

Wastewater

Integrated Master Plan – Volume 4

4

Integrated Master Plan Report Outline

The Integrated Master Plan (IMP) for Water, Wastewater, and Transportation is a comprehensive document that describes the planning, evaluation, and decision-making process to develop long-term infrastructure strategies for water, wastewater, and transportation in Halton Region.

The IMP is organized into six volumes:



Volume 1 – Executive Summary

Provides a brief overview of the IMP including the problem and opportunity statement, study purpose, key planning policy and technical considerations, and descriptions of the recommended infrastructure strategies for water, wastewater, and transportation.



Volume 2 – Planning Overview and Foundations

Outlines the integrated planning framework and methodology used for the IMP. This volume summarizes the study vision, objectives, Municipal Class EA process, key planning policies, growth forecasts, and existing conditions. It provides the foundation for the subsequent volumes.



Volume 3 – Water

Provides documentation for the Region’s water system. This volume outlines study objectives, baseline data/performance, methodologies, technical analyses, and evaluation that informed the recommended water servicing strategy and its components.



Volume 4 – Wastewater

Provides documentation for the Region’s wastewater system. This volume outlines study objectives, baseline data/performance, methodologies, technical analyses, and evaluation that informed the recommended wastewater servicing strategy and its components.



Volume 5 – Transportation

Provides documentation for the Region’s transportation infrastructure system. This volume outlines study objectives, baseline data/performance, methodologies, and technical analyses informed the recommended transportation strategy and its components that support all road users including transit, active transportation and auto.



Volume 6 – Consultation and Engagement

Provides documentation of the consultation and engagement process, including notices, presentation materials from Public Information Centres (PICs), and records from workshops with agencies, local municipalities, and other interested parties.

This report is the complete **Volume 4 – Wastewater Master Plan** which is one of six volumes that together form the complete Integrated Master Plan Report and should be read in conjunction with the other volumes.

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Acronyms and Abbreviations

ASP	Area Screening Plan
BEAST	Burlington East Sanitary Trunk Sewer
DC	Development Charges
EA	Environmental Assessment
FSR	Functional Servicing Report
IDF	Intensity-Duration-Frequency Curve
IGMS	Integrated Growth Management Strategy
I/I	Inflow and Infiltration
IMP	Integrated Master Plan
JBPE	Joint Best Planning Estimates
LOS	Levels of Service
MCEA	Municipal Class Environmental Assessment
MEA	Municipal Engineers Association
ML/d	Megaliters per day
MOU	Memoranda of Understanding
MTSA	Major Transit Station Area
OP	Official Plan
PPS	Provincial Planning Statement
PWWF	Peak Wet Weather Flow
Region	Regional Municipality of Halton
ROPA	Regional Official Plan Amendment
ROW	Right-of-Way
SOGR	State of Good Repair
WWPS	Wastewater Pumping Stations
WWTP	Wastewater Treatment Plant

1.0 Introduction

- 1.1 Master Plan Objectives
 - 1.2 Components of the Integrated Master Plan
 - 1.3 Vision Statement and Considerations
 - 1.4 Problem Opportunity Statement
 - 1.5 Study Area
 - 1.6 Population and Employment Planning Forecasts
-

1.0 Introduction

Halton Region has undertaken an Integrated Master Plan (IMP) to develop the next region-wide Water, Wastewater, and Multi-Modal Transportation Master Plans. The outcome of this work is a long-term integrated servicing strategy for Regional infrastructure to accommodate future growth to 2051. This IMP provides the strategies and tools required to meet future water, wastewater, and transportation infrastructure needs beyond 2031.

The IMP ensures that water and wastewater infrastructure and services are effectively planned and implemented to maintain appropriate levels of service for residents and businesses as the Region continues to grow. In parallel, the development of a robust multi-modal transportation network supports Halton Region's long-term vision by accommodating increasing travel demand and enhancing connectivity. Together, these infrastructure strategies have been developed to align with Local growth priorities and remain flexible to adapt to evolving needs through Halton's Enhanced Growth Monitoring process.

The purpose of Volume 4 is to document the Region's wastewater system and outline study objectives, baseline data/performance, methodologies, technical analyses, and evaluation that informed the recommended wastewater servicing strategy and its components.

1.1 Master Plan Objectives

The key objectives of the IMP are to:

- guide the management and development of the Region's water, wastewater and transportation (including the active transportation network) systems;
- maximize capacity, system flexibility and life expectancy of Regional water, wastewater and transportation infrastructure;
- identify the need, timing and cost of servicing and infrastructure; and,
- provide the strategies and tools required to meet the water, wastewater and transportation infrastructure needs of the community now and in the future.

1.2 Components of the Integrated Master Plan

The IMP is comprised of three (3) key components:

- **Water:** focuses on the delivery of safe, clean drinking water to homes and businesses within the urban areas.
- **Wastewater:** addresses the collection and treatment of wastewater from the urban areas before returning the treated water to the environment.
- **Transportation:** focuses on a Regional transportation network for transit users, active transportation (e.g., pedestrians and cyclists), and cars and trucks (including farm vehicles) that accommodates all users and all abilities.

Recognizing that the needs of the communities are changing, the IMP brings together these systems in a coordinated way that allows the Region to evolve and support a dynamic and resilient future.

1.3 Vision Statement and Considerations

The vision statement is a compact, high-level statement that guided the master planning process and informed the considerations developed for the plan. The overarching vision statement of the IMP is:

“Building a safe, equitable and sustainable future for the Region’s Water, Wastewater and Transportation systems through responsible and proactive planning”.

In support of this overarching vision, the IMP also includes two (2) focused vision statements specific to the study components:

The Water and Wastewater vision focuses on:

“Planning for a future Regional water and wastewater system that is safe, efficient, resilient and prioritizes the environment”.

Meanwhile, the Transportation vision focuses on:

“Planning for a future multi-modal Regional transportation system that is safe, continuous, and connected across Halton Region to support all modes of travel, all users and all abilities”.

In addition to the vision statements, key considerations were developed to help guide the IMP decision making process and the development of the infrastructure strategies. The considerations include:

- **Equitable Infrastructure Services** – Provide for water and wastewater services in urban areas and access to multi-modal Regional transportation infrastructure (including active transportation, transit and auto).
- **Safe and Healthy Communities** – Support healthy and active lifestyles and community well-being. For example, the provision of active transportation infrastructure and the provision of safe drinking water.
- **Sustainability** – Balance social, environmental and economic goals to support growth in a sustainable manner.
- **Climate Change** – All phases of Regional water, wastewater and multi-modal transportation infrastructure planning must recognize and incorporate climate change.
- **Communication and Consultation** – Ensure the IMP process and strategies are clearly and openly communicated and consulted with stakeholders.
- **Integration of Planning for Regional Infrastructure** – Ensure a coordinated approach to implementation of Regional water, wastewater, and multi-modal transportation infrastructure.
- **Technical Innovation** – Include innovation in the development of Regional water, wastewater and multi-modal transportation infrastructure strategies.

Together, the vision statements and considerations provide a strategic foundation for shaping priorities, evaluating alternative solutions, and making informed decisions throughout the course of the IMP.

1.4 Problem or Opportunity Statement

The problem or opportunity statement serves as a foundation for the Master Plan process in accordance with the Municipal Class Environmental Assessment (MCEA) process and helps establish the overall scope of the project. The IMP problem or opportunity statement is defined as follows:

“The Integrated Master Plan has been initiated to update the Region’s long-term servicing strategy and capital implementation plan for Water, Wastewater and Transportation to support future growth to 2051.”

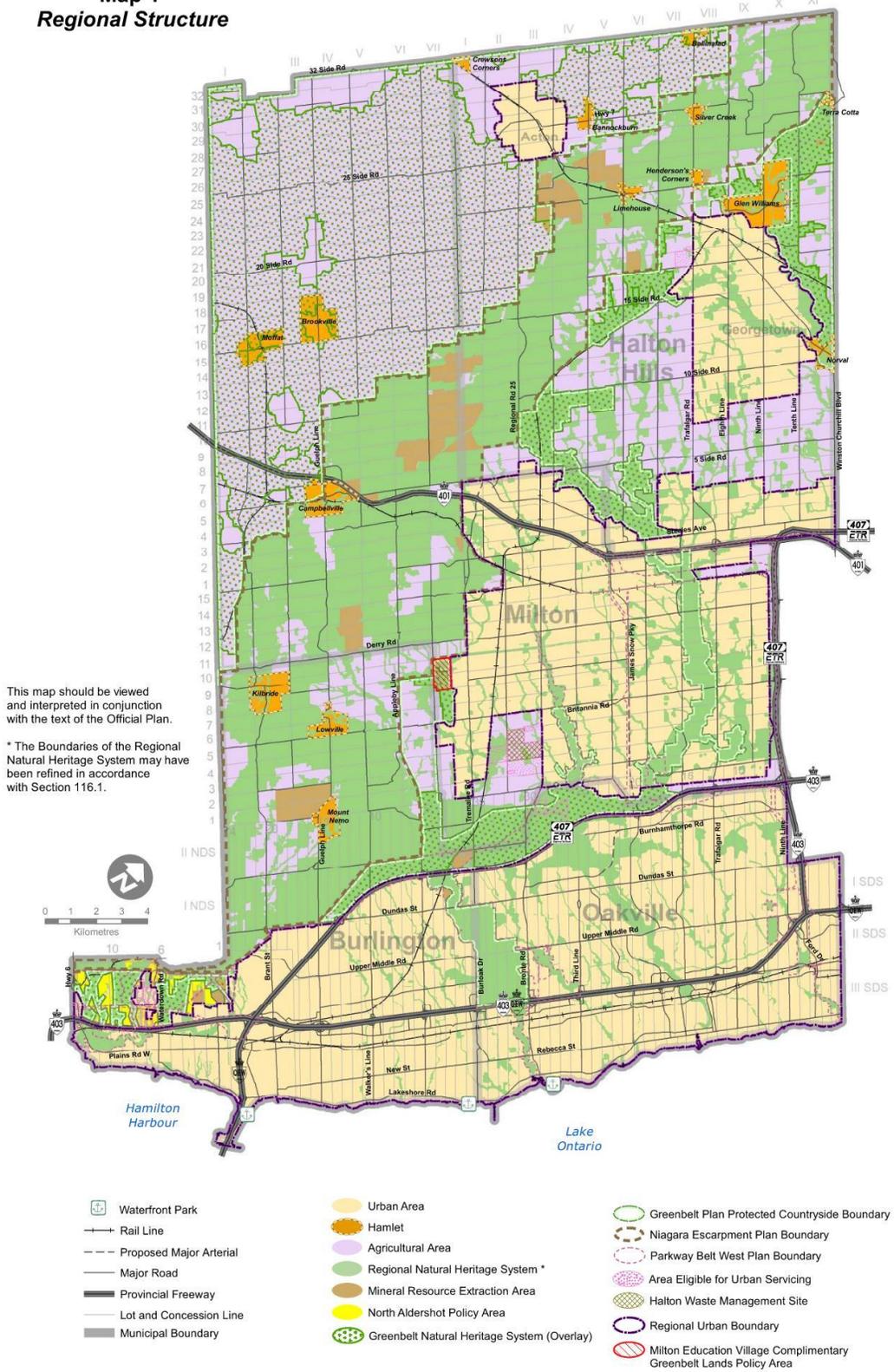
1.5 Study Area

Halton Region is located in southern Ontario and is bordered by the City of Hamilton to the west, Peel Region to the east, Wellington County to the north and Lake Ontario to the south. The Region is comprised of four Local Municipalities including the City of Burlington, the Town of Halton Hills (including the Communities of Acton and Georgetown), the Town of Milton and the Town of Oakville.

Halton Region covers an area of 966 square kilometres with a population of over 650,000. The Region features a diverse range of urban centres, suburban communities, rural areas, and protected natural landscapes, including parts of the Niagara Escarpment and the Greenbelt, which contribute to its unique environmental and cultural character.

The overall study area can be seen in **Figure 1**.

Map 1 Regional Structure



May 16, 2024

Figure 1 – Halton Region Study Area

1.6 Population and Employment Planning Forecasts

Following the completion of Halton’s Integrated Growth Management Strategy (IGMS) and the Regional Official Plan Amendment 49 (ROPA 49), the Region developed the comprehensive Joint Best Planning Estimates (JBPE) update for population and employment in the fall of 2023 with the Local Municipalities. The JBPEs are essential input for planning and delivering Regional infrastructure, ensuring services like water, wastewater, and transportation can accommodate future growth.

The 2023 JBPEs version 3.032 to the year 2051, align with the new housing targets set out in Bill 23. The updated forecasts consider new direction from the Province of Ontario as well as recently approved growth areas. As a result of the new housing targets, the JBPEs anticipate higher population growth over the next decade across all of the Halton Region’s Area Municipalities than the initial IGMS and ROPA 49.

As the Region’s population and employment base is forecasted to increase between 2031 and 2051, the IMP builds on the long-term servicing strategies previously outlined in the 2011 water, wastewater, and transportation master plans to reflect the population and employment growth projections to 2051.

Table 1 highlights the residential population forecasts to the year 2051, and **Table 2** highlights the employment population forecasts to the year 2051.

Table 1 – Residential Population Forecasts

Municipality	2051*
Burlington	324,000
Halton Hills	167,000
Milton	455,000
Oakville	443,000
Total	1,389,000

**The 2051 forecasts are based on the Minister’s decision on ROPA 49 through Bill 162, Get It Done Act, 2024, which received Royal Assent on May 16, 2024, as well as Bill 23, More Homes Built Faster Act, which received Royal Assent on November 28, 2022.*

Table 2 – Employment Population Forecasts

Municipality	2051*
Burlington	150,000
Halton Hills	87,000
Milton	175,000
Oakville	212,000
Total	624,000

**The 2051 forecasts are based on the Minister’s decision on ROPA 49 through Bill 162, Get It Done Act, 2024, which received Royal Assent on May 16, 2024, as well as Bill 23, More Homes Built Faster Act, which received Royal Assent on November 28, 2022.*

2.0 Related Studies and Background Information

2.0 Related Studies and Background Information

A comprehensive review of existing studies and documentation was undertaken to inform the development of the wastewater component of the IMP. These materials provided critical context regarding the existing system, servicing strategies, and ongoing initiatives across Halton Region.

The wastewater component of the IMP lays out a high-level plan for the Region's future wastewater system to the year 2051. The IMP is an update to the previous 2011 Sustainable Halton Water & Wastewater Master Plan.

The IMP is part of a larger policy framework that guides how wastewater is planned at a Federal, Provincial, Regional, and Local level, which is described in detailed in Section 4.0 of Volume 2: Plan Overview and Foundations. In Ontario, the provincial government sets a framework for growth and development that municipalities must follow.

The following section highlights key documents, in addition to those identified in Volume 2, that have been referenced in the development of the wastewater servicing strategy.

Key documents include:

- 2011 Sustainable Halton Water & Wastewater Master Plan (Sustainable Halton Master Plan).
- Development Charges Technical Reports (2012, 2017, 2022).
- Area Servicing Plans for various communities, including:
 - **Burlington:** Bronte Meadows, Tremaine-Dundas, Burlington Mobility Hubs.
 - **Halton Hills:** Premier Gateway Phase 1B and 2B, Southeast Georgetown.
 - **Milton:** Derry Green Business Park, Royal Park (North & South), Milton Major Transit Station Areas (MTSAs), Agerton and Trafalgar Corridor, Britannia.
 - **Oakville:** North Oakville East, Sixteen Hollow Employment Area, 407 West Employment Area, Midtown Oakville, Bronte GO MTSA.
- Class Environmental Assessments (EA):
 - West River Wastewater Pumping Station Class EA Study
 - Mid-Halton Wastewater Treatment Plant Expansion
 - Biosolids Composting Facility Study
 - Navy and Water Street Wastewater Pumping Station & Collection System Class EA Study
 - Halton Hills #4 Wastewater Pumping Station Class EA Study
 - Lower Base Line Wastewater Pumping Station and Associated Forcemains Class EA Study

- Aldershot Creek Wastewater Main Study
- Fulton Wastewater Pumping Station - New Wastewater Forcemain Municipal Class EA Study
- Junction Street Wastewater Pumping Station Class EA Study
- John Street Wastewater Pumping Station Class EA Study Town of Halton Hills
- 2012 Wastewater Pumping Station Master Plan
- Acton Wastewater Treatment Plant Municipal Class EA Study
- Additional Reports and Studies:
 - Wastewater Treatment Performance Report
 - Mid-Halton Wastewater Treatment Plant Facility Plan Report
 - Rebecca Flow Optimization Study
 - Wastewater Pumping Station Servicing Strategy Update
 - Basement Flooding Mitigation Study
 - Burlington East Wastewater Servicing Strategy
 - Georgetown Wastewater Treatment Plant – Capacity, Capital Needs and Servicing Strategy Assessments
 - Capacity Capital Needs and Scoping Study Assessment for the Agnes Street Wastewater Pumping Station and Black Creek Trunk Sewer
 - Silver Creek Environmental Review
 - Burlington West Wastewater Servicing Strategy
- Council Reports and Related Materials:
 - Council Motion – Declaration of Climate Change Emergency (September 11, 2019)
 - Workshop on Infrastructure Planning and Financing (March 8, 2023)
 - PW-13-23 – Allocation Programs Update (March 10, 2023)

These foundational documents, together with input from interested parties and updated modelling and technical analyses, provided the basis for identifying servicing constraints and opportunities. They supported the development of a comprehensive, forward-looking wastewater servicing strategy that aligns with growth objectives, environmental commitments, and infrastructure investment priorities to 2051.

3.0 Existing Wastewater Collection System

- 3.1 Wastewater Collection in Halton Region at a Glance
- 3.2 Lake-Based System
- 3.3 Stream-Based System



3.0 Existing Wastewater Collection System

3.1 Wastewater Collection in Halton Region at a Glance

Halton Region's wastewater collection system services the City of Burlington, the Town of Halton Hills including the communities of Acton and Georgetown, the Town of Milton, and the Town of Oakville. The existing wastewater collection system is comprised of the lake-based system and stream-based system as shown in **Figure 2**.

The following sections outline each of the components of the lake-based and stream-based wastewater collection systems including treatment plants, pumping stations and main trunk sewer systems.

3.2 Lake-Based System

The lake-based wastewater system is primarily defined by four distinct drainage areas that are delineated based on conveyance of flow to one of the following treatment plants: Burlington Skyway, Mid-Halton, Oakville Southeast, and Oakville Southwest Wastewater Treatment Plants (WWTP).

3.2.1 Wastewater Treatment Plants

Burlington Skyway WWTP

The Burlington Skyway WWTP, located at 1125 Lakeshore Road in the City of Burlington, serves the City of Burlington and discharges treated effluent into Hamilton Harbour, Lake Ontario. The drainage area for this plant spans from the shorelines of Lake Ontario northerly to Highway 407, westerly to Highway 6, and easterly to approximately Burloak Drive. The plant uses tertiary treatment processes, including screening, primary clarification, activated sludge, final clarification, and deep sand filtration. The final effluent is disinfected using UV light before being released. The Skyway WWTP has a rated capacity of 140 ML/d.

Mid-Halton WWTP

The Mid-Halton WWTP, located at 2195 North Service Road in the Town of Oakville, currently provides wastewater treatment for the northern portion of the urban area in the Town of Oakville as well as the Town of Milton. Wastewater infrastructure projects are currently underway on Eighth Line and Trafalgar Road to support growth in Georgetown. Once commissioned, wastewater flows from the southern portion of Georgetown will be directed to this plant.

The drainage area for this plant generally spans southerly to the Queen Elizabeth Way (QEW), northerly to No. 5 Side Road, easterly to Eighth Line, and westerly to Tremaine Road. The plant is a conventional secondary treatment facility and discharges to Lake Ontario through a diffused outfall that combines flows with the treated effluent from the Oakville Southwest WWTP. The rated capacity of the Mid-Halton WWTP is 125 ML/d.

