwest Brantford was subject to a detailed evaluation, outlined in Volume IV.

Other main components that make up the preferred servicing strategy are as follows:

- Upgrades to the Empey SPS
- Upgrade to trunk sewer upstream of Greenwich SPS
- Intensification upgrades (as required under further detailed study)
- Oak Hill Sewer upgrade
- Oak Park Road Extension Residential SPS and Forcemain

As part of the Preferred Strategy, several benefits of diverting flow to the Empey SPS and upgrading the pumping capacity are:

- Diversion allows optimization of the flow split and maximizing capacity within both downstream sewer sections
- Avoids twinning downstream section of sewer within the built-up area
- Adds pumping capacity at the Empey SPS which can support post 2031 flows.

Further to the identified capital projects, it is recommended that the City of Brantford incorporate Inflow and Infiltration reduction strategies as part of the City's ongoing infrastructure maintenance and renewal program.

5.2 Wastewater Capital Program

As described in the previous section and depicted in Figure 1.6, the Preferred Wastewater Servicing Strategy has been developed to satisfy the existing and growth areas within Brantford to 2031. The capital costs for each project within the Preferred Strategy were developed according to the costing methodology outline in Volume IV. These projects are listed according to their project number and are shown, along with costs and preliminary implementation scheduling in Table 1.4.