Existing Infrastructure

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Biosolids Management Centre / Equalization Tank
- Forcemains
- Trunk Wastewater Mains
- Wastewater Mains
- Municipal Boundary

Existing Drainage Areas

- Acton WWTP
- Georgetown WWTP
- Mid-Halton WWTP
- Oakville SE WWTP
- Oakville SW WWTP
- Skyway WWTP

Pumping Stations

- | | |
|-----------------------|-------------------------|
| 1 Armstrong | 54 La Salle Park |
| 2 Gollop | 55 Third Line |
| 3 Lynden | 56 Stirling |
| 4 Moore Park | 57 Northshore Boulevard |
| 5 Agnes Street | 62 Gardiner Dr |
| 6 Kingham | 63 Cinderbarke |
| 7 Water Street | 64 Marine Drive |
| 8 Cedarberry | 65 Coronation Park |
| 9 Carrington | 66 Belvedere |
| 10 Chancery | 67 Appleby Place |
| 11 Ennisclare | 68 Indian Road |
| 12 Ninth Line | 69 Bellview Street |
| 13 Belair Estates | 70 Stillwater Crescent |
| 14 Argyle | 71 Unsworth Avenue |
| 15 Raymar | 72 Belhaven |
| 16 First Street | 73 Bayshore |
| 17 Gairloch Gardens | 74 Grandview Avenue |
| 18 Navy | 75 Overtown Place |
| 20 Lakewood | 76 John Street |
| 21 Walker | 77 Bridgeview |
| 23 Birchhill Lane | 78 Providence |
| 24 Westdale | 79 Riverbank Way |
| 27 Hixon | 80 Norval |
| 28 Bronte Yacht Club | 83 Main Street |
| 29 West River | 85 North |
| 30 Pinedale | 86 Mid-Block Arterial |
| 31 Elizabeth Gardens | 87 16 Mile Creek |
| 32 Bromley | 88 Laurier Ave |
| 33 Junction St | 92 Garden Trails |
| 34 Roseland Creek | 97 Halton Hills 1 |
| 35 Paletta Gardens | 99 Joshua Creek |
| 37 Edgewater Crescent | 100 10 Side Road |
| 38 Spring Garden | 103 Tremaine Rd |
| 40 Oaklands Park | 104 Halton Hills 2 |
| 41 Danforth Place | 260 Leachate |
| 42 Chartwell | 912 Dundas Station |
| 43 Morrison Heights | 914 Glen Williams |
| 44 Cumnock | 1315 Halton Hills 3 |
| 45 Weaver | 2916 Avondale |
| 46 Riverside | 3316 Woodington |
| 47 Shepherd | 3716 Double Ten |
| 48 Cardinal Avenue | 4117 Britannia Rd |
| 50 Sheldon Creek | 4118 Dundas East |
| 52 Shorewood | 5317 Lakeshore Road |
| 53 Lakvlew | 5716 Fulton |

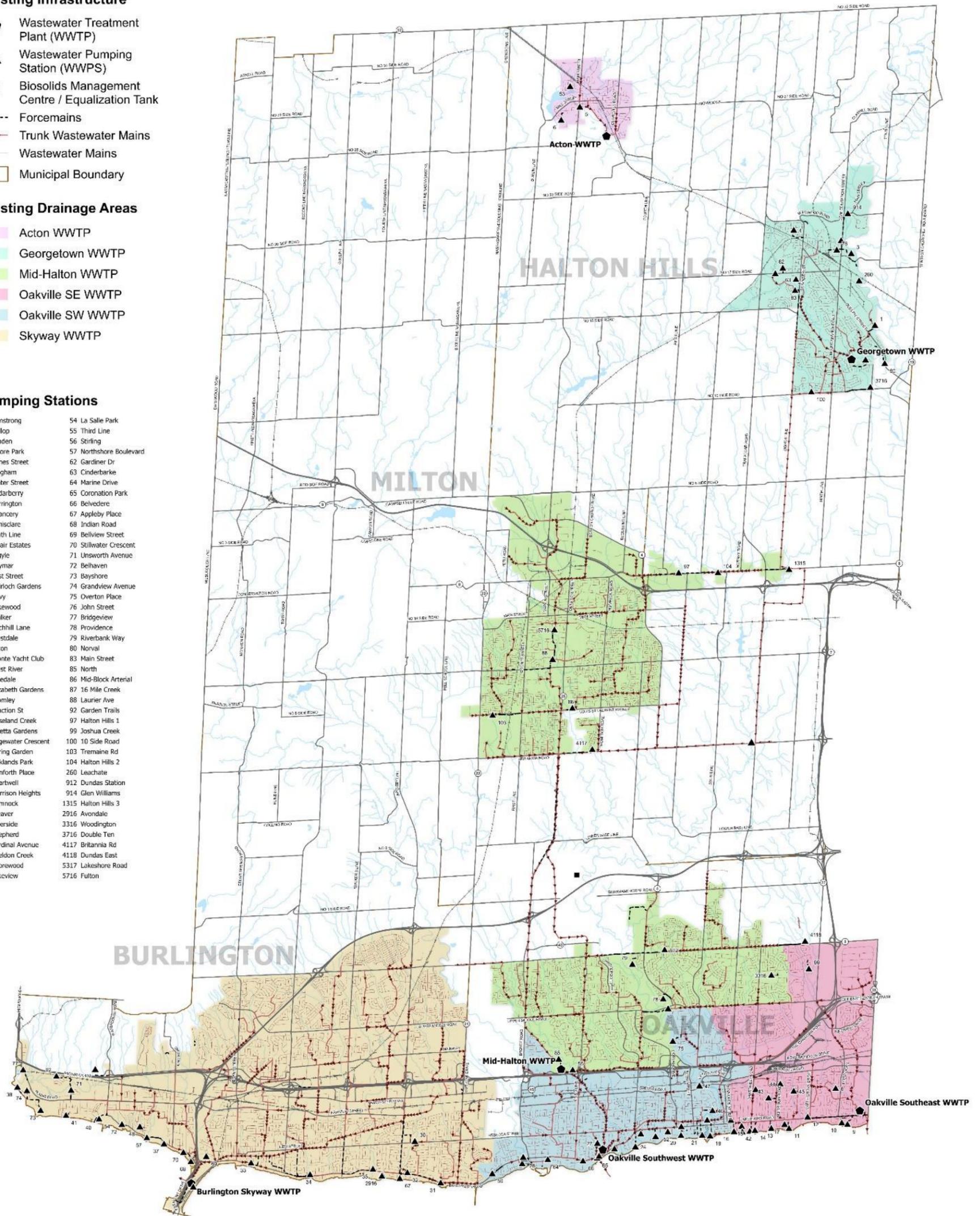


Figure 2
Existing Wastewater Infrastructure



Oakville Southwest WWTP

The Oakville Southwest WWTP is located at 1385 Lakeshore Road West and currently provides wastewater treatment capacity to the urban area in south Oakville. The drainage area is generally bounded by Great Lakes Boulevard to the west, Reynolds Street to the east, the QEW to the north and Lake Ontario to the south; in addition to a small area between the QEW and Upper Middle Road, from Sixteen Mile Creek to Trafalgar Road/McCrane Street East. The plant discharges treated effluent to Lake Ontario through a diffused outfall that combines flows with treated effluent from the Mid-Halton WWTP. Based on conventional treatment processes, the rated capacity is 45 ML/d.

Oakville Southeast WWTP

The Oakville Southeast WWTP is located at 2477 Lakeshore Road East. The plant currently provides wastewater treatment to an area bounded by Reynolds Street on the west, Winston Churchill Boulevard on the east, Dundas Street to the north and Lake Ontario to the south. The plant is a secondary treatment plant, and discharges treated effluent to Lake Ontario. The rated capacity of the Oakville Southeast WWTP is 32 ML/d.

Table 3 provides a summary of the Region’s lake-based wastewater treatment plants.

Table 3 – Lake-based Wastewater Treatment Plants

Wastewater Treatment Plant	Rated Capacity (ML/d)	Effluent Discharge Location
Burlington Skyway	140	Lake Ontario
Mid-Halton	125	Lake Ontario
Oakville Southwest	45	Lake Ontario
Oakville Southeast	32	Lake Ontario

3.2.2 Wastewater Pumping Stations

In most of Halton Region, the ground elevation gradually slopes down from north to south, which has informed the planning and construction of the gravity collection system. In locations where distance or topography do not permit the use of gravity sewers, wastewater pumping stations (WWPS) are utilized to pump flows from the low-lying areas to infrastructure located in higher elevations for conveyance by gravity to treatment plants.

Table 4 summarizes lake-based wastewater pumping stations with their firm capacities. Firm capacity is the station’s capacity with the largest pump out of service.

Table 4 – Wastewater Pumping Stations in South Halton Lake-based System

SPS	Facility Name	Existing Firm Capacity (L/s)	Drainage Area
30	Pinedale WWPS	286	Skyway
31	Elizabeth Gardens WWPS	692	Skyway
32	Bromley Park WWPS	133	Skyway
33	Junction Street WWPS	128	Skyway
34	Roseland WWPS	175	Skyway
35	Paletta Garden WWPS	104	Skyway
69	Bellview Street WWPS	4	Skyway
67	Appleby Place WWPS	5*	Skyway
38	Spring Garden Rd WWPS	6	Skyway
41	Danforth Place WWPS	5	Skyway
70	Stillwater Cres WWPS	5*	Skyway
71	Unsworth Ave WWPS	7	Skyway
57	Northshore Blvd WWPS	33	Skyway
73	Bayshore Blvd WWPS	10	Skyway
74	Grandview Ave WWPS	14	Skyway
77	Bridgeview Street WWPS	13	Skyway
92	Garden Trails WWPS	10	Skyway
37	Edgewater WWPS	5*	Skyway
48	Cardinal Drive WWPS	8	Skyway
72	Belhaven	1	Skyway
40	Oakland Park WWPS	13	Skyway
54	LaSalle Park Road WWPS	115	Skyway
68	Indian Road WWPS	3	Skyway
78	Providence Road WWPS	60	Mid-Halton
79	Riverbank Way WWPS	9	Mid-Halton
5716	Fulton Street WWPS	645	Mid-Halton
85	North WWPS	3508	Mid-Halton
86	Mid-Block Arterial WWPS	907	Mid-Halton
87	16 Mile Creek WWPS	595	Mid-Halton
88	Laurier Ave WWPS	302	Mid-Halton
97	Halton Hills WWPS No.1	280	Mid-Halton
103	Tremaine WWPS	535	Mid-Halton
104	Halton Hills WWPS No.2	182	Mid-Halton
912	Dundas	627	Mid-Halton
1315	Halton Hills #3 WWPS	34	Mid-Halton
4117	Britannia Road	1000	Mid-Halton
4118	Dundas East	428	Mid-Halton
55	Third Line WWPS	1516	Mid-Halton
8	Cedarberry WWPS	6	Oakville Southeast
9	Carrington PI WWPS	22	Oakville Southeast
10	Chancery Lane WWPS	17	Oakville Southeast
11	Ennisclare Drive WWPS	16	Oakville Southeast
13	Bel Air Estates WWPS	10	Oakville Southeast
14	Argyle Drive WWPS	15	Oakville Southeast
15	Raymar Place WWPS	7	Oakville Southeast

SPS	Facility Name	Existing Firm Capacity (L/s)	Drainage Area
16	First Street WWPS	16	Oakville Southeast
17	Gairloch Gardens WWPS	6	Oakville Southeast
42	Chartwell Road WWPS	17	Oakville Southeast
43	Morrison Heights WWPS	9	Oakville Southeast
44	Cumnock WWPS	6	Oakville Southeast
45	Weaver Ave WWPS	30	Oakville Southeast
99	Joshua Creek WWPS	8	Oakville Southeast
12	Ninth Line WWPS	738	Oakville Southeast
28	Bronte Yacht Club WWPS	4*	Oakville Southwest
29	West River WWPS	70	Oakville Southwest
50	Sheldon Creek WWPS	64	Oakville Southwest
52	Shorewood Place WWPS	9	Oakville Southwest
65	Coronation Park WWPS	13	Oakville Southwest
66	Belvedere Drive WWPS	27	Oakville Southwest
7	Water Street WWPS	23	Oakville Southwest
18	Navy Street WWPS	30	Oakville Southwest
20	Lakewood Drive WWPS	14	Oakville Southwest
21	Walker Street WWPS	40	Oakville Southwest
23	Birch Hill Lane WWPS	34	Oakville Southwest
24	Westdale Road WWPS	36	Oakville Southwest
46	Riverside Drive WWPS	44	Oakville Southwest
47	Shepherd Road WWPS	15	Oakville Southwest
56	Stirling Drive WWPS	15	Oakville Southwest
64	Marine Drive WWPS	208	Oakville Southwest
75	Overton Place WWPS	38	Oakville Southwest
27	Hixon Street WWPS	13	Oakville Southwest

**Indicates firm capacity of stations with only one pump.*

3.2.3 Sanitary Trunk Sewers

For the purposes of the IMP, any sewer with a diameter greater than 450mm is considered as a trunk sewer. The conveyance system in each drainage area consists of local collector sewers that drain by gravity to either wastewater pumping stations or trunk sewers. All trunk sewers ultimately discharge to a wastewater pumping station at a treatment facility or connect directly to a treatment plant. A list of the main trunk sewers in the lake-based system is provided below.

- Burlington East trunk sewer
- Burlington West trunk sewer
- Boyne trunk sewer
- Upper Middle Road trunk sewer
- Lakeshore Road trunk sewer
- Rebecca Street trunk sewer
- Devon Road trunk sewer
- Claremont Crescent trunk sewer

3.3 Stream-Based System

The stream-based wastewater system is comprised of two main drainage areas delineated by treatment plants: Acton WWTP and Georgetown WWTP.

3.3.1 Wastewater Treatment Plants

Acton WWTP

The Acton WWTP is located at 202 Churchill Road South in Halton Hills (Acton) and currently provides wastewater treatment for the urban area of the Community of Acton. The rated capacity of the plant is 5.6 ML/d. The plant is a tertiary treatment facility with treatment processes that include screening, grit removal, flow splitting, nitrifying activated sludge, final clarification, backwash sand filters, an aluminum sulphate dosing system, and dual stage anaerobic digestion. The treated effluent is discharged to Black Creek.

Georgetown WWTP

The Georgetown WWTP is located at 275 Mountainview Road in Halton Hills and currently provides wastewater treatment for the urban area in the Community of Georgetown. The rated capacity of the plant is 22.7 ML/d. As described earlier, wastewater infrastructure projects are currently underway on Eighth Line and Trafalgar Road to support growth in Georgetown. Once commissioned, wastewater flows from the southern portion of Georgetown will be directed to the Mid-Halton WWTP.

The Georgetown WWTP is a tertiary treatment facility consisting of screening, raw sewage pumping, grit removal, primary clarification, nitrifying activated sludge, secondary clarification, tertiary filtration, and two stage anaerobic digestion. Ferric chloride is used for phosphorus removal and UV light is used for disinfection. The treated effluent discharges to Silver Creek.

Table 5 provides a summary of the Region’s stream-based wastewater treatment plants.

Table 5 – Stream-based Wastewater Treatment Plants

Wastewater Treatment Plant	Rated Capacity (ML/d)	Effluent Discharge Location
Acton	5.6	Black Creek
Georgetown	22.7	Silver Creek

3.3.2 Wastewater Pumping Stations

Similar to the lake-based wastewater collection system, wastewater from the stream-based system is conveyed by gravity to areas of lower elevation downstream in the collection system. Where the continuation of the gravity system is no longer possible, wastewater pumping stations are introduced to intercept flows and pump them via pressurized forcemains to trunk sewers further downstream.

Table 6 summarizes the stream-based wastewater pumping stations with their firm capacities. Firm capacity is the station’s capacity with the largest pump out of service.

Table 6 – Wastewater Pumping Stations in North Halton Stream Based System

SPS	Facility Name	Firm Capacity (L/s)	Drainage Area
6	Kingham Hill WWPS	14	Acton
5	Agnes Street WWPS	86	Acton
53	Lakeview WWPS	16	Acton
83	Main Street WWPS	146	Georgetown
100	No 10 Side Road WWPS	51	Georgetown
914	Glen Williams WWPS	26	Georgetown
3716	Double Ten WWPS	43	Georgetown
1	Armstrong Ave WWPS	135	Georgetown
2	Gollop Cr WWPS	21	Georgetown
3	Lynden CI WWPS	36	Georgetown
4	Moore Park WWPS	25	Georgetown
62	Gardiner Drive WWPS	6	Georgetown
63	Cinderbarke Terrace WWPS	10	Georgetown
76	John Street WWPS	87	Georgetown
80	Norval WWPS	15	Georgetown

3.3.3 Sanitary Trunk Sewers

The same diameter threshold is applied to both stream-based and lake-based sewers; meaning any sewer with a diameter greater than 450mm is considered a trunk sewer. Below is a summary of the stream-based trunk sewers by WWTP drainage area. A list of the main trunk sewers in the stream-based system is provided below.

- Black Creek trunk sewer (Acton)
- Silver Creek trunk sewer (Georgetown)
- Delrex trunk sewer (Georgetown)
- Mountainview trunk sewer (Georgetown)

4.0 Assessment of Existing and Future Wastewater Infrastructure

- 4.1 Wastewater System Criteria and Levels of Service
 - 4.2 Wastewater Hydraulic Model
 - 4.3 Opportunities and Considerations
 - 4.4 Assessment of Wastewater Infrastructure
-

4.0 Assessment of Existing and Future Wastewater Infrastructure

Identifying and evaluating strategy alternatives is a core element of the master planning process. The development of strategies allows for a comprehensive review of potential solutions, supporting informed decision-making, and ensuring the recommended strategies are both well-founded and defensible.

The IMP builds on the recommendations of previous Regional Master Plans and utilizes the Joint Best Planning Estimates as a foundation to develop strategies for infrastructure requirements to accommodate future growth from 2031 to 2051. Inputs to the IMP include background studies and plans by the Region, Local Municipalities, adjacent municipalities, and other agencies such as the Ontario Ministry of Transportation and Metrolinx. Along with new/updated analysis tools, including a new wastewater model, these inputs formed a comprehensive and integrated base for understanding and planning infrastructure in Halton Region. This was followed by identifying and evaluating strategy alternatives to allow for a comprehensive and transparent review of potential solutions, supporting informed decision-making, and ensuring the recommended strategies are well-founded. As with previous water, wastewater, and transportation master plans, each system was assessed independently considering the full range of opportunities and considerations.

A critical initial step in the master planning process was the assessment of the existing infrastructure to establish baseline system conditions. These baseline conditions became the foundation of the future recommendations of the IMP and were determined through a comprehensive and detailed analysis of the current system. Once the baseline conditions were established, the impacts of projected future growth on the wastewater collection and treatment systems were evaluated to identify key opportunities and considerations, which informed the development and assessment of the long-term servicing strategies.

The overall process is illustrated in **Figure 3** and includes the inputs described above. The process considered the identification of opportunities and considerations, development of alternative solutions, and the identification of the preferred infrastructure solution and strategy.

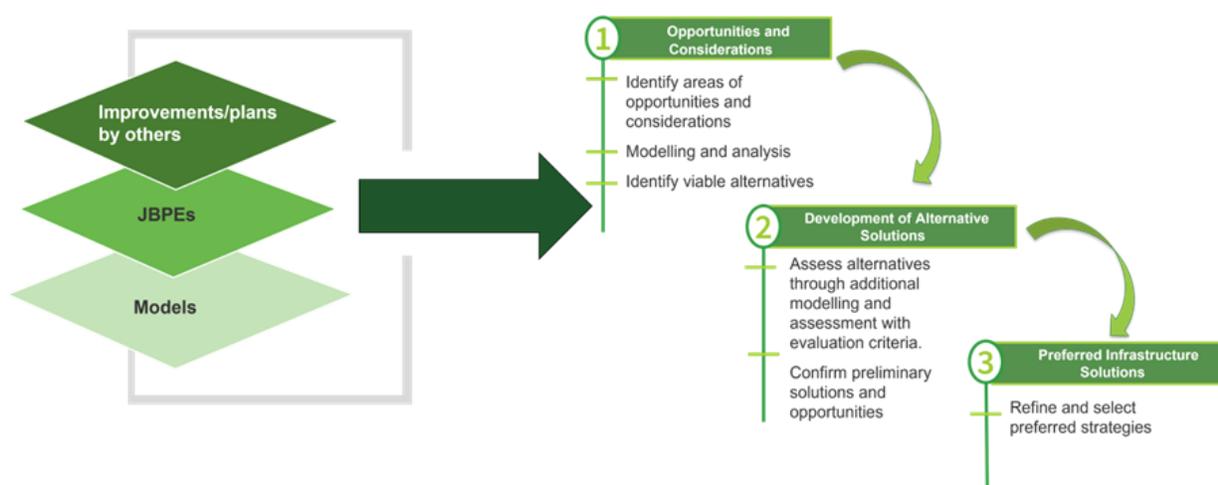


Figure 3 – Process for Development of the Preferred Strategy

The preferred wastewater strategy identified through this process will form the foundation of the Region's long-term capital and implementation programs to 2051. These programs provide a coordinated framework to guide infrastructure investments, ensure alignment with growth projections, and support sustainable, resilient, and adaptable systems through to 2051.

Recognizing the importance of monitoring and responding to growth across the Region, the strategies identified through the IMP will be adaptable to support Local growth priorities to 2051.

The following sections describe the wastewater system criteria, levels of service, and hydraulic model used in the IMP, and identify potential wastewater system opportunities and expected considerations and limitations in the existing wastewater systems' ability to accommodate future growth to 2051.

4.1 Wastewater System Criteria and Levels of Service

As part of the IMP, Halton Region's existing wastewater system design criteria and levels of service (LOS) were reviewed to assess their continued applicability based on available data and current industry best practices. This assessment aimed to validate, confirm, or amend the criteria and assumptions used in the development of the IMP and support future long-term infrastructure planning initiatives.

A summary of the key design criteria and levels of service adopted for the wastewater component of the IMP is provided in the following sections.

4.1.1 Design Criteria

Design criteria are a set of technical parameters, standards, and assumptions used to guide the planning, sizing, and timing of infrastructure systems. The guiding principle for the design criteria is to ensure that flow projections are accurately estimated with an appropriate level of safety and risk management. This overall principle also ensures that infrastructure would have sufficient capacity to support the approved/planned growth.

The design criteria used for the wastewater component of the IMP are summarized in **Table 7**.

Table 7 – Wastewater Design Criteria

Wastewater Future Flow Projection	
Future 2051 Flow = 2022 Starting Point + (Growth to 2051 x Design Criteria)	
Wastewater Starting Point Methodology	
2022 Starting Point = 85 th Percentile of Historical Average Day Flows in the past 10 years (2013 – 2022)	
Treatment Design Criteria	
Average Day Flow	
Residential	320 L/capita/day
Employment	260 L/employee/day
Pumping Station and Mains Design Criteria	
Dry Weather Flow	
Residential	215 L/capita/day
Employment	185 L/employee/day
Peak Wet Weather Flow	
Inflow & Infiltration Allowance	0.28 L/s/ha
Peaking Factor	Harmon Formula

4.1.2 Levels of Service

Levels of service refer to measurable performance targets or qualitative service expectations that guide the planning, design, operation, and maintenance of water and wastewater infrastructure. Ultimately, the wastewater collection system should be sized to convey peak wet weather flow conditions, while treatment capacity is assessed based on average daily flows to the plants.

Table 8 summarizes the performance indicators that were used to assess the Region’s wastewater systems and their ability to meet the levels of service objectives:

Table 8 – Summary of Wastewater Levels of Service Performance Indicators

Levels of Service	
Wastewater Treatment Plants (WWTP)	<p>Use hydraulic capacity analysis for upgrade triggers; BOD loading analysis can be used to flag and initiate further monitoring of plant capacity through subsequent studies.</p> <p>Wastewater treatment capacity requirements are based on average daily flows, including average level of extraneous flow allowance.</p> <p>When average daily flow reaches 80% of plant capacity, based on 10-year 85th percentile of historical data, the planning process for plant expansion will be triggered (i.e., Class EA). When average daily flow reaches 90% of plant capacity, based on 10-year 85th percentile of historical data, the plant expansion will be implemented (i.e., design and construction).</p>
Trunk or Local Sewers	<p>Potential Upgrade Triggers for Sewer Upsizing or Mitigation.</p> <p>Risk of Surcharge - If max surcharge state is exceeded (i.e. flow depth (d)/ Diameter (D) ≥ 1) during a 5-year design storm.</p> <p>Recommended next steps – Review pipe conditions to determine criticality and risk of surcharge impacts; Review flow monitor data to assess confidence in calibration.</p> <p>Risk of Basement Flooding – If max flood depth exceeds an HGL of less than 1.8m below grade during a 10-year design storm.</p> <p>Recommended next steps – Assess risk to properties; assess risk of flooding; review flow monitor data to assess confidence in calibration.</p> <p>The wet weather flag should be treated as indicative only and any/all of the following steps are recommended for further monitoring and refining the need for upgrades:</p> <ul style="list-style-type: none"> • Asses the risks through field investigation and/or historical surcharge/flooding records • Flag the sewer to initiate further monitoring • Analyze future growth projections • Analyze a 25-year rain event on a case-by-case basis • Analyze future pipe capacity • Confirm if flag requires an upgrade or eligible to defer <p>Peak flow is a 5-minute instantaneous peak.</p> <p>Design storms are derived from the City of Burlington IDF curve data using a 24-hour SCS Type II distribution.</p>
Pumping Stations	<p>Upgrades are triggered when projected peak wastewater flows reach 90% of firm capacity of the station.</p> <p>Pumping Stations are sized based on peak wet weather flow under a 10-year rain event or design storm.</p>
Option for Climate Change Analysis	<p>Incorporate climate change into design storm analysis where applicable in subsequent studies.</p>

4.2 Wastewater Hydraulic Model

Halton Region maintains detailed all-pipes hydraulic models of its wastewater system developed in InfoWorks ICM, which include local sewers, trunk sewers, pumping stations, and other key wastewater infrastructure. The models are used to support planning, design, and operational decision-making across the Region and are updated and recalibrated on an ongoing basis, with the most recent calibration completed in 2021.

For the purposes of the IMP, the models were reviewed and updated to reflect recent infrastructure changes and system performance data. The following summarizes the key modelling activities completed as part of this study:

- **Model Review and Update:** The existing hydraulic models were reviewed and updated with the latest infrastructure data, design criteria, and levels of service performance indicators.
- **Future Growth and Infrastructure Updates:**
 - Growth projections from the JBPEs were incorporated into the models to establish five-year planning horizons through to 2051.
 - Future infrastructure, both committed projects and previously identified needs, were added to support the assessment of servicing strategies to 2051.
- **Scenario Development:** The updated hydraulic models were used to simulate a series of planning scenarios, including existing conditions and future horizons extending to 2051. Scenarios considered peak wet weather flow conditions under various design storms, as well as different growth and infrastructure phasing assumptions. The modelled results helped identify the wastewater infrastructure servicing strategies presented in the IMP.

This modelling work forms the basis for identifying future capacity needs and system improvements required to accommodate long-term growth in the Region.

4.3 Opportunities and Considerations

The assessment of opportunities and considerations focused on the wastewater service areas within the approved Regional Urban Boundary. The IMP did not assess or propose expanded wastewater servicing in areas outside of the approved Boundary.

Existing and future wastewater opportunities and considerations were identified through discussions with Regional staff, hydraulic analyses, and review of available infrastructure data (e.g., geographic information systems, design reports, as-built information, etc.). The InfoWorks ICM hydraulic models were used to assess the performance of the existing and future system under various flow conditions.

Opportunities and considerations for the wastewater system include:

- **Wastewater Treatment Expansion:** expanding the wastewater treatment capacity in Halton to support growth, primarily provided at the Mid-Halton WWTP which has site capacity for expansion.
- **Environmental Challenges:** Sixteen Mile Creek presents challenges for gravity sewer servicing. To allow the flow of wastewater west and south to the Mid-Halton WWTP, pumping stations are required.
- **Supporting Continued Growth in Urban Areas:** intensification growth within several key MTSAs across the Region will need to be considered at the existing WWTPs, as well as local collection systems.
- **Trunk Sewer Extension for Greenfield Growth:** trunk sewer extension for servicing greenfield growth in Milton and Halton Hills.
- **Infrastructure Upgrades:** to support growth across the Region.
- **Consider Energy Efficiency:** strategies that consider climate change will be used where feasible when selecting servicing strategies.
- **Wastewater System Consolidation:** strategies will also be considered that simplify and consolidate the collection and treatment system.

4.4 Assessment of Wastewater Infrastructure

The assessment of wastewater infrastructure (wastewater treatment plants, wastewater pumping stations, and trunk sewers) was carried out using the most current data available, updated analysis tools, updated design criteria and levels of service, and the JBPEs, as described in previous sections. The results of the assessment are summarized in the following sections.

4.4.1 Wastewater Treatment Plants

This section summarizes the analysis of existing and future treatment capacity needs for the lake-based and stream-based wastewater systems. A treatment capacity assessment was completed using updated design criteria and the JBPEs to evaluate when capacity upgrades may be required to meet the needs of future growth. Average daily flow projections were determined for each wastewater treatment plant service area to identify potential capacity constraints. Based on the Region’s levels of service guidelines, plant expansion planning is typically initiated when average daily flow reaches 80% of treatment capacity and implementation (i.e., design and construction) is triggered at 90% of treatment capacity.

The wastewater treatment capacity assessment informs the timing needs for capacity expansion and are presented in the following sections. Wastewater treatment capacity expansion strategies are addressed in Section 5.3.1

4.4.1.1 Acton Wastewater Treatment Plant

Figure 4 presents the projected wastewater flows for the Acton WWTP compared to the existing rated capacity. The assessment indicated that by 2051, forecasted growth will generate wastewater flows that slightly exceeds the 90% capacity threshold of the Acton WWTP.

The current rated capacity of the plant is sufficient to meet projected wastewater flows to 2051, but achieving this threshold requires continuous long-term flow monitoring. Recommendations for potential future expansions can be made upon review of growth uptake and associated flows under future infrastructure planning assignments.

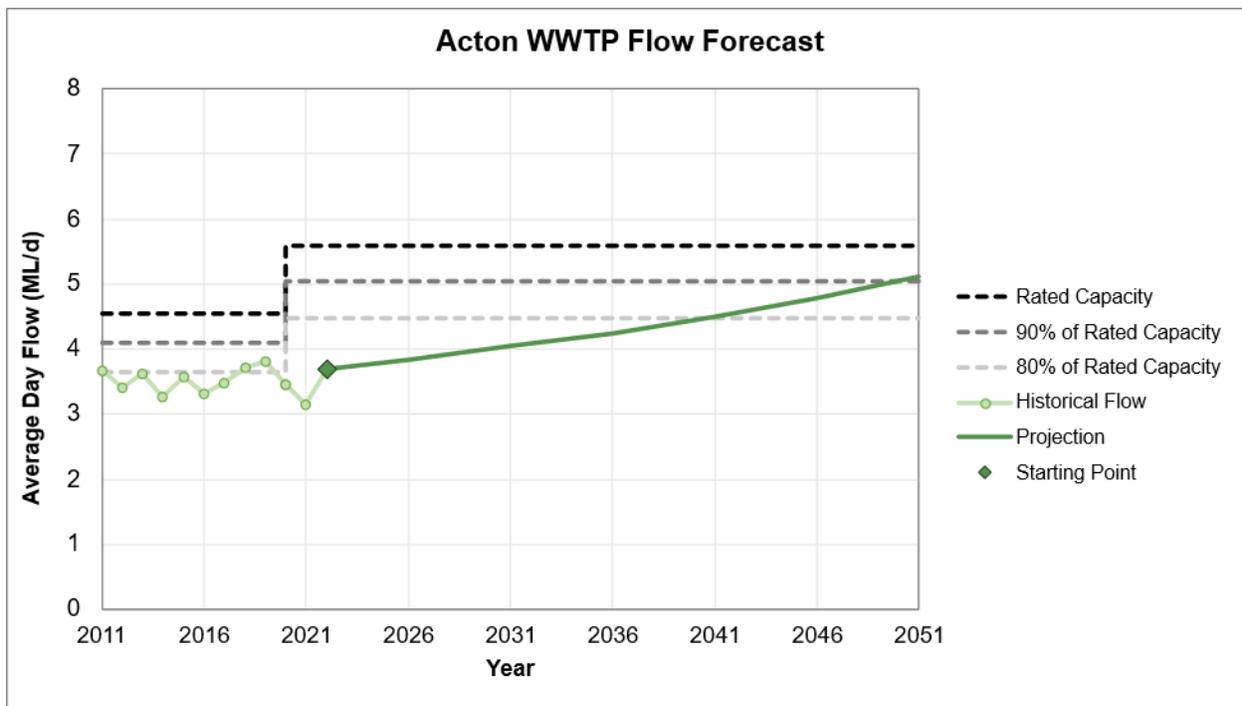


Figure 4 – Wastewater Flow Forecast – Acton Wastewater Treatment Plant

4.4.1.2 Georgetown Wastewater Treatment Plant

Figure 5 presents the projected wastewater flows for the Georgetown WWTP compared to the existing rated capacity. The assessment indicated that the existing treatment capacity will not be sufficient to support projected wastewater flows to 2051 without diverting flows away from the Georgetown WWTP.

The Sustainable Halton Master Plan identified potential treatment capacity limitations at the Georgetown WWTP and recommended diversion of wastewater flows to the Mid-Halton WWTP as the preferred strategy. The Region has implemented the recommended wastewater flow diversion strategy with the construction of the Eighth Line and Trafalgar Road trunk sewer. This strategy will divert wastewater flows from south Georgetown to the Mid-Halton WWTP, reducing the demand on the Georgetown WWTP and eliminating the need for expansion to support growth to 2051. This strategy is reviewed in more detail in Section 5.3.1.2.

Figure 5 illustrates the importance of the flow diversion strategy to support the projected growth in Georgetown. Without the diversion strategy, projected wastewater flows in Georgetown could reach over 25 ML/d by 2051, which would exceed the current capacity of the plant by 2 ML/d.

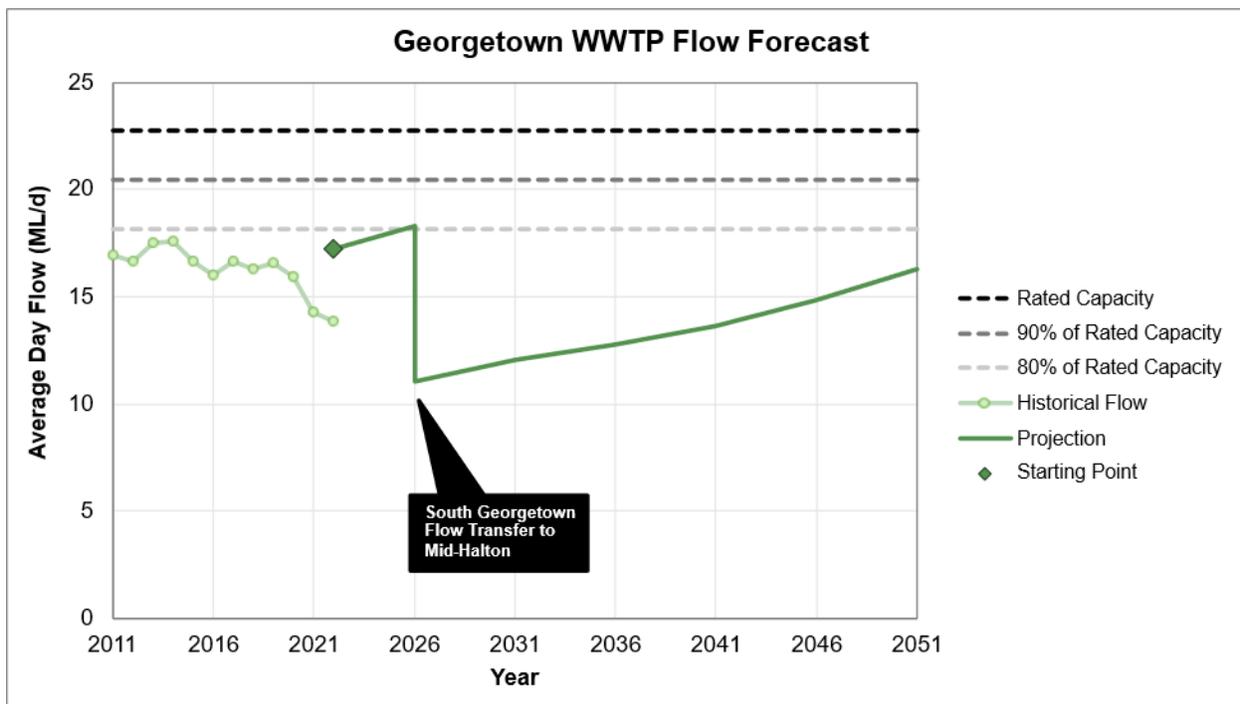


Figure 5 – Wastewater Flow Forecast – Georgetown Wastewater Treatment Plant

4.4.1.3 Mid-Halton Wastewater Treatment Plant

Figure 6 presents the projected wastewater flows for the Mid-Halton WWTP compared to the existing rated capacity and currently planned capacity upgrades. The assessment indicated that the existing capacity and committed upgrades will not be sufficient to meet the projected wastewater flows to 2051.

Based on the growth projections, the planned capacity expansion is critical in the near-term, as 90% of the current treatment capacity is expected to be reached around 2027. The ongoing Mid-Halton WWTP Capacity Upgrades EA study has recommended an expansion from the current 125 ML/d to 195 ML/d. Upon completion, the new 90% capacity threshold is projected to be reached around 2034. This highlights the need for further treatment capacity at the Mid-Halton WWTP to support growth to 2051.

As shown in **Figure 6**, the estimated wastewater flows at the Mid-Halton WWTP will be approximately 316 ML/d by 2051. This projected demand includes the diversion of wastewater flows from Georgetown, consistent with the Georgetown WWTP servicing strategy. The servicing strategy to achieve the required Mid-Halton treatment capacity is discussed in Section 5.3.1.3.

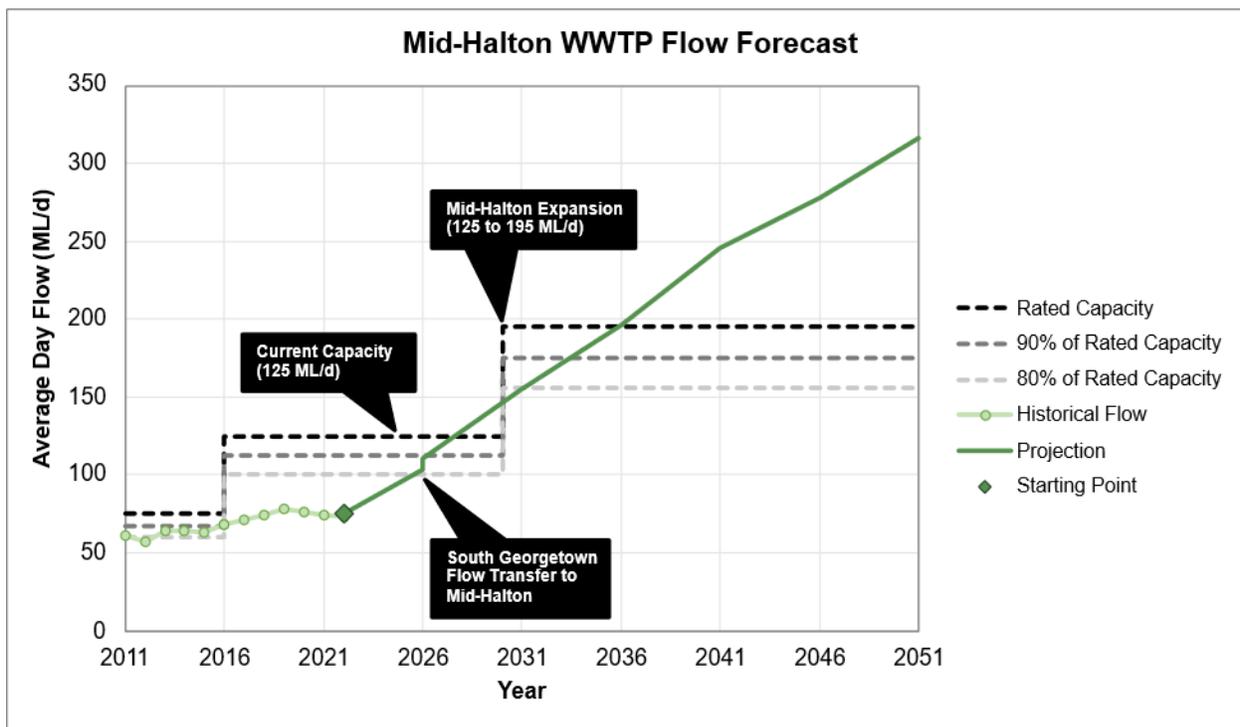


Figure 6 – Wastewater Flow Forecast – Mid-Halton Wastewater Treatment Plant

4.4.1.4 Oakville Southeast Wastewater Treatment Plant

Figure 7 presents the projected wastewater flows for the Oakville Southeast WWTP compared to the existing rated capacity. The assessment indicated that projected flow would approach 90% of the Oakville Southeast WWTP rated capacity by 2051.