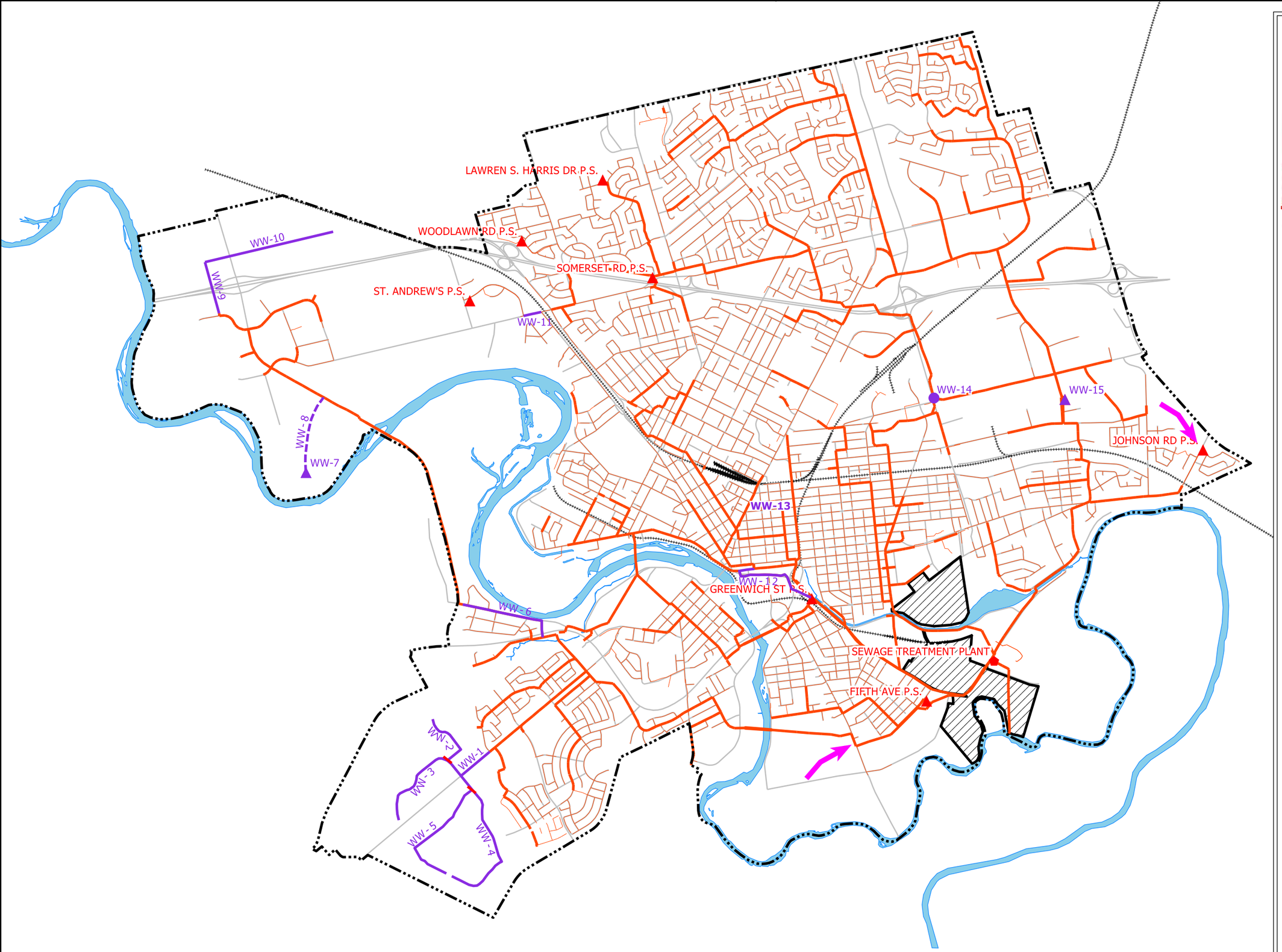

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Figure 1.6 - Preferred Wastewater Servicing Strategy

Proposed System
- Pumping Stations
- Sanitary Project
- Sewermains
- Forcemains
- Expansion of Local System

Existing Sanitary Infrastructure
- Pumping Stations
- Sewage Treatment Plant
- > 250 mm
- <= 250 mm

- Roads
- Water Bodies
- Municipal Boundary
- Six Nations of the Grand River Territory

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Table 1.4 Wastewater Capital and Implementation Table

Project Number	Project Name	Project Description	Year in Service	Class EA Schedule	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
1	West Conklin Trunk Sewer	New 675 mm sewer on Shellard Ln from McGuiness Dr west approximately 434 m	2014-2016	A+	SAN	$953,000	$0	$0	$953,000
2	West Conklin Sub-Trunk Sewer 2	New 375 mm sub trunk sewer within new development on future road alignment, north of Shellard Ln connecting to future 450 mm sewer WW-3	2021-2026	A+	SAN	$686,000	$0	$620,000	$66,000
3	West Conklin Sub-Trunk Sewer 3	New 450 mm sub trunk sewer within new development, north of Shellard Ln connecting to future 675 mm sewer WW-1	2021-2026	A+	SAN	$1,755,000	$0	$1,307,000	$448,000
4	West Conklin Sub Trunk Sewer 4	New 450 mm sub trunk sewer within new development, south of Shellard Ln connecting to future 675 mm sewer WW-1	2014-2016	A+	SAN	$2,111,000	$0	$1,702,000	$409,000
5	West Conklin Sub Trunk Sewer 5	New 450 mm sub trunk sewer within new development, southwest of Shellard Ln connecting to future 675 mm sewer WW-1	2016-2021	A+	SAN	$1,490,000	$0	$1,266,000	$224,000
6	Oakhill Dr Sewer Upgrade	Replacement of existing 675 mm/ 750 mm with 1050 mm sewer along Oakhill Dr from Jennings Rd to Colborne St W	2016-2021	A+	SAN	$4,236,000	$1,412,000	$0	$2,824,000
7	Grand River Residential Sewage Pumping Station	New Sewage Pumping Station approximately 1,300 m south of Oak Park Rd/Hardy Rd servicing new residential growth	2016-2021	B	SPS	$3,000,000	$0	$3,000,000	$0
8	Grand River Twinned Residential Forcemains	New twin forcemains on Oak Park Rd extention from new Grand River Residential SPS to sewer south of Hardy Rd	2016-2021	B	FM	$1,079,000	$0	$1,079,000	$0
9	Northwest Extension Trunk Sewer	New 825 mm sewer from existing 825 mm sewer stub on Fen Ridge Ct. north approximately 613 m on easement, Hwy 403 crossing and future road alignment (shared easement with water project W-1	2021-2026	A+	SAN	$6,125,000	$0	$0	$6,125,000
10	Northwest Extension Sub Trunk Sewer 1	New 525 mm sub trunk sewer on future road alignment within new industrial development from future 825 mm sewer east approximately 1,522 m	2021-2026	A+	SAN	$2,230,000	$0	$0	$2,230,000
11	Hardy Rd Sewer Upgrade	New 375 mm sewer upgrade along Hardy Rd from St Andrews Dr to Railway	2014-2016	A+	SAN	$304,000	$304,000	$0	$0
12	Greenwich Sewer Upgrade	New 450 mm sewer on Greenwich Dr and Icomm Dr from the Greenwich SPS to west of Clarence St S. Replacement of 300 mm sewer with 450 mm sewer	2014-2016	A+	SAN	$2,432,000	$1,216,000	$0	$1,216,000
13	General Intensification Upgrades	Lump Sum cost for pipe upgrades within intensification areas (Approx 2,700 m of 450 mm sewer at urban construction cost)	2014-2031	A+	SAN	$5,500,000	$2,750,000	$0	$2,750,000
14	Empey Diversion Structure	Diversion control structure at intersection of Henry St and Wayne Gretzky Pkwy to balance flows between Empey St SPS and Stanley St Trunk Sewer	2016-2021	A	Other	$209,000	$105,000	$0	$104,000
15	Empey SPS Pumps Upgrade	Upgrade Empey SPS pumping capacity through upgrade of pumps within existing building 2 new 378 L/s pumps	2016-2021	A+	SAN	$2,316,000	$1,158,000	$0	$1,158,000
						$34,426,000	**$6,945,000**	**$8,974,000**	**$18,507,000**