Based on the Region’s levels of service guidelines, plant expansion planning is typically initiated when average daily flow reaches 80% of treatment capacity and implementation (i.e., design and construction) is triggered at 90% of treatment capacity. While the total current capacity is sufficient to meet projected growth to 2051, nearing the 90% threshold suggests a need for long-term flow monitoring. Recommendations for potential future expansions can be made upon review of growth uptake and associated flows under future infrastructure planning assignments.

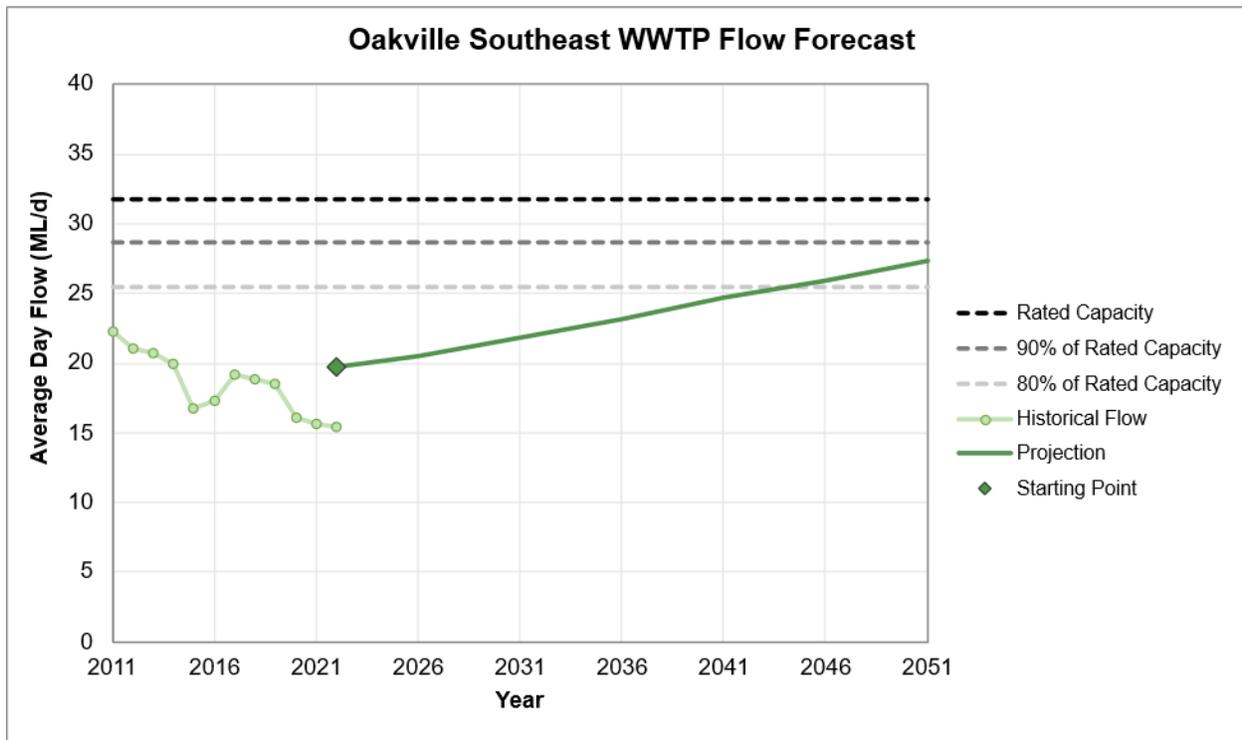


Figure 7 – Wastewater Flow Forecast – Oakville Southeast Wastewater Treatment Plant

4.4.1.5 Oakville Southwest Wastewater Treatment Plant

Figure 8 presents the projected wastewater flows for the Oakville Southwest WWTP compared to the existing rated capacity. The assessment indicated that the existing capacity will not be sufficient to meet the projected wastewater flows to 2051.

As shown below, the average daily flow is projected to approach 80% of available treatment capacity before 2031 and 90% before 2036, with an estimated future flow of 53 ML/d by 2051. The servicing strategy to achieve this treatment capacity is discussed in Section 5.3.1.5.

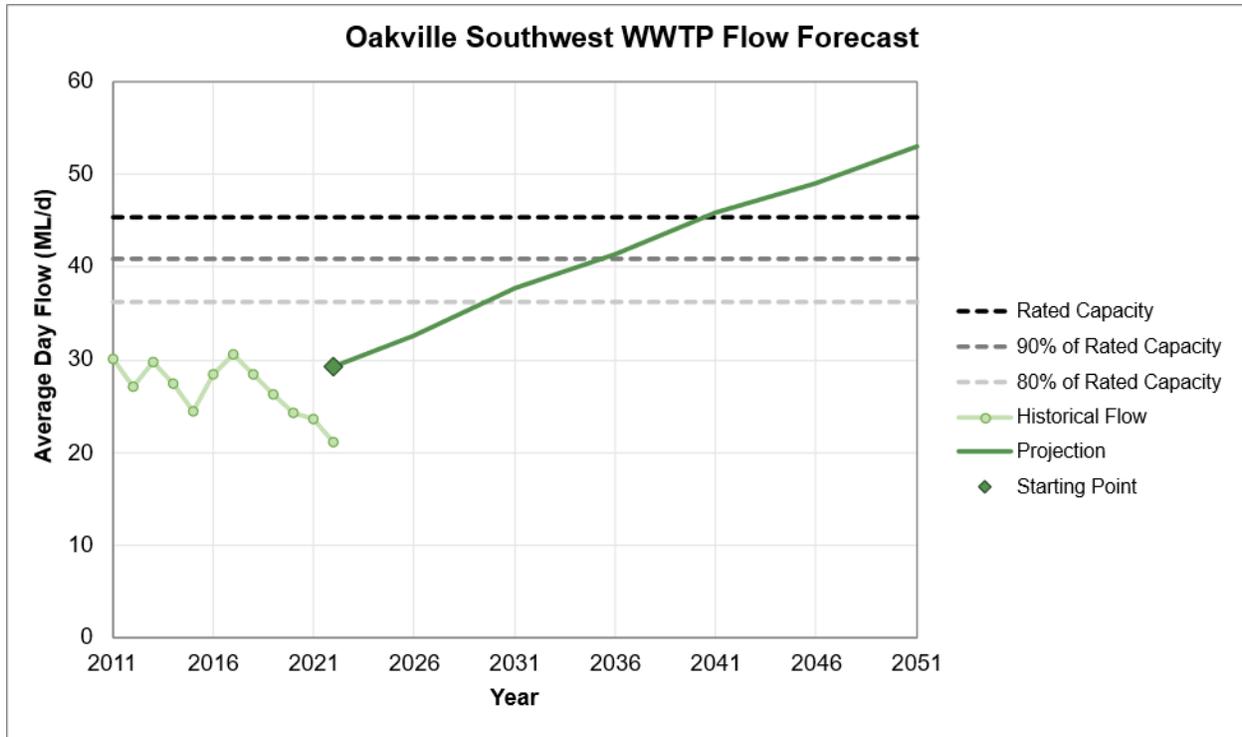


Figure 8 – Wastewater Flow Forecast – Oakville Southwest Wastewater Treatment Plant

4.4.1.6 Skyway Wastewater Treatment Plant

Figure 9 presents the projected wastewater flows for the Skyway WWTP compared to the existing rated capacity. The assessment indicated that the existing capacity will not be sufficient to meet the projected wastewater flows to 2051.

For the Skyway WWTP, average daily flow is projected to approach 80% of available treatment capacity around 2027 and 90% around 2032, with an estimated future flow of approximately 150 ML/d by 2051. The servicing strategy to achieve this treatment capacity is discussed in Section 5.3.1.6.

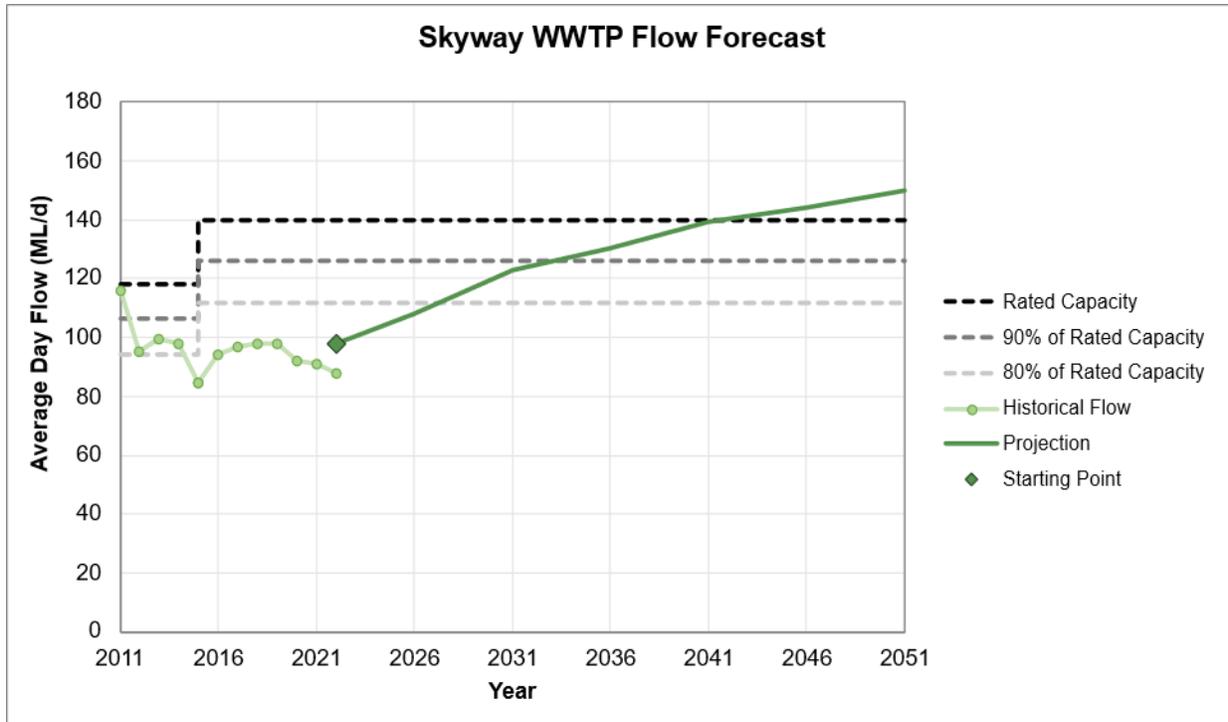


Figure 9 – Wastewater Flow Forecast – Skyway Wastewater Treatment Plant

4.4.2 Wastewater Pumping Stations

The initial assessment of wastewater pumping capacity was based on a comparison of each station's firm capacity, as provided by the Region, to inflows from various modelling scenarios (existing and growth scenarios with peak wet weather flow conditions), which identified potential system constraints.

Each pumping station was evaluated individually to account for unique factors such as footprint, location, and nearby physical or environmental constraints. While capacity limitations under existing and/or future peak wet weather flow conditions were key considerations, a holistic approach was applied. This approach considered not only capacity but also the age and condition of infrastructure, drainage area characteristics, hydraulic model accuracy, input from Operations staff, nearby system constraints, ease of implementation of potential upgrades, and future servicing needs. These factors were assessed on a case-by-case basis, where applicable and where information was available.

Based on this assessment, the following capacity-related upgrade requirements have been identified to support growth to 2051.

Acton Wastewater Pumping Stations

Only the Agnes Street WWPS, located near the Acton GO MTSA, was identified as requiring capacity upgrades. The station is currently constrained under both existing and future peak wet weather flow conditions. The station was previously assessed through the "Capacity, Capital Needs, and Scoping Study" (December 2019), and the recommendations from this study were reviewed and validated through the IMP and documented in Section 5.0.

Burlington Wastewater Pumping Stations

The Elizabeth Gardens, Paletta Gardens, Bromley Park, and Roseland WWPS have been identified as constrained under existing peak wet weather flow conditions. Given the anticipated growth in their respective service areas, these stations have been identified for potential upgrades. The servicing strategy for Burlington East, referred to as the "Burlington East Sanitary Trunk" (BEAST) strategy, adopts a combined solution initially explored in the "Burlington East Long-Term Wastewater Servicing Strategy" (February 2021), which is further refined and presented in Section 5.0. The Pinedale and Appleby WWPS have also been incorporated into the broader system strategy.

Mid-Halton Wastewater Pumping Stations

The Fulton, Tremaine, Mid-Block Arterial, and Dundas WWPS in Mid-Halton, were found to potentially exceed the firm capacity under future peak wet weather flow conditions. The Fulton and Mid-Block Arterial WWPSs show potential capacity constraints under existing wet weather flow conditions as well. In several catchment areas, additional factors were noted that may influence servicing needs, including opportunities to decommission existing WWPSs, localized surcharging north of the Fulton WWPS, and the future role of the Mid-Block Arterial and Dundas stations in accommodating future growth. Further analysis and identification of servicing strategies for these stations are provided in Section 5.0.

Oakville Wastewater Pumping Stations

Three WWPSs in Oakville have been identified with capacity constraints under future peak wet weather flow conditions: the Water Street, Navy Street, and West River WWPSs. Both the Navy Street and West River WWPSs also show potential capacity constraints under existing peak wet weather flow conditions. The servicing strategies to address capacity constraints at these stations were previously assessed as part of the “*Navy and Water Street Wastewater Pumping Station & Collection System*” and “*West River Wastewater Pumping Station*” Class EA studies and have been reviewed and carried forward in the IMP. Future servicing requirements and strategies for these stations are provided in Section 5.0.

Georgetown Wastewater Pumping Stations

The John Street WWPS, located near the Georgetown GO MTSA, was identified as potentially constrained under future peak wet weather flow conditions. Operations staff noted that modelled flows may be conservative relative to observed system behaviour. As such, no immediate upgrades are required. Continued monitoring is recommended to refine the timing and scope of future improvements. Further servicing considerations for this catchment are addressed in Section 5.0.

Table 9 provides a summary of facilities that are anticipated to require a servicing strategy to support projected growth in their respective service areas.

Table 9 – Summary of Wastewater Pumping Stations with Potential or Identified Capacity Constraints

Facility Name	Firm Capacity (L/s)	Future (2051) 10-yr PWWF (L/s)	Drainage Area
Agnes Street WWPS	86	221	Acton
Elizabeth Gardens WWPS	692	1,070	Skyway
Paletta Garden WWPS	104	604	Skyway
Bromley Park WWPS	133	221	Skyway
Roseland WWPS	175	223	Skyway
Fulton Street WWPS	645	1,525	Mid Halton
Midblock Arterial WWPS	907	1,157	Mid Halton
Dundas Street WWPS	627	1,185	Mid Halton
North WWPS	3,508	8,440	Mid Halton
Tremaine WWPS	535	578	Mid Halton
Ninth Line WWPS	738	863	Oakville Southeast
West River WWPS	70	171	Oakville Southwest
Water St WWPS	23	133	Oakville Southwest
John St WWPS	87	153	Georgetown

4.4.3 Sanitary Trunk Sewers

Trunk sewers are a critical component of wastewater infrastructure, conveying flows collected by local sewers downstream to pumping stations or treatment plants. The assessment of trunk sewers considered multiple factors, including potential capacity constraints and associated risks under both existing and future conditions, the location and magnitude of projected growth, and the impacts of nearby servicing strategies.

Based on this assessment, several existing trunk sewers have been identified for upgrades or servicing strategies to accommodate projected growth to 2051.

Acton Trunk Sewers

Black Creek Trunk Sewer

The existing 450mm-525mm diameter Black Creek trunk sewer is the primary trunk sewer servicing the Acton urban area, with the exception of areas east of Churchill Road North. The proposed Acton GO MTSA, located north of the trunk is also expected to be serviced by the Black Creek trunk, which conveys wastewater to the Acton WWTP. There are potential capacity constraints in the trunk sewer near the WWTP under existing peak wet weather flow conditions, and near Agnes Street under future peak wet weather flow conditions. Given the location of the Agnes Street WWPS and the aging trunk sewer infrastructure, the Region completed a “Capacity, Capital Needs, and Scoping Study” (December 2019) to evaluate potential solutions for both the pumping station and the trunk sewer. A servicing strategy is required to address capacity constraint at Agnes St WWPS and Black Creek trunk sewer while facilitating future growth. This strategy is described in Section 5.3.2.1.

Burlington Trunk Sewers

Drury Lane Trunk Sewer

The existing 525mm trunk sewer located along Brenda Crescent and Phyllis Street show potential capacity constraints under existing peak wet weather flow conditions. The proximity of the Burlington GO MTSA further supports the need for a capacity increase in the trunk sewer along Drury Lane. Due to elevation differences and multiple railway crossings, there are limited opportunities for diversion of flow at this location. Therefore, sewer upsizing has been identified as the proposed strategy along the constrained sections of this trunk sewer, which is further discussed in Section 5.3.2.2.

Maple Avenue Trunk Sewer

The Maple Avenue trunk sewer consists of 525mm and 750mm diameter sewers. The 750mm trunk sewer is located along Glendor Avenue and continues on Maple Avenue to Northshore Boulevard. The 525mm trunk sewer runs parallel to the 750mm trunk sewer beginning north of Hammond Street and extends southerly to Bellview Street. Both trunk sewers merge into an 825mm trunk sewer south of Bellview Street.

Potential capacity constraints have been identified near Plains Road East under existing peak wet weather flow conditions. The nearby Burlington GO MTSA is planned for significant growth which will require additional capacity in the sewer system, reinforcing the need for timely and strategic infrastructure improvements.

In response to historical infrastructure constraints, the Region completed a feasibility study in 2024 to evaluate alternative solutions. The IMP reviewed the alternatives identified in the study, and the findings are discussed in Section 5.3.2.2.

Skyway Inlet Trunk Sewer

Capacity constraints have been identified along the existing 1800mm inlet trunk sewer to the Skyway WWTP, resulting in backup along the major trunk sewers on North Shore Boulevard and Francis Road Boulevard during existing and future peak wet weather flow conditions.

The Region previously initiated a Class EA to evaluate a new inlet sewer to the Skyway WWTP; however, the project was deferred to allow for further review of sewer inverts/slope and updated flow data. A servicing strategy solution is required to increase conveyance capacity to the Skyway WWTP to accommodate existing users and projected growth in Burlington. This strategy is further described in Section 5.3.2.2.

Georgetown Trunk Sewers

Silver Creek Trunk Sewer

The Silver Creek 600mm trunk sewer generally follows the Silver Creek valley in Georgetown, extending from Mill Street to the Georgetown WWTP. While a small portion of the sewer is situated within the road right-of-way, the majority runs through an easement adjacent to Silver Creek.

Potential capacity constraints have been identified under existing and future peak wet weather flow conditions. Given the environmental sensitivity of the surrounding area, a servicing strategy is required to manage flows and address system performance issues. The strategy is further described in Section 5.3.2.3.

Oakville Trunk Sewers

Lakeshore Road West Trunk Sewer

Potential capacity constraints have been identified under existing and future peak wet weather flow conditions along the 600mm and 750mm trunk sewers that run parallel to one another on Lakeshore Road West from Third Line to Oakville Southwest WWTP. Similarly, potential capacity constraints have also been noted along Sunset Drive and Solingate Drive. Future growth in the Bronte GO MTSAs, located at the northern end of Sunset Drive, is expected to generate additional wastewater flows and capacity requirements throughout the existing sewer network, including the Lakeshore Road West trunk sewer. As such, a servicing strategy is required to accommodate future growth and improve system performance. The strategy is described Section 5.3.2.6.

5.0 Preferred Wastewater Servicing Strategy

5.1 Approach

5.2 Evaluation Process and Criteria

5.3 Servicing Strategy Development

5.4 Cost Estimation Framework

5.5 Preferred Servicing Strategy Summary

5.6 Capital Program for the Preferred Servicing Strategy

5.0 Preferred Wastewater Servicing Strategy

The process of identifying and assessing servicing alternatives is a critical component of the master planning process. It enables a comprehensive evaluation of potential servicing solutions and should be documented to ensure the process has been carried out in a transparent and defensible manner.

This section outlines the process to develop the preferred wastewater servicing strategy, including the identification and evaluation of alternatives, and presents the resulting capital program that supports implementation of the preferred strategy.

This section also identifies the costing and phasing of the proposed capital projects. Cost estimates are comprehensive and account for all stages of project delivery, including preliminary planning, environmental assessment, detailed design, property acquisition, and construction.

5.1 Approach

The strategy development approach has been designed to ensure a logical and transparent process that documents the evaluation and decision-making that will ultimately develop a successful capital program. Sustainability principles were considered in the development of the IMP and were integrated within the strategy development, such as:

- Making best use of existing infrastructure.
- Minimizing the cost of new infrastructure.
- Considering operation and maintenance costs to ensure financial sustainability.
- Planning for long-term reliability and security of the water and wastewater systems.
- Increasing system resiliency to climate change.
- Avoiding disruptions to natural and cultural heritage resources.
- Minimizing potential impact to the surrounding communities and the public.
- Minimizing environmental crossings and other disruptions to the environment.
- Configuring future infrastructure within the existing road right-of-way, where possible.
- Avoiding/reducing production of greenhouse gas (GHG) emissions.
- Developing solutions that are flexible and adaptable to support growth to 2051.

5.2 Evaluation Process and Criteria

Opportunities and considerations for the wastewater system were identified at the outset of the study and were used as a starting point for identifying conceptual servicing options. The evaluation process progresses from high-level concepts to more detailed servicing strategies and, where applicable, to further evaluation of specific servicing solutions in certain focus areas. The progression from high-level to more detailed servicing strategies allows for a more efficient process as it screens out servicing concepts that are not feasible and do not achieve the objectives of the servicing strategy before they are carried forward for detailed evaluation.

Servicing concepts, strategies, and specific servicing solutions are subject to a wide range of considerations, including:

- **Equitable Infrastructure Services** – Provide for water and wastewater services in urban areas and access to multi-modal Regional transportation infrastructure.
- **Safe and Healthy Communities** – Support healthy and active lifestyles and community well-being.
- **Sustainability** – Balance social, environmental and economic goals to support growth in a sustainable manner.
- **Climate Change** – All phases of Regional water, wastewater and multi-modal transportation infrastructure planning must recognize and incorporate climate change.
- **Communication and Consultation** – Ensure the IMP process and strategies are clearly and openly communicated and consulted on.
- **Integration of Planning for Regional Infrastructure** – Ensure a coordinated approach to implementation of Regional water, wastewater, and multi-modal transportation infrastructure.
- **Technical Innovation** – Include innovation in the development of Regional water, wastewater and transportation infrastructure strategies.

These considerations are closely aligned with the evaluation criteria used to assess servicing alternatives. The full set of criteria, along with detailed descriptions and the scoring methodology, are presented in **Table 10**. Each criterion includes specific measurable factors (quantitative and qualitative) used to identify the overall preferred servicing strategy.

Table 10 – Evaluation Criteria and Scoring

Criteria Category	Sub-Criteria	Scoring
Equitable Infrastructure Services	Improves/maintains levels of service for existing users	<ul style="list-style-type: none"> • Reduces LOS • Maintains LOS • Improves LOS
	Minimizes potential short/long-term noise and odour impacts	<ul style="list-style-type: none"> • Increases impact • Neutral • Decreases impact
Safe and Healthy Communities	Minimizes construction impact on traffic, local businesses, and residents	<ul style="list-style-type: none"> • Increases impact • Neutral • Decreases impact
	Considers long-term visual aesthetics of the proposed infrastructure	<ul style="list-style-type: none"> • Increases visual impact (e.g. new pump station) • Neutral (no impact) (e.g. maintain pump station) • Decreases visual impact (e.g. remove pump station)
	Minimizes impacts on surrounding properties	<ul style="list-style-type: none"> • Increases road/utility crossings & conflicts • Neutral • Minimizes road/utility crossings & conflicts
	Minimizes environmental crossings, impact on aquatic/terrestrial species at risk, and environmentally sensitive/protected areas, and nearby agricultural lands	<ul style="list-style-type: none"> • Increases impact • Neutral • Decreases impact
Sustainability	Incorporates water conservation and reuse practices	<ul style="list-style-type: none"> • Decreases conservation • Neutral • Increases conservation
	Minimizes impact on archaeological/resources, and cultural heritage sites	<ul style="list-style-type: none"> • Increases impact • Neutral • Decreases impact
	Maximizes existing infrastructure	<ul style="list-style-type: none"> • Requires new, dedicated infrastructure that doesn't improve system resiliency • Neutral • Maximizes capacity of existing infrastructure
	Full lifecycle costs	<ul style="list-style-type: none"> • Higher lifecycle cost • Neutral • Lower lifecycle cost
	Staging costs	<ul style="list-style-type: none"> • Higher staging and throwaway costs • Lower staging and throwaway costs
	State of Good Repair (SOGR) integration	<ul style="list-style-type: none"> • Lower level of coordination with SOGR program • Neutral

Criteria Category	Sub-Criteria	Scoring
		<ul style="list-style-type: none"> • Higher level of coordination with SOGR program
Climate Change	Considers resiliency and operational flexibility to adapt to Climate Change	<ul style="list-style-type: none"> • Strategy elements do not provide improved resiliency for Climate Change adaptation • Neutral • Strategy elements provide improved resiliency for Climate Change adaptation
	Reduction in emissions	<ul style="list-style-type: none"> • High carbon footprint • Neutral • Lower carbon footprint
Integration of Planning for Regional Infrastructure	Minimizes approvals/coordination	<ul style="list-style-type: none"> • Increases approval/coordination needs • Neutral • Decreases approval/coordination needs
	Integrates with road/transportation projects	<ul style="list-style-type: none"> • Decreased integrated with road/transportation program • Neutral • Increased integration with road/transportation program
Technical Innovation	Applies innovation and/or new technologies	<ul style="list-style-type: none"> • Does not consider innovative and/or new technologies • Neutral • Considers/applies innovative and/or new technologies
	Provides opportunity for operational flexibility and security	<ul style="list-style-type: none"> • Reduces operational flexibility and security of supply/capacity • Neutral • Maximizes operational flexibility and security of supply/capacity
	Considers performance of the system under emergency conditions (power outages, fire emergencies) or during construction	<ul style="list-style-type: none"> • Degrades performance • Maintains performance • Improves performance
	Supports phased growth	<ul style="list-style-type: none"> • Does not support phased growth • Neutral • Supports phased growth
	Minimizes roads/utility crossings and existing infrastructure and minimize proximity and/or conflicts with existing infrastructure	<ul style="list-style-type: none"> • Increases road/utility crossings & conflict • Neutral • Minimizes road/utility crossings & conflicts
	Considers constructability and technical feasibility to build and maintain infrastructure	<ul style="list-style-type: none"> • More constructability challenges and reduced technical feasibility • Neutral • Reduced constructability challenges and improved technical feasibility

5.3 Servicing Strategy Development

The IMP servicing strategies were developed to address the problem or opportunity statement identified in Preliminary Phase 1 of the MCEA process and to address the various constraints identified in Section 4.0.

Wastewater alternative servicing strategies were identified and reviewed in detail for existing and future growth areas. The following sections summarize the wastewater alternative servicing strategies developed and assessed as part of the IMP. These were ultimately subdivided into two (2) distinct sections:

- Treatment Plant Expansion Concepts – Based on the treatment capacity assessment of each WWTP, concepts were developed to address projected future capacity needs. Where capacity needs were identified, potential expansion concepts or monitoring strategies were outlined to support long-term servicing.
- Focus Areas Servicing Solutions – Targeted solutions in areas with identified potential capacity constraints or strategic growth priorities.

Collectively, the combination of servicing solutions will form the overall wastewater servicing strategy for the Region. The strategies are generally intended to build on the 2011 Sustainable Halton Master Plan, where appropriate, and develop similar concepts for wastewater collection and treatment.

The following sections provide an overview of the key components of the proposed wastewater servicing solutions, encompassing both the treatment plant and the wastewater conveyance systems within respective service areas. Comprehensive details of the preferred servicing strategies, including project sizing, location, and cost estimates, are provided in Section 5.6. followed by detailed evaluation tables (where applicable) in **Appendix 4A**.

5.3.1 Treatment Plant Expansion Concepts

Halton Region's levels of service guidelines for wastewater treatment facilities specify that expansion planning should begin when average day flows reach approximately 80% of the plant's rated capacity, with implementation triggered at 90% of the rated capacity. The treatment plants approaching or exceeding these thresholds were identified, and high-level servicing concepts were developed to address potential existing and future capacity constraints.

The concepts considered included: Do Nothing, Limit Growth, Plant Expansion, Flow Diversion, and Long-Term Monitoring, with the applicability of each concept assessed in the context of the plant's unique operating conditions and site-specific considerations. Each concept was evaluated using a high-level advantages and disadvantages assessment. Based on the evaluation, concepts were either screened out or carried further for further evaluation.

The concepts evaluated are summarized in the subsequent sections. For those concepts that required a more detailed evaluation, the detailed evaluation can be found in **Appendix 4A**.

5.3.1.1 Acton Wastewater Treatment Plant

As previously discussed in Section 4.4.1.1, existing treatment capacity at the Acton WWTP is sufficient to accommodate projected growth to 2051. It is noteworthy that average daily flow projections indicate future flows will reach 90% of the rated treatment capacity by 2051, as shown in **Figure 10**. Therefore, to support proactive planning, it is recommended that the Region continue long-term monitoring of wastewater treatment loading at the Acton WWTP. This will allow the Region to identify if and when the 90% trigger will be reached, so that options such as increase capacity or alternate treatment capacity options can be explored in a future master plan or separate study.

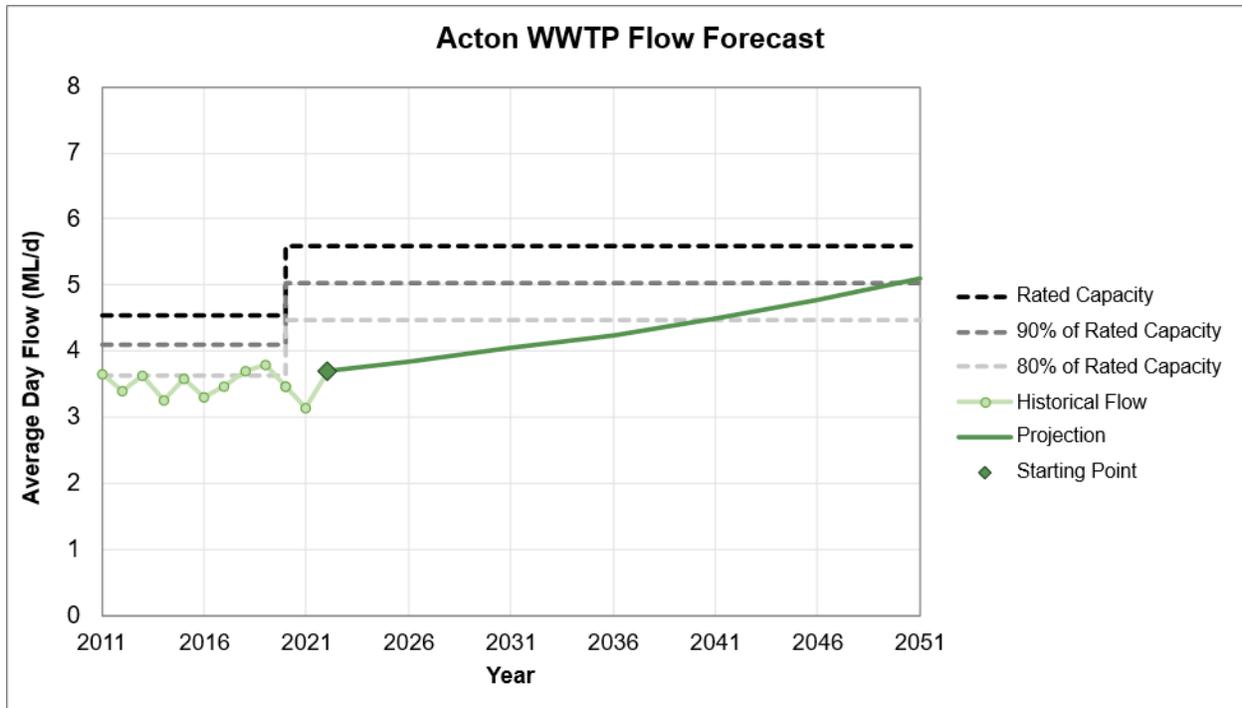


Figure 10 – Wastewater Flow Forecast – Acton Wastewater Treatment Plant

5.3.1.2 Georgetown Wastewater Treatment Plant

As discussed in Section 4.4.1.2, in line with the Sustainable Halton Master Plan, the Georgetown WWTP continues to service its existing catchment, while flows from south Georgetown are planned to be diverted to the Mid-Halton WWTP. These flows will be conveyed through the Eighth Line trunk sewer, the Drumquin WWPS, and balanced between the Lower Base Line and Britannia WWPS. This diversion strategy is already in the advanced stages of implementation.

With flows diverted from the Georgetown WWTP, the facility is expected to operate at lower average flow conditions. While the IMP hydraulic analysis focuses on projected flows for master planning purposes, previous detailed assessments of the “Georgetown WWTP, including the Capacity, Capital Needs and Servicing Strategy Assessments” (December 2020) and input from Regional Operations staff identified potential operational considerations associated with reduced flows, such as increased influent strength concentrations.

To address potential long-term operational considerations post-diversion and confirm the preferred servicing approach, the IMP evaluated the following servicing strategies:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Maintain Georgetown WWTP with Capital Improvements
- Alternative 4 – Decommission the Georgetown WWTP, construct a new WWPS, and divert flows to the Mid-Halton WWTP

Figure 11 and Figure 12 present the range of wastewater servicing alternatives evaluated and the wastewater flow forecast for the Georgetown WWTP based on the preferred servicing strategy.

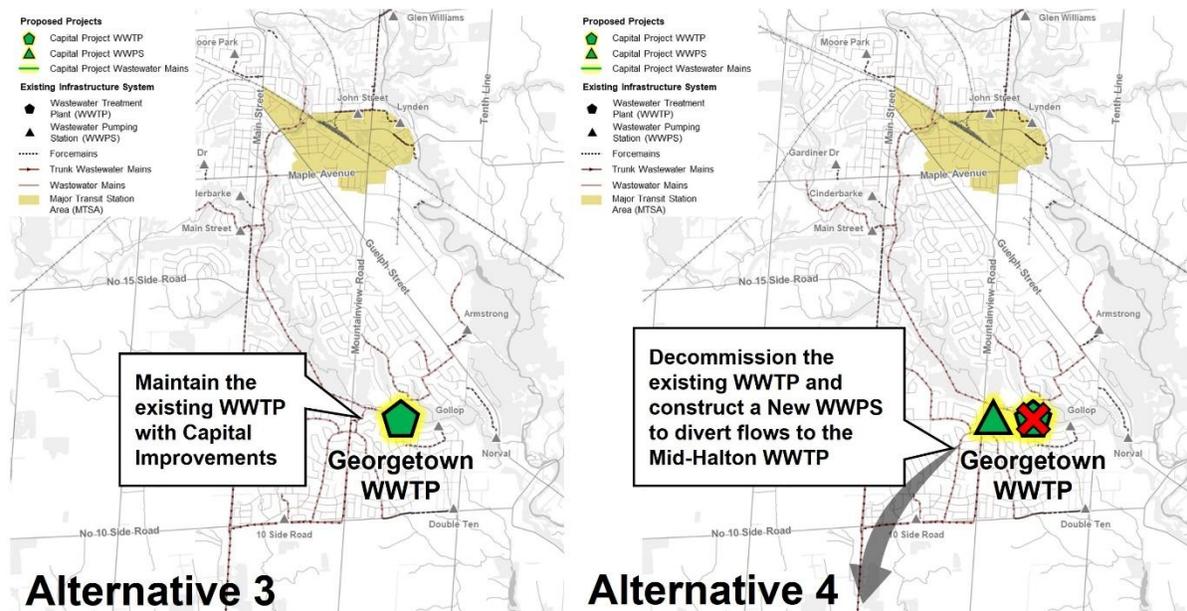


Figure 11 – Georgetown WWTP Servicing Alternatives

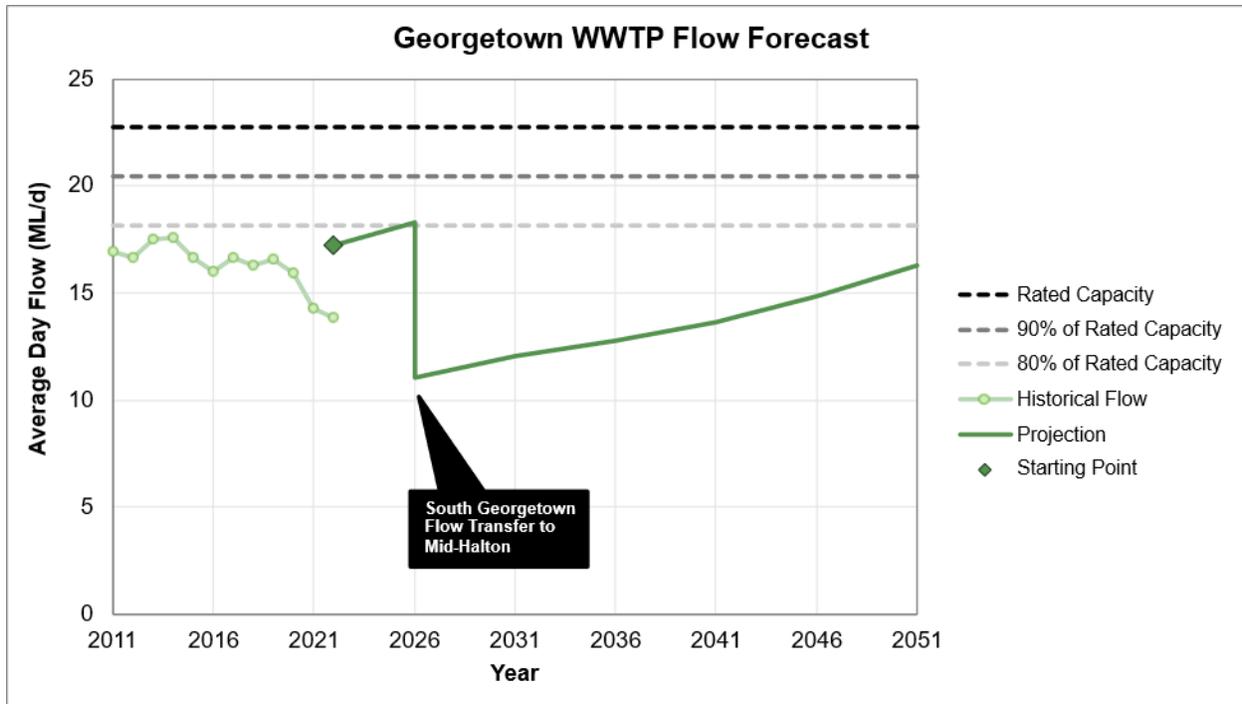


Figure 12 – Wastewater Flow Forecast – Georgetown Wastewater Treatment Plant

Table 11 provides a high-level summary of the key advantages and disadvantages associated with each alternative.