6 Preferred Stormwater Servicing Strategy

6.1 Stormwater Servicing Strategy Summary

Several separate stormwater servicing components are recommended for the City of Brantford that collectively make up the overall Preferred Strategy. The highest rated scores from the strategy evaluation for each sub-watershed were brought forward and combined to collectively make up the overall preferred stormwater management strategy for the City of Brantford.

The primary servicing needs for each sub-watershed differ but general consist of:

- Managing infill growth through on site controls
- Managing greenfield growth through conveyance and end of pipe control
- Improvements to the major flow system throughout the older areas of the City to enhance overall flood protection to public and property
- Implement localized upgrades to the minor conveyance system at high risk and key locations
- Implement policies and encourage the use of LID measures to general improve runoff water quality and reduce total peak flows to the existing stormwater system.

It is recognized that the preferred servicing strategies have the opportunity for further enhancement and optimization as further details regarding the development areas present themselves. As discussed further in Volume V, it is recommended that the preferred strategies be further reviewed under independent sub-watershed studies.

The key strategies and benefits for each sub-watershed/area are outlined in Volume V.

6.2 Stormwater Capital Program

As described in the previous section and depicted in Figure 1.7, the Preferred Stormwater Servicing Strategy has been developed to satisfy the existing and growth areas within Brantford to 2031. The capital costs for each project within the Preferred Strategy were developed according to the costing methodology outline in Volume V. These projects are listed according to their project number and are shown, along with costs and preliminary implementation scheduling Table 1.5.

Intensification / Downtown area
Onsite Control: 10 yr post / pre peak flow control.

Storage provided for 2x 100 year flow volume.

ICI Greenfield development: onsite control: 10 yr post / pre peak flow control.

Sewer sized to meet 10 yr LOS.

Ponds to meet 100 year peak flow + provide erosion control from intensification flows (Fairchild Creek Catchments).

Residential greenfield development:

Sewers sized to meet 5 yr LOS.

Storage provided for 100 yr peak flow control.

Emergency overflow to Grand River to manage regional storm flows (flows exeding 100 year).

Water quality control pond.

Surface flow management upgrades.

Surface flow management upgrades with localized sewer / storage / LID upgrades in high risk areas.

Residential greenfield development:

Sewers sized to meet 5 yr LOS.

Storage provided for 100 yr peak flow control.

Residential greenfield development:

Sewers sized to meet 5 yr LOS.

Storage provided for 100 yr peak flow control.

Upgrade exiting sewer system to meet 2 yr LOS with localized surface flow management upgrades.