Table 11 – Wastewater Servicing Strategy Advantages and Disadvantages for Georgetown WWTP

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP's vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	✘ Screened Out
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP's vision and considerations. 	✘ Screened Out
3. Maintain existing WWTP with capital improvements	<ul style="list-style-type: none"> Makes use of existing infrastructure, reducing the need for new large-scale construction. Maintains flow within the same drainage area thereby avoiding significant downstream capacity upgrades and preserving capacity for future growth. Capital improvements can address operational challenges from lower flows and higher-strength influent post south Georgetown diversion. Minimizes environmental approvals and construction impacts by keeping work within the existing site. 	<ul style="list-style-type: none"> Requires targeted upgrades to address low-flow and higher-strength influent conditions post south Georgetown diversion. Additional odour control measures may be required. Full scope and cost of required process improvements have not yet been defined. 	✔ Carried Forward
4. Decommission the Georgetown WWTP, construct a new WWPS, and divert flows to the Mid-Halton WWTP	<ul style="list-style-type: none"> Addresses potential operational challenges from low-flow/high-strength influent by diverting all flows. Consolidates treatment at the Mid-Halton WWTP, potentially improving operational efficiency in the long-term. Potential to repurpose the existing WWTP site for other beneficial uses. 	<ul style="list-style-type: none"> Redirection of wastewater flow from Georgetown to Mid-Halton WWTP may limit growth in the existing Mid-Halton catchment areas. Higher lifecycle costs from long-distance pumping and operation of multiple WWPS, offsetting savings from decommissioning the WWTP. Requires complex approvals and coordination due to potential hydraulic connectivity impacts at Silver Creek. Greater construction complexity and disruption due to new WWPS, forcemain, and decommissioning activities. 	✔ Carried Forward

Alternatives 1 and 2 were screened out since they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

As such, Alternatives 3 and 4 were carried forward for detailed evaluation. Both alternatives offer potential improvements to system performance and service levels; however, Alternative 3 was carried forward as the preferred servicing strategy due to the inherent challenges of eliminating an in-service wastewater treatment plant. Although Alternative 4 will address some of the operational challenges associated with low-flow and high-strength influent, the strategy would result in potential downstream capacity impacts, substantial permitting, increased emissions and energy consumption due to continuous pumping, and higher construction complexity.

In contrast, Alternative 3 makes use of the existing infrastructure, avoids triggering upgrades to downstream infrastructure, and minimizes approvals and construction impacts. While targeted capital investment is required to address process improvements, this alternative provides a constructible, cost-effective, and environmentally responsible solution that supports continued service delivery within the existing footprint. As such, Alternative 3 was carried forward as the preferred alternative. The detailed strategy evaluation table for this assessment is provided in **Appendix 4A**.

5.3.1.3 Mid-Halton Wastewater Treatment Plant

As previously discussed in Section 4.4.1.3, the existing and committed treatment capacity at the Mid-Halton WWTP will not be sufficient to support projected growth to 2051. This assessment is inclusive of the originally planned expansion of the plant from 125 ML/d to 175 ML/d which was subsequently increased to 195 ML/d through the ongoing MCEA study. However, even the revised increase in capacity remains insufficient to meet the 2051 projected growth. Based on flow projections, 90% of the expanded capacity to 195 ML/d will be exceeded by approximately 2031; further emphasizing the need for additional treatment capacity to service future growth to 2051.

The Do Nothing and Limit Growth options were screened out in the evaluation process since they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Expansion of the Mid-Halton WWTP builds on the wastewater servicing strategy established in the Sustainable Halton Master Plan, which directed greenfield growth across the Region to the Mid-Halton WWTP. This strategy remains valid and forms the basis for long-term servicing of the treatment plant service area. The Mid-Halton WWTP expansion will be required to accommodate continued growth, including flows from new development areas and planned system diversions.

The expansion strategy considers all planned and potential diversions to the plant and has been developed as a coordinated, multi-stage approach. To support growth to 2051, the Mid-Halton WWTP will require three sequential capacity expansions, as summarized below:

- Expansion from 125 ML/d to 195 ML/d (Updated capacity expansion based on the current EA)
- Expansion from 195 ML/d to 250 ML/d
- Expansion from 250 ML/d to 350 ML/d

The scope and timing of the capacity expansions will be further refined through subsequent studies and continuous monitoring to confirm project timing needs and the appropriate scale of the proposed expansion.

Figure 13 illustrates the wastewater flow forecast for the Mid-Halton WWTP, including committed and proposed capacity increases based on the preferred servicing strategy.

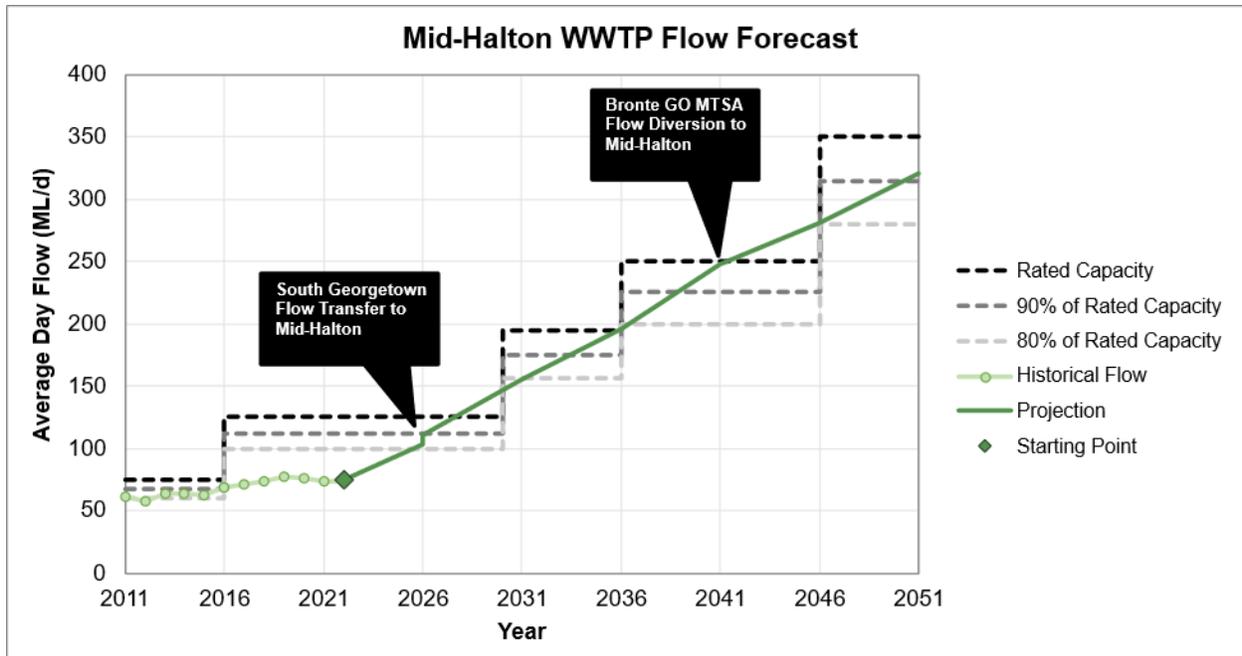


Figure 13 – Wastewater Flow Forecast – Mid-Halton Wastewater Treatment Plant

5.3.1.4 Oakville Southeast Wastewater Treatment Plant

As previously discussed in Section 4.4.1.4, existing treatment capacity at the Oakville Southeast WWTP is sufficient to accommodate projected growth to 2051. In accordance with the servicing strategy established in the Sustainable Halton Master Plan, the existing drainage area will continue to be serviced by the current plant, and no flow diversions are proposed.

Current projections indicate that the 80% threshold will be approached shortly before 2046. Although the existing rated capacity is expected to meet the demands of the 2051 horizon, this trend highlights the importance of continued long-term flow monitoring to support proactive servicing and infrastructure planning at the Oakville Southeast WWTP. Should future growth uptake or flow patterns accelerate beyond current projections, the Region may consider future expansion needs through a subsequent Master Plan or separate study.

Figure 14 presents the wastewater flow forecast for the Oakville Southeast WWTP.

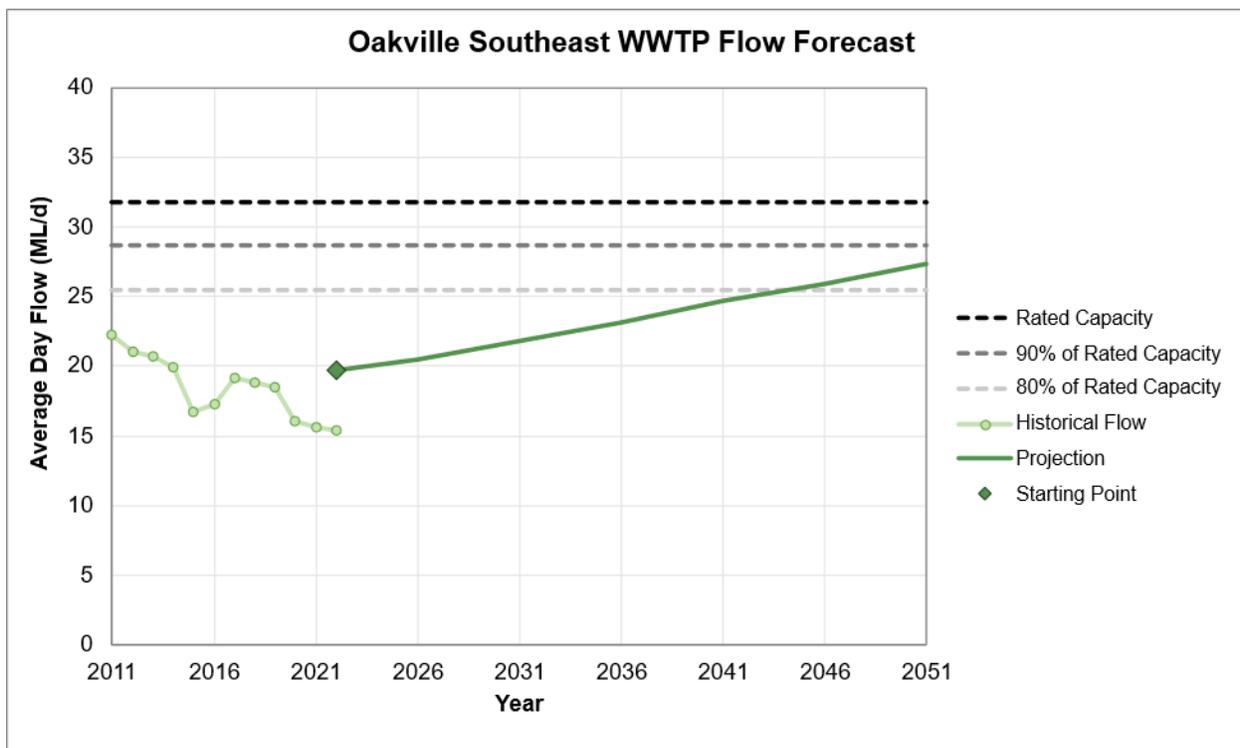


Figure 14 – Wastewater Flow Forecast – Oakville Southeast Wastewater Treatment Plant

5.3.1.5 Oakville Southwest Wastewater Treatment Plant

As previously discussed in Section 4.4.1.5, the existing treatment capacity at the Oakville Southwest WWTP will not be sufficient to support projected growth to 2051. In line with the servicing strategy outlined in the Sustainable Halton Master Plan, the existing drainage area is expected to continue discharging to the Oakville Southwest WWTP, with the exception of the Bronte GO MTSA.

Through the IMP a strategy has been developed to divert the Bronte GO MTSA flow from the Oakville Southwest WWTP to the Mid-Halton WWTP in order to reduce capacity constraints in the downstream linear system. While this diversion alleviates constraints along the conveyance network, it does not resolve capacity limitations at the Oakville Southwest WWTP. As such, the IMP recommends expansion of the plant to accommodate projected growth and maintain the levels of service objectives. Additional details regarding the Bronte GO MTSA flow diversion strategy are provided in Section 5.3.2.6 of this report.

Based on the current flow projections, average daily flows to the Oakville Southwest WWTP are anticipated to reach the Region's planning threshold of 80% of rated capacity prior to 2031, with the 90% implementation threshold potentially occurring in the period leading up to 2041. Although the analysis indicates that an expansion will be required in 2041 to accommodate the anticipated growth to 2051, the recent historical flow patterns show a gradual declining trend in the average daily flows at the plant. This indicates that the additional capacity requirements may be later than currently forecasted, should this trend persist.

The IMP proposed expansion of the Oakville Southwest WWTP from 45 ML/d to 60 ML/d. At this time, it is recommended that the Region continue long-term flow monitoring at the Oakville Southwest WWTP to confirm whether the projected timing of the Bronte GO MTSA diversion project and the treatment plant expansion project align with observed system performance. This monitoring approach will allow the Region to refine the project schedules as updated flow data, development uptake, and local servicing conditions evolve.

Figure 15 presents the wastewater flow forecast for the Oakville Southwest WWTP including the planned and proposed capacity expansion based on the preferred servicing strategy.

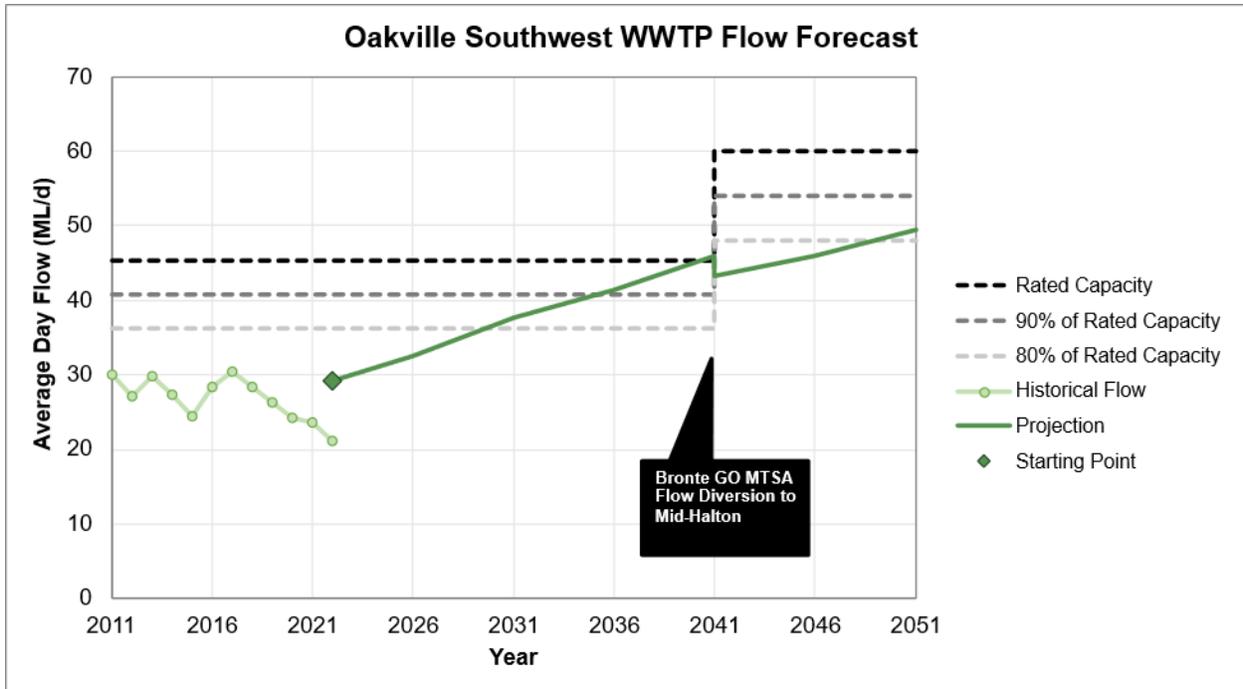


Figure 15 – Wastewater Flow Forecast – Oakville Southwest Wastewater Treatment Plant

5.3.1.6 Skyway Wastewater Treatment Plant

As previously discussed in Section 4.4.1.6, the existing treatment capacity at the Burlington Skyway WWTP will not be sufficient to accommodate projected growth within the 2051 planning horizon. Flow projections indicate that average daily flows will reach 80% of the plant's rated capacity by 2026 and 90% by 2031, triggering the need for planning and implementation of additional capacity within the near-term.

The Do Nothing and Limit Growth alternatives were screened out in the evaluation process, as they do not address the identified capacity constraints or support planned growth within the Region. Expansion of the existing Skyway WWTP builds on the wastewater servicing strategy established in the Sustainable Halton Master Plan, which identified continued servicing of the existing drainage area through the Skyway plant. This strategy remains valid and forms the basis for long-term servicing for the City of Burlington.

Due to the physical proximity and technical interdependencies between the inlet sewer and treatment plant expansion works, the IMP recommends assessing the feasibility of integrating the inlet sewer twinning and the plant upgrades together.

The expansion of the plant to 170 ML/d will be required to accommodate continued growth within the plant's service area and maintain the Region's levels of service objectives. This approach supports long-term growth planning while maximizing use of existing infrastructure and aligning with the vision and servicing principles of the IMP. It is recommended that the Region continue long-term monitoring of influent flow data at this facility to enable adjustment of project scheduling in response to observed growth trends and flow pattern variations.

Figure 16 presents the wastewater flow forecast for the Skyway WWTP including the planned and proposed capacity expansion based on the preferred servicing strategy.

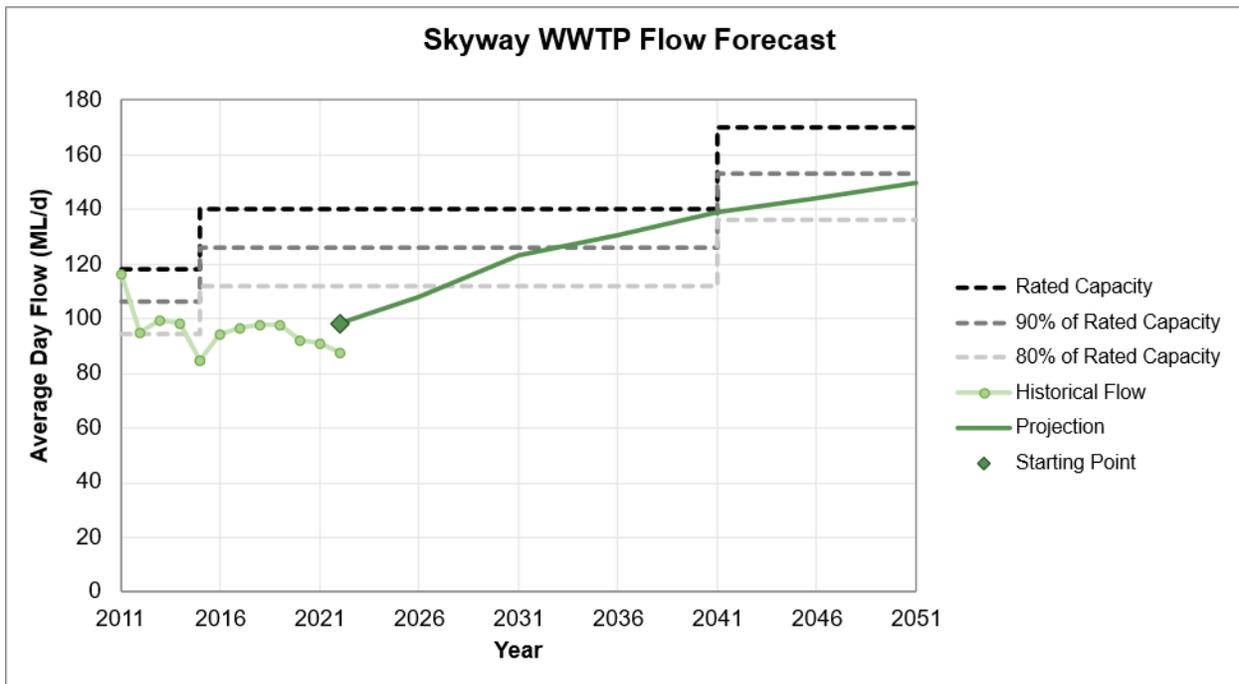


Figure 16 – Wastewater Flow Forecast – Skyway Wastewater Treatment Plant

5.3.2 Focus Areas Servicing Solutions

The Region's wastewater system is a complex system with multiple components and service areas. In addition to the Treatment Plant Expansion Concepts (Section 5.3.1), the IMP outlines servicing solutions in focus areas where key components of the system are reviewed, and the preferred servicing solutions are identified. Collectively, the treatment plant expansion concepts in conjunction with the focus area servicing solutions form the overall wastewater servicing strategy for the Region to service growth to 2051.

As part of the evaluation of the alternatives for each focus area, the IMP explored all applicable alternatives, including the Do Nothing and Limit growth alternatives. These two alternatives were screened out in the early stages as they do not address the capacity constraints or support planned growth within the Region.

The following sections summarize key aspects of the wastewater servicing solutions by focus area. In cases where a full comparative detailed evaluation of alternatives was needed, these are provided in **Appendix 4A**.

5.3.2.2 Burlington

Burlington East Sanitary Trunk Sewer (BEAST)

The Burlington East drainage area, located east of the Queen Elizabeth Way (QEW), is generally divided into two distinct drainage zones north and south of the Centennial Bikeway hydro corridor. Areas to the north drain southerly by gravity to the existing trunk sewer located along the hydro corridor, beginning at Appleby Line. Areas to the south drain to seven (7) WWPSs, which pump flow northward to the same trunk sewer along the corridor. The trunk sewer then conveys flows to the Skyway WWTP.

As part of the WWPS capacity review, four of the seven stations were identified as having capacity constraints under existing and future peak wet weather flow conditions. While not fundamental to the overall strategy, the decommissioning of Pinedale pumping station may be enabled by certain strategies as an ancillary benefit. The decommissioning of Pinedale pumping station and diversion of flows through Cherry Hill Crescent/White Pines Drive would facilitate upgrades of constrained infrastructure along this alignment. The potential benefits of decommissioning Pinedale pumping station as it applies to each strategy are provided in detailed evaluation tables in **Appendix 4A**.

The Region has completed several studies in this area over recent years, and the findings have been further evaluated and refined through the IMP. The IMP considered the following four wastewater servicing strategies for the BEAST area:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Increase capacity of existing WWPSs
- Alternative 4 – Deep gravity sewer along Lakeshore Road and decommission all seven (7) WWPS
- Alternative 5 – Decommission some WWPSs and upgrade the Elizabeth Gardens, Roseland, and Junction WWPS

Table 12 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 18** presenting the range of wastewater servicing alternatives considered through the evaluation process.

Table 12 – Wastewater Servicing Strategy Advantages and Disadvantages for BEAST

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP's vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP's vision and considerations. 	<p>✘ Screened Out</p>
3. Increase capacity of existing WWPSs	<ul style="list-style-type: none"> Localized upgrades to existing WWPS, minimizing construction footprint and disruption. Lower staging and throwaway costs, as upgrades can be implemented on a station-by-station basis. Maximizes use of existing infrastructure. Supports phased growth by enabling capacity increases at individual stations as needed. 	<ul style="list-style-type: none"> Maintains all existing WWPSs. Constructability challenges at constrained sites (e.g., Paletta, Bromley). No reduction in long-term noise, odour, or emissions from WWPS operation. Does not support potential decommissioning of Pinedale WWPS. 	<p>✔ Carried Forward</p>
4. Deep gravity sewer along Lakeshore Road and decommissioning of all seven (7) WWPS	<ul style="list-style-type: none"> Eliminates all WWPSs. Reduces long-term operational costs and emissions from WWPS operation. Supports potential decommissioning of Pinedale WWPS. 	<ul style="list-style-type: none"> Highest capital cost and most complex implementation due to deep trunk sewer construction. Extensive construction impacts along Lakeshore Road, affecting traffic, residents and businesses. High staging/throwaway costs for interim upgrades to maintain operations during construction. Potential odour issues from low flows in the deep trunk sewer and existing hydro corridor. 	<p>✔ Carried Forward</p>
5. Decommissioning of some WWPSs and upgrading Elizabeth Gardens (EG), Roseland, and Junction WWPS	<ul style="list-style-type: none"> Decommissions four (4) pumping stations. Provides phased implementation opportunities, aligning with growth and funding. Shorter deep trunk sewer extent than Alternative 4, reducing construction complexity and community impacts during construction. Supports potential decommissioning of Pinedale WWPS. 	<ul style="list-style-type: none"> Retains three (3) pumping stations. Property constraints at the Elizabeth Gardens WWPS site. Some construction impacts along Lakeshore Road and Burloak Drive. Potential odour issues from low flows in the trunk sewer, though less than Alternative 4. 	<p>✔ Carried Forward</p>

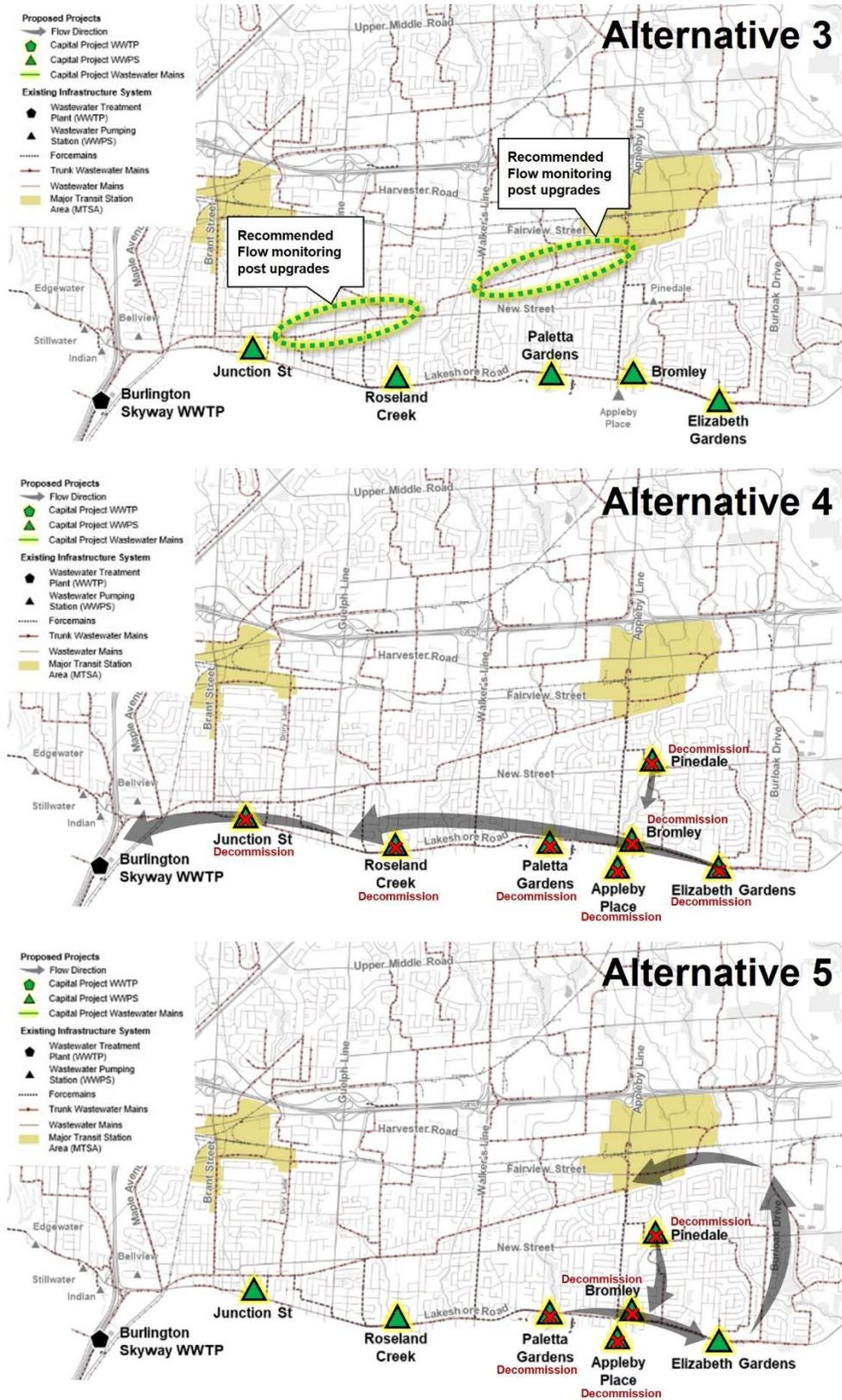


Figure 18 – Focus Area Servicing Solutions – BEAST Servicing Alternatives

Alternatives 1 and 2 were screened out early in the evaluation process as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Following a detailed evaluation of the remaining servicing strategies, it was determined that Alternative 5 – Decommissioning of some WWPSs and upgrading Elizabeth Gardens (EG), Roseland, and Junction WWPS – is the preferred servicing strategy. Alternative 5 offers a balanced approach that addresses long-term system needs while minimizing disruption and maximizing implementation flexibility. This alternative enables the decommissioning of several aging pumping stations located in constrained areas, thereby improving system resiliency and reducing operational risks.

Although Alternative 3 (capacity upgrades to existing WWPSs) provides the lowest capital cost and least construction disruption, maintaining all pump stations requires extensive operational coordination during extreme wet weather events and emergency conditions as well as long-term operational challenges, including sites with limited potential for future expansions (if required). Furthermore, this alternative would not reduce potential noise and odour impacts from pump station operation within established residential neighbourhoods. Eliminating these facilities would improve community aesthetics and enhance overall system resiliency, objectives not achieved under Alternative 3.

Conversely, Alternative 4 would achieve the highest degree of improvement by eliminating the pump stations and solely conveying flows via a deep gravity trunk sewer. However, this option presents many challenges including high capital costs, complex construction, and extensive disruption to residents, traffic, and businesses along Lakeshore Road, which in turn make this solution most difficult to implement. The long and deep trunk sewer would require multiple shaft sites and prolonged construction, resulting in substantial community impacts

Alternative 5 successfully integrates the strengths of both approaches while mitigating their respective drawbacks. Decommissioning four (4) aging pumping stations and consolidating flows to a larger upgraded Elizabeth Gardens pumping station improves system capacity and reliability while reducing operational and maintenance efforts. Consolidating flows to one pumping station improves energy efficiency, reduces long-term operational emissions, and provides a resilient strategy that is adaptable to future climate impacts.

There are challenges associated with upgrading the two other remaining facilities (Roseland and Junction WWPS); however, these impacts are generally localized. With the reduced length of deep trunk sewer, there are lowered construction complexities compared to Alternative 4, which enhances the technical feasibility and implementation flexibility of this alternative. Furthermore, this alternative supports phased growth by allowing upgrades and flow diversions to be implemented in stages. The phased decommissioning of the stations and the timing of capacity upgrades at the Elizabeth Gardens pumping stations can be aligned with growth, system condition, and available funding, providing greater flexibility than Alternative 4.

Both Alternatives 4 and 5 enable the decommissioning of the Pinedale pumping stations. Although this station was not flagged with potential capacity constraints, the addition of a deep trunk sewer (Alternatives 4 and 5) enables its decommissioning. This is considered as ancillary benefit to both alternatives, with implementation considered as optional.

While Alternative 5 retains some reliance on existing stations, it avoids the extensive disruption and high costs associated with the constructing a deep trunk sewer and provides greater long-term benefits compared to Alternative 3. Therefore, Alternative 5 was carried forward as the preferred strategy. **Figure 19** presents the preferred wastewater servicing strategy selected based on the evaluation outcomes.

The detailed strategy evaluation table for this assessment is presented in **Appendix 4A**.

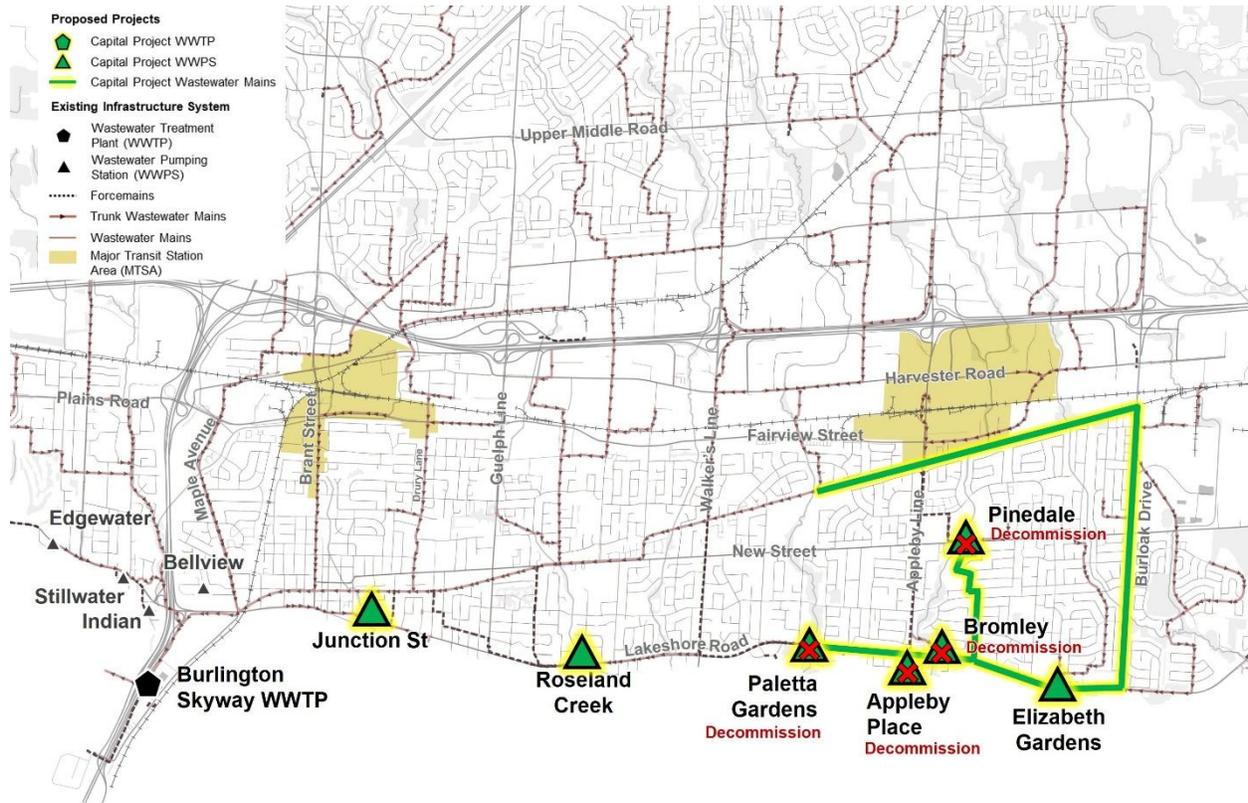


Figure 19 – Focus Area Servicing Solutions – BEAST Preferred Strategy

Drury Lane and Brant Street Trunk Sewer upgrades

The trunk sewer along Brenda Crescent, Phyllis Street, and Drury Lane has been identified as capacity constrained under existing and future peak wet weather flow conditions. This infrastructure is located within a designated high-growth area, the Burlington GO MTSA, further reinforcing the need for a servicing solution.

Due to elevation differences, multiple railway crossings, and downstream constraints along the Brant Street trunk sewer, there are limited opportunities to divert flow to other areas in the wastewater system to alleviate system constraints. As a result, only three alternatives were identified for evaluation:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Linear Upgrades

Alternatives 1 and 2 were screened out in the evaluation process as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Alternative 3 was identified as the only feasible option. Under this strategy, sewer upsizing is proposed along Brenda Crescent and Phyllis Street to Drury Lane and continuing south on Drury Lane to the Waterfront Trail.

The IMP also considered opportunities to optimize system performance and reduce upgrade requirements elsewhere in the drainage area. Specifically, the additional conveyance capacity provided by the Drury Lane upgrades enables future flows from the Fairview Street corridor (east of the creek) to be diverted away from the Brant Street trunk sewer. Doing so reduces the flows to the Brant Street trunk sewer and reduces the overall length of trunk sewer upgrades required to support the future planned growth. Overall, this strategy optimizes system performance while supporting planned growth and redevelopment within the Burlington GO MTSA.

As such, the proposed upgrades as part of Alternative 3 are comprised of two components as follows:

- A) Sewer upgrades along Brenda Crescent and Phyllis Street to Drury Lane and along Drury Lane to the Waterfront Trail; and,
- B) Sewer upgrades along Brant Street from Blairholm Avenue to Victoria Avenue.

Figure 20 shows the recommended projects to address growth within this area as part of Alternative 3.



Figure 20 – Focus Area Servicing Solution – Drury Lane and Brant Street Trunk Sewer Upgrades Servicing Preferred Strategy (Alternative 3)

North Service Road and Leighland Road Upgrades

A significant area of planned growth (Brant Commercial Centre) has been identified north of the Queen Elizabeth Way (QEW) between Highway 407 and Brant Street. To support this growth, a connection to the existing trunk sewer that runs parallel to Highway 407 and discharges to Glendor Avenue would be required.

The assessment of the existing wastewater infrastructure indicated that this trunk sewer is capacity constrained under existing and future peak wet weather flow conditions. The addition of future flows from this growth area would further exacerbate these constraints. As a result, a range of servicing alternatives were evaluated to identify a technically and operationally feasible long-term solution:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Twinning of the existing sewer within an easement (under the QEW)
- Alternative 4 – Diversion of flows through a new trunk sewer on North Service Road

Table 13 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 21** presenting the range of wastewater servicing alternatives considered through the evaluation process.