5 Yr

5 Yr

2 Yr

5 Yr

N

THE CORPORATION OF THE CITY OF BRANTFORD

City of Brantford
2014 Master Servicing Plan (MSP)
for Water, Sanitary and Stormwater Services

Figure 1.7 - Preferred Stormwater Servicing Strategy

Existging Upgrades
- to meet LOS

Greenfield Growth
- Proposed Pond
- Proposed Trunks

Intensification Areas
- Pond to Meet Intensification Growth
- Greenfield area
- Intensification Area
- Urban Growth Centre
- Special Management Areas

Existing Storm Infrastructure
- Storm Sewer
- Rail
- Detention Ponds
- Creeks
- Rivers
- Municipal Boundary
- Six Nations of the Grand River Territtory

BluePlan

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Table 1.5 Stormwater Capital and Implementation Table

Project Number	Project Name	Project Description	Year In Service	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
1a	Sub-Watershed Master Plan (7)	In-depth area specific stormwater studies to refine area specific stormwater management strategies and targets. To be developed in consultation with impacted stakeholders and will act as the governing document outlining the specific management strategies to be utilized to manage storm water within each individual Sub-Watershed	2014-2016	STUDY	$1,400,000	$0	$0	$1,400,000
1b	Mohawk Lake Master Management Plan	Management Master Plan Study to review Mohawk Lake's existing hydraulic performance and water quality condition, and to identify potential capacity and water quality upgrades.	2014-2016	STUDY	$150,000	$0	$0	$150,000
1c	Overland Flow Master Management Plan	Management Master Plan Study to review Overland Flow Management within the City. Includes identification of existing flow path, areas at risk, and required upgrades to adequately manage system Risk	2014-2016	STUDY	$400,000	$0	$0	$400,000
1d	Flow Monitoring Program and Stormwater Model Update/Calibration	Flow Monitoring Program and Stormwater Model Update/Calibration to support Sub-Watershed Studies	2014-2016	STUDY	$250,000	$0	$0	$250,000
1e	Floodplain Stormwater Management	Management Master Plan Study to review of storm flooding and storage requirements under high Grand River Levels	2014-2016	STUDY	$200,000	$0	$0	$200,000
2	Mohawk Lake Water Quality Enhancements	Mohawk Lake Upgrades. For water quality and enhancement of community amenity	2016-2021	WQ	$5,000,000	$3,800,000	$0	$1,200,000
3	Water Quality Area Improvements	General stormwater quality improvement facilities to be retrofitted along with pre-planed infrastructure projects.	2014-2031	WQ	$10,000,000	$10,000,000	$0	$0
4a	Grand River South West	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$4,797,000	$3,645,720	$0	$1,151,280
4b	Grand River South West	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$681,000	$517,560	$0	$163,440
4c	Grand River South West	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$451,000	$0	$451,000	$0
5a	Holmedale & Dufferin	Target upgrades to the trunk storm sewer		SEWER	$0	$0	$0	$0
5	Holmedale & Dufferin	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$1,620,000	$1,620,000	$0	$0
6a	Eagle View & Woodland & Belleview	Target upgrades to the trunk storm sewer		SEWER	$0	$0	$0	$0
6a	Eagle View & Woodland & Belleview	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$1,080,000	$820,800	$0	$259,200
6b	Eagle View & Woodland & Belleview	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$639,000	$0	$639,000	$0
8a	Wayne Gretzky Pkwy S of Hwy 403	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$2,743,000	$2,084,680	$0	$658,320

Project Number	Project Name	Project Description	Year In Service	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
8b	Wayne Gretzky Pkwy S of Hwy 403	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$1,310,000	$0	$1,310,000	$0
9a	North East Area	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$26,829,000	$20,390,040	$0	$6,438,960
9b	North East Area	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$6,020,000	$0	$6,020,000	$0
10a	Tranquility Area	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$2,170,000	$1,649,200	$0	$520,800
10b	Tranquility Area	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$379,000	$0	$379,000	$0
11a	King George North	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$390,000	$296,400	$0	$93,600
11b	King George North	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$1,420,000	$0	$1,420,000	$0
12	St. Pauls Ave and Devon Down Park Area	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$0	$0	$0	$0
12a	St. Pauls Ave and Devon Down Park Area	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$1,020,000	$775,200	$0	$244,800
12b	St. Pauls Ave and Devon Down Park Area	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$580,000	$0	$580,000	$0
13a	Brant and St. Pauls Area	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$928,000	$705,280	$0	$222,720
13b	Brant and St. Pauls Area	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$3,240,000	$2,462,400	$0	$777,600
13c	Brant and St. Pauls Area	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$1,440,000	$0	$1,440,000	$0
14a	Upper Downtown Area (Mohawk Lake)	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$1,782,000	$1,354,320	$0	$427,680
14b	Upper Downtown Area (Mohawk Lake)	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$8,099,000	$6,155,240	$0	$1,943,760
14c	Upper Downtown Area (Mohawk Lake)	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$12,059,000	$0	$12,059,000	$0
15a	Lower Downtown Area (Grand River)	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$499,000	$379,240	$0	$119,760
15b	Lower Downtown Area (Grand River)	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$2,700,000	$2,052,000	$0	$648,000

Project Number	Project Name	Project Description	Year In Service	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
15c	Lower Downtown Area (Grand River)	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$2,771,000	$0	$2,771,000	$0
16a	Stanley St. and Rawdon St. Area	Target upgrades to the trunk storm sewer	2016-2031	SEWER	$2,564,000	$1,948,640	$0	$615,360
16b	Stanley St. and Rawdon St. Area	Target upgrades to the overland flow system	2016-2031	Surface/Drainage	$6,082,000	$4,622,320	$0	$1,459,680
16c	Stanley St. and Rawdon St. Area	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2031	LID	$2,078,000	$0	$2,078,000	$0
17	Summerhayes Crescent Detention Pond	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$812,000	$0	$0	$812,000
18	Jaycee Sports Park Detention Pond	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$720,000	$0	$0	$720,000
19	Roy Blvd Detention Pond	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$3,554,000	$0	$0	$3,554,000
20	Abbott Ct Detention Pond A	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$627,000	$0	$0	$627,000
21	Abbott Ct Detention Pond B	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$666,000	$0	$0	$666,000
22	Tranquility Detention Pond	Stormwater Management Pond to manage growth related flows	2016-2031	POND	$367,000	$0	$0	$367,000
23	Northwest Detention Pond A	Stormwater Management Pond to manage growth related flows	2021-2026	POND	$1,805,000	$0	$1,805,000	$0
23b	Northwest Detention Pond A	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2021-2026	LID	$17,500,000	$0	$17,500,000	$0
24	Northwest Detention Pond B	Stormwater Management Pond to manage growth related flows	2021-2026	POND	$2,331,000	$0	$2,331,000	$0
24b	Northwest Detention Pond B	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2021-2026	LID	$22,600,000	$0	$22,600,000	$0
25	Northwest Detention Pond C	Stormwater Management Pond to manage growth related flows	2021-2026	POND	$2,180,000	$0	$2,180,000	$0
25b	Northwest Detention Pond C	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2021-2026	LID	$21,150,000	$0	$21,150,000	$0
26	Northwest Detention Pond D	Stormwater Management Pond to manage growth related flows	2016-2021	POND	$2,397,000	$0	$2,397,000	$0
26b	Northwest Detention Pond D	Onsite controls to manage re-development and intensification stormwater runoff (post to per peak flow match)	2016-2021	LID	$11,371,000	$0	$11,371,000	$0

Project Number	Project Name	Project Description	Year In Service	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
27	Eagle View Detention Pond A	Stormwater Management Pond to manage growth related flows	2016-2021	POND	$300,000	$0	$300,000	$0
28	Eagle View Detention Pond B	Stormwater Management Pond to manage growth related flows	2016-2021	POND	$300,000	$0	$300,000	$0
29	South East Detention Pond	Stormwater Management Pond to manage growth related flows	2014-2016	POND	$229,000	$0	$229,000	$0
30	West of Conklin Detention Pond A	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$162,000	$0	$162,000	$0
31	West of Conklin Detention Pond B	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$1,037,000	$0	$1,037,000	$0
32	West of Conklin Detention Pond C	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$1,126,000	$0	$1,126,000	$0
33	West of Conklin Detention Pond D	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$322,000	$0	$322,000	$0
34	West of Conklin Detention Pond E	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$368,000	$0	$368,000	$0
35	West of Conklin Detention Pond F	Stormwater Management Pond to manage growth related flows	2021-2031	POND	$414,000	$0	$414,000	$0
36	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$684,000	$0	$684,000	$0
37	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$228,000	$0	$228,000	$0
38	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$729,000	$0	$729,000	$0
39	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$375,000	$0	$375,000	$0
40	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$980,000	$0	$980,000	$0
41	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$1,847,000	$0	$1,847,000	$0
42	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$1,357,000	$0	$1,357,000	$0
43	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$1,207,000	$0	$1,207,000	$0
44	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$6,002,000	$0	$6,002,000	$0

Project Number	Project Name	Project Description	Year In Service	Project Type	Total Project Cost (2014$)	Benefit to Existing (2014$)	Direct Developer Cost (2014$)	Net Growth Related (2014$)
45	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$2,111,000	$0	$2,111,000	$0
46	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$2,413,000	$0	$2,413,000	$0
47	West of Conklin Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2031	SEWER	$399,000	$0	$399,000	$0
48	Eagle View Trunk	Trunk Storm Sewer to manage growth related flows	2016-2021	SEWER	$1,536,000	$0	$1,536,000	$0
49	Southeast Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2014-2016	SEWER	$1,847,000	$0	$1,847,000	$0
50	Southeast Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2014-2016	SEWER	$224,000	$0	$224,000	$0
51	Northwest Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2026	SEWER	$4,620,000	$0	$4,620,000	$0
52	Northwest Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2021-2026	SEWER	$2,376,000	$0	$2,376,000	$0
53	Northwest Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2016-2021	SEWER	$380,000	$0	$380,000	$0
54	Northwest Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2016-2021	SEWER	$1,420,000	$0	$1,420,000	$0
55	Northwest Trunk Sewer	Trunk Storm Sewer to manage growth related flows	2016-2021	SEWER	$677,000	$0	$677,000	$0
56	Northwest Trunk Sewer	Major Overflow Sewer/Pathway	2016-2021	SEWER	$14,441,000	$0	$14,441,000	$0
		City Wide Projects			**$17,400,000**	**$13,800,000**	**$0**	**$3,600,000**
		Intensification Areas			**$103,117,000**	**$51,479,040**	**$29,147,000**	**$22,490,960**
		Greenfield Growth			**$131,445,000**	**$0**	**$131,445,000**	**$0**
		Total			**$251,962,000**	**$65,279,040**	**$160,592,000**	**$26,090,960**

7 Post-2031 Vision

The 2014 Master Servicing Plan has put forward a comprehensive water, wastewater, and stormwater servicing strategy to service growth within the City of Brantford to the approved Places to Grow 2031 forecast. While the approved urban boundary and growth targets are to 2031, the Master Servicing Plan also considered implications of potential post-2031 growth on the system. Post-2031 growth is anticipated to occur within both intensification and greenfield areas.

In developing the Preferred Wastewater Servicing Strategy and recommending specific capital projects, this Master Servicing Plan has considered the long-term greenfield growth that could occur and ensured that flexibility is built into the program.

7.1 Water and Wastewater Servicing Strategies

The Preferred Water and Wastewater Servicing Strategies addresses the growth needs to 2031, and also establishes flexibility within the system to implement a post-2031 strategy, once the long-term targets are confirmed and approved.

The majority of the water and wastewater infrastructure extensions have occurred towards the north and west, following the residential and employment growth within the City of Brantford. Throughout this growth, the City of Brantford has incorporated some minor strategic oversizing of trunk infrastructure to support development beyond existing growth horizons. Though 2031 is the planning horizon for this Master Servicing Plan, there is an expectation that there could be post-2031 growth extending further into Greenfield areas outside of the current urban boundary.

7.2 Stormwater Servicing Strategy

As with the Preferred Water and Wastewater Servicing Strategies, the Preferred Stormwater Strategy addresses the growth needs to 2031. Though 2031 is the planning horizon for this Master Servicing Plan, there is an expectation that there could be post-2031 growth extending further into Greenfield areas outside of the current urban boundary. It is anticipated that these areas will require separate on-site controls and thus are not expected to impact the identified projects.

Furthermore, additional intensification within the existing boundaries will need to be addressed through on-site controls to manage any changes to peak runoff rates.