Table 13 – Wastewater Servicing Strategy Advantages and Disadvantages for North Service Rd and Leighland Rd Upgrades

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP’s vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP’s vision and considerations. 	<p>✘ Screened Out</p>
3. Twinning of the existing sewer within an easement (under the QEW)	<ul style="list-style-type: none"> Improves levels of service for both existing and future users. Maximizes use of existing conveyance infrastructure while adding resiliency through a secondary route. Construction activities concentrated within an existing corridor, which minimizes the extent of new land disturbance. Technically feasible; however, this alternative is more complex than Alternative 4. 	<ul style="list-style-type: none"> Does not support phased intensification, as benefits are only realized once the twinned sewer is fully commissioned. More constructability challenges due to highway crossings with constrained space near interchanges. Potential need for expanded easement limits, increasing coordination requirements. Provides limited integration with SOGR program, as it does not resolve capacity constraints along Leighland Road. 	<p>✓ Carried Forward</p>
4. Diversion of flows through a new sewer on North Service Road	<ul style="list-style-type: none"> Improves levels of service for both existing and future users. Supports phased intensification, as Leighland Road upgrades can proceed independently while the timing of new sewers on North Service Road can be aligned with growth. Provides capacity for growth and improved system performance downstream through proposed upgrades. Reduced construction complexity compared to Alternative 3, as the alignment largely follows existing ROW. Shorter highway crossing (east of Brant Street), reducing construction risks and complexity relative to Alternative 3. 	<ul style="list-style-type: none"> Higher initial and staging costs due to longer alignment. Moderate construction disruption, particularly in residential and commercial areas along the alignment. The increased length may result in greater upfront capital and staging costs. 	<p>✓ Carried Forward</p>

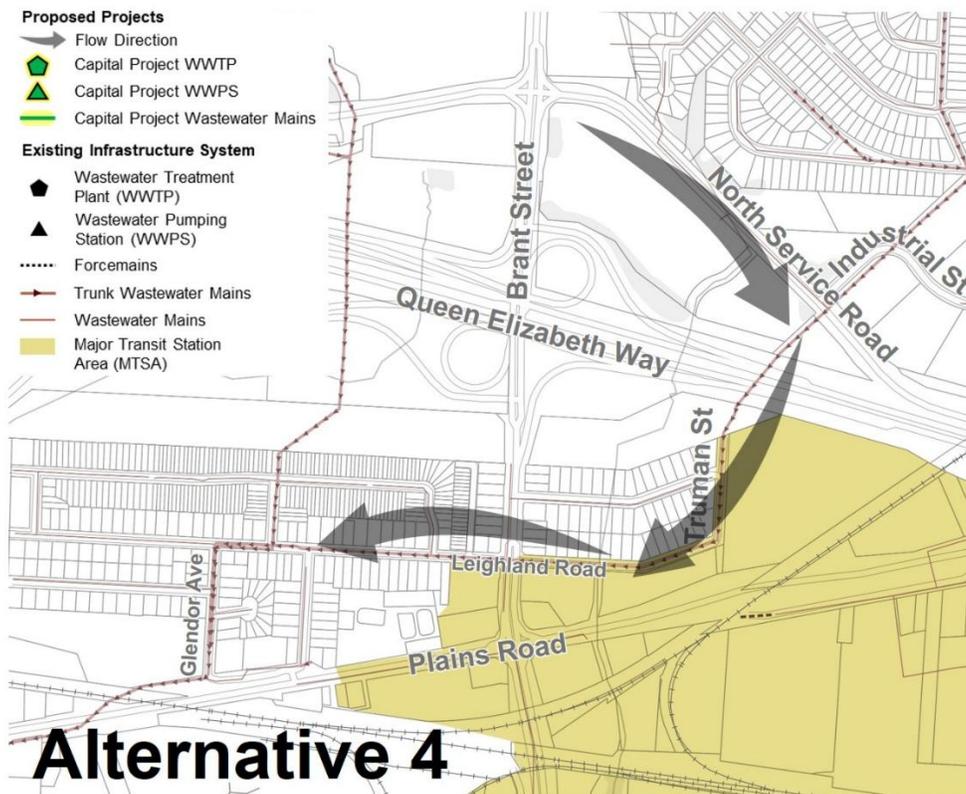
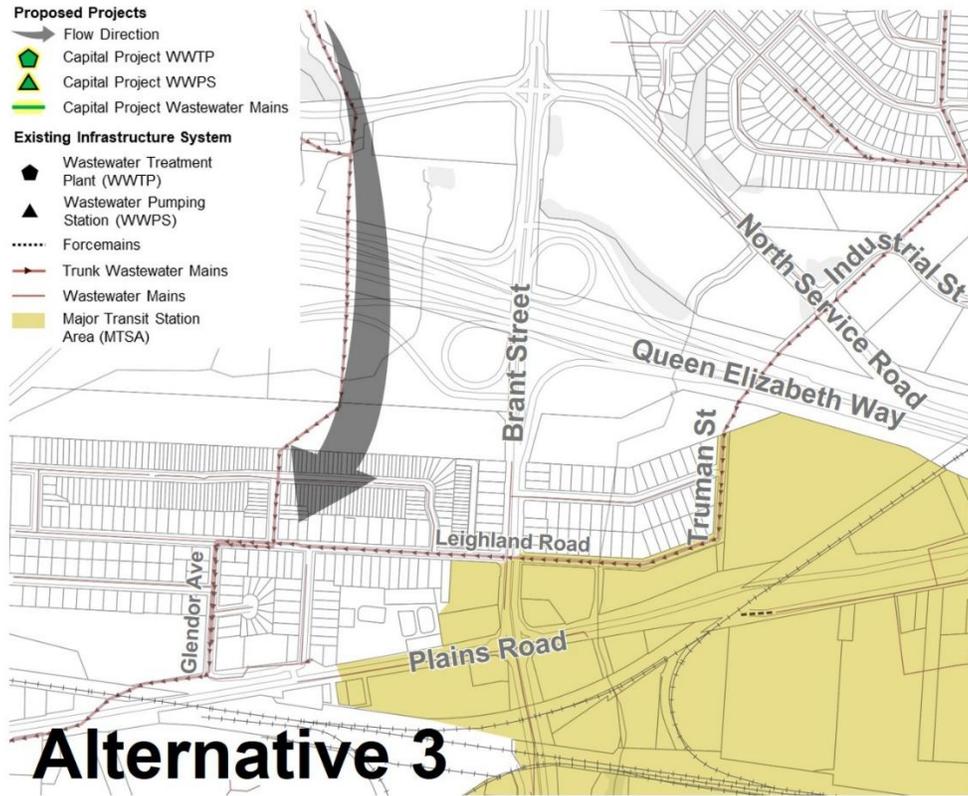


Figure 21 – Focus Area Servicing Solution – North Service Road and Leighland Road Servicing Alternatives

Alternatives 1 and 2 were screened out early in the evaluation process, as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP. The remaining alternatives were further evaluated to determine the preferred strategy.

The detailed evaluation identified Alternative 4, diversion of flows through a new trunk sewer on North Service Road, as the preferred servicing strategy, offering a more practical and technically feasible long-term solution. While both Alternatives 3 and 4 improve levels of service for existing and future users, Alternative 3 presents greater constructability challenges, most notably the need to install a new sewer beneath both Highway 403 and Highway 407 at the Brant Street interchange. The highway crossing required under Alternative 3 is longer and more complex than the crossing required under Alternative 4. The alignment of Alternative 4 remains within an existing municipal right-of-way with a shorter crossing of the QEW east of Brant Street, which reduces construction complexity and risk.

Alternative 4 also provides a clearer pathway for coordinated implementation. The required upgrades along Leighland Road can be advanced together with, or prior to, the diversion sewer on North Service Road. This flexibility provides the opportunity to align capital projects more effectively with growth timing and supports a structured rollout of improvements without creating downstream constraints.

Overall, Alternative 4 represents a more technically feasible and strategically coordinated solution, minimizing construction complexity while maintaining consistency with the Region's servicing objectives. For these reasons, Alternative 4 is carried forward as the preferred servicing strategy. **Figure 22** presents the preferred wastewater servicing strategy selected based on the evaluation outcomes.

The detailed strategy evaluation table for this assessment is presented in **Appendix 4A**.

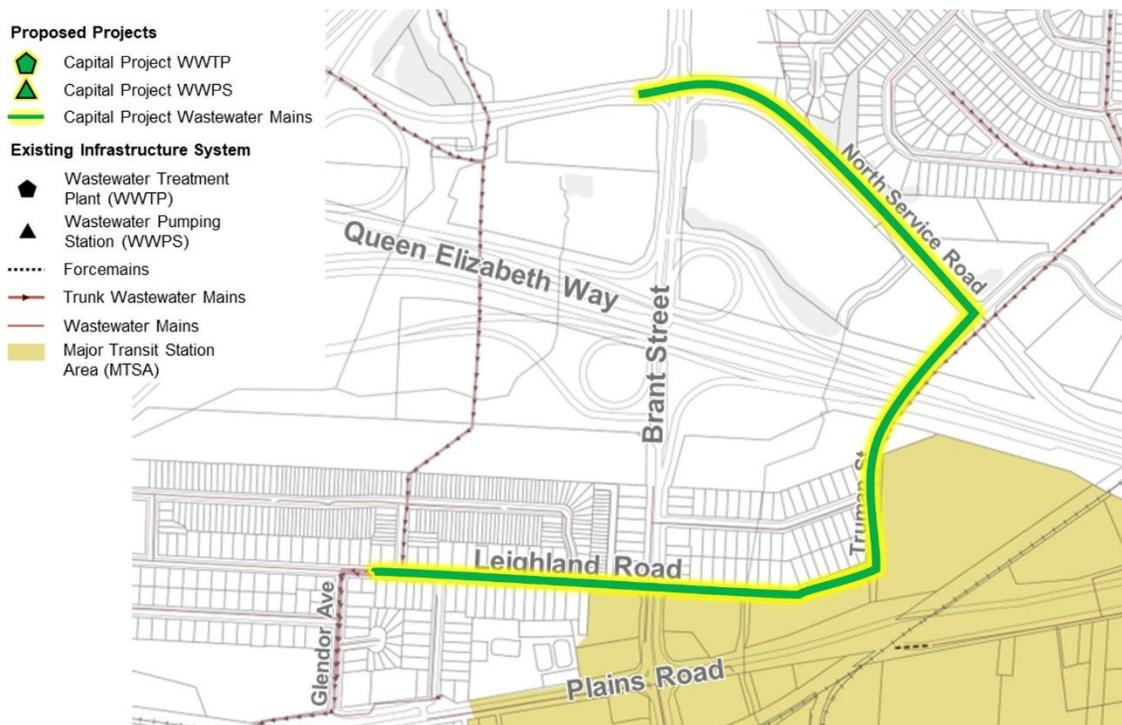


Figure 22 – Focus Area Servicing Solution – North Service Road and Leighland Road Preferred Strategy

Maple Trunk Sewer

The trunk sewers along Maple Avenue have been identified with capacity constraints under existing and future peak wet weather flow conditions, as outlined in Section 4.4.3. These constraints were previously assessed through the *Feasibility Assessment of the Two Trunk Sewer Alternatives (2024)*. The feasibility study evaluated a long list of potential solutions and carried forward two alternatives for detailed review:

- Option 1 – Construction of a new trunk sewer
- Option 2 – Upstream in-line storage system

The feasibility study recommended a new trunk sewer from Bonnie Court to Maple Crossing Boulevard, together with rehabilitation of the existing trunk sewer. With trunk flows diverted to the new sewer, the rehabilitated existing sewer would function as a local collector. This recommendation was based on hydraulic performance, constructability, and the ability to resolve capacity constraints in the vicinity.

As part of the IMP, the team reviewed and validated the preferred servicing strategy using the updated hydraulic model, which incorporated the 2051 JBPE growth projections. The IMP confirmed that the recommended trunk sewer provides sufficient capacity under peak wet weather flow conditions, alleviates capacity constraints, and does not introduce adverse impacts elsewhere in the system.

A summary of the validated servicing strategy is provided below:

- Construction of a new trunk sewer from approximately 150 metres south of Bonnie Court to Maple Crossing Boulevard.
- Relining of the existing trunk sewer along Maple Avenue and repurposing of the sewer to serve as a local collector between the CN Railway and Maple Crossing Boulevard.

Further refinements, such as optimizing sewer diameters, identifying constructability constraints, and evaluating opportunities to incorporate operational flexibility measures will be completed during detailed design.

Figure 23 presents the wastewater servicing strategy for the Maple Avenue Trunk Sewer.



Figure 23 – Focus Area Servicing Solution – Maple Avenue Trunk Sewer Servicing Preferred Strategy

North Aldershot

The North Aldershot area is located in west Burlington, adjacent to the Niagara Escarpment. The wastewater servicing strategy for this area was originally identified through the Sustainable Halton Master Plan and has since been revisited and refined based on the updated technical information provided in the *Eagle Heights Functional Servicing Report Amendment (2023)*.

The IMP has reviewed and confirmed the servicing approach provided in the Eagle Heights Functional Servicing Report, including the proposed sewer sizing for the area. The IMP carried forward the following proposed strategy from the Eagle Heights Functional Servicing Report:

- Proposed sewer with local connections (<300mm) to service North Aldershot community.

Figure 24 presents the wastewater servicing strategy for North Aldershot.

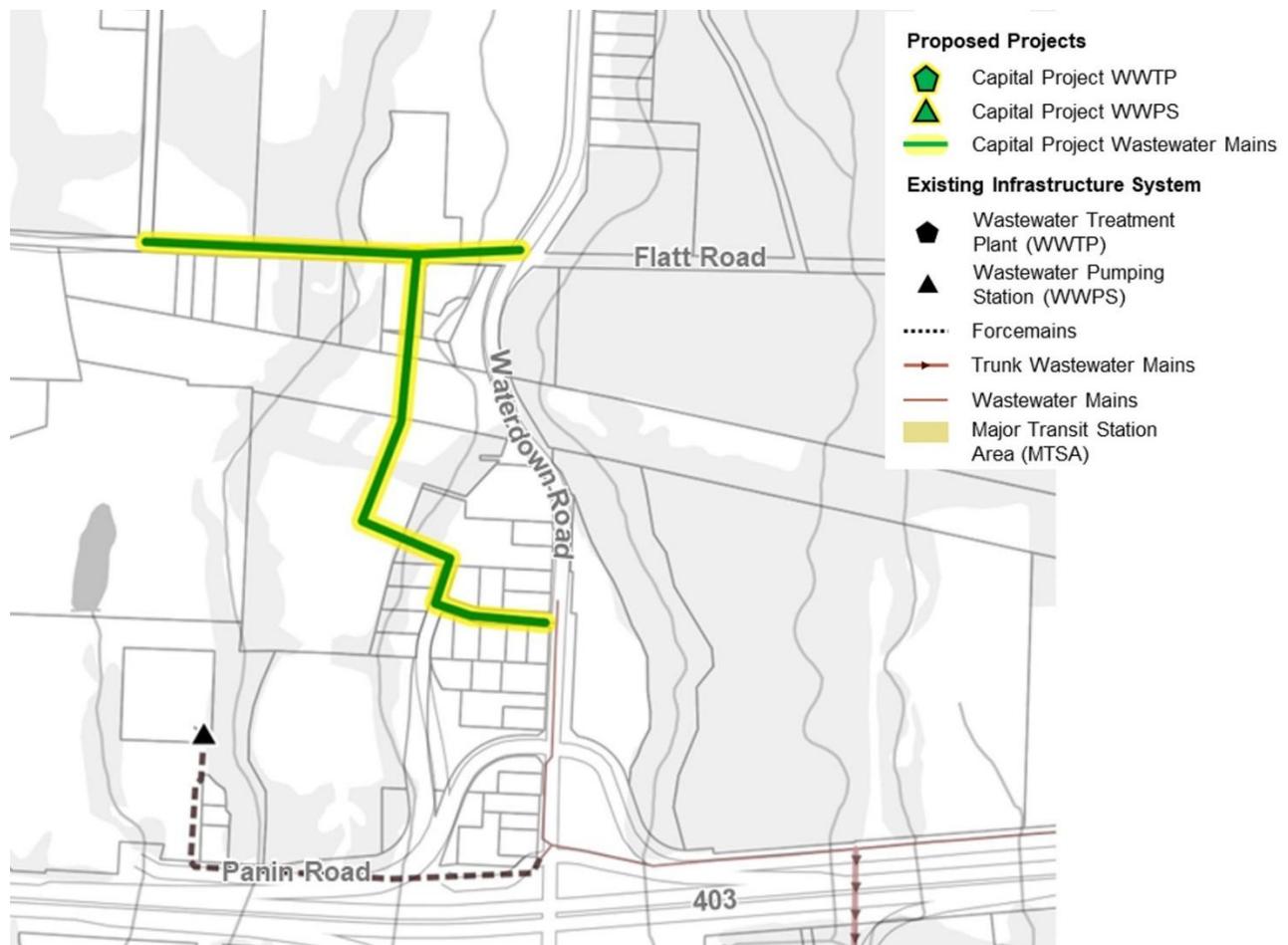


Figure 24 – Focus Area Servicing Solution – North Aldershot Servicing Strategy

Additional System Upgrades

Several wastewater system upgrades originally identified through the Sustainable Halton Master Plan have been further reviewed and refined as part of the IMP to support growth to 2051. These upgrades are intended to address capacity constraints and support planned development. The recommended projects, illustrated in **Figure 25**, include the following:

- A) Twinning of the inlet sewer to the Skyway WWTP: involves twinning the existing trunk sewer from Northshore Boulevard to the Skyway WWTP. The upgrade addresses capacity constraints along this segment of the sewer system. The project limits have been refined based on updated hydraulic modelling.
- B) Cooke Boulevard sewer: currently in the planning phase and includes the construction of a sewer along Cooke Boulevard, extending from Masonry Court to LaSalle Park Road.
- C) Aldershot Creek sewer: involves upsizing of the existing sewers on Lasalle Park Road from Fairwood Place West to Lasalle WWPS. This alignment was previously identified through the Sustainable Halton Master Plan, and was refined as per the recommendations of the *“Replacement, Rehabilitation or Relocation of the Aldershot Creek Wastewater Main Municipal Class Environmental Assessment”* study and carried forward by the IMP.

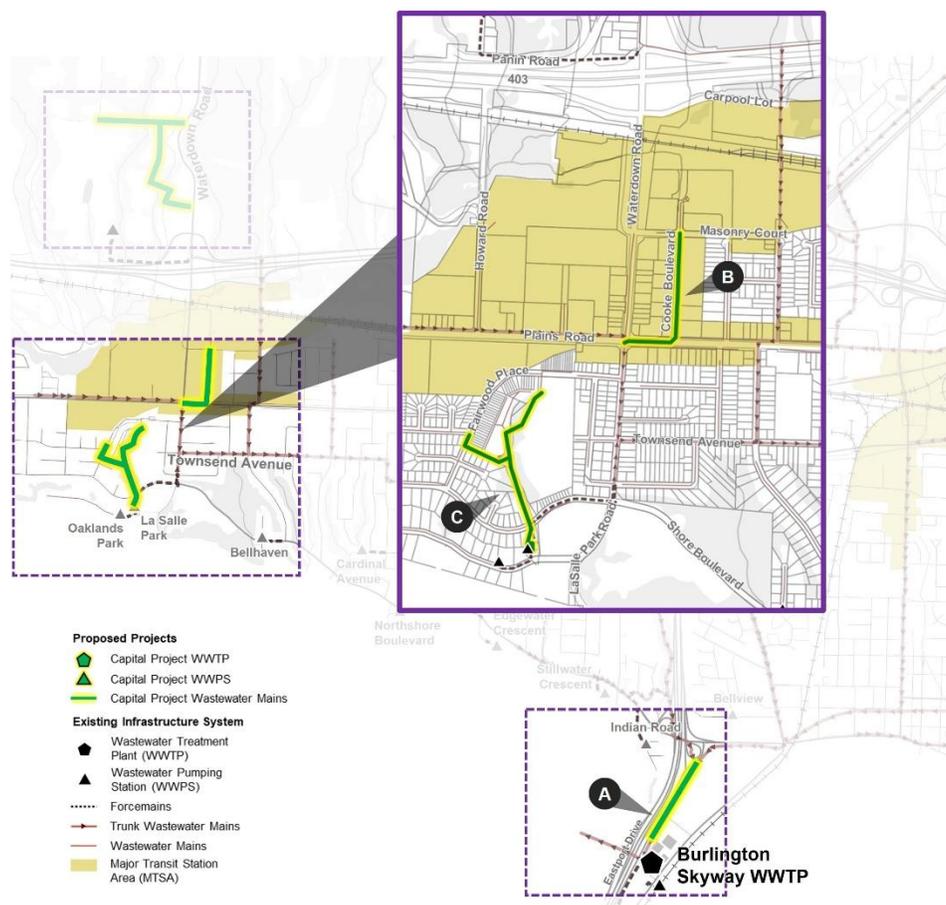


Figure 25 – Focus Area Servicing Solution – Additional System Upgrades

5.3.2.3 Georgetown

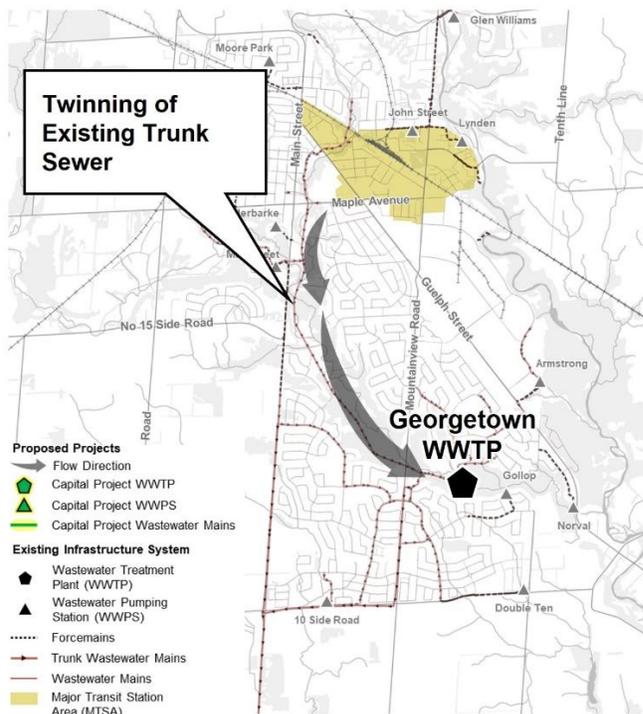
Silver Creek Trunk Sewer and Main Street WWPS

The Silver Creek trunk sewer is located in central Georgetown and serves as one of the primary conveyance routes for flows from the northern and western areas to the Georgetown WWTP. Capacity constraints have been identified in this trunk sewer under both existing and future peak wet weather flow conditions, warranting upgrades to accommodate growth to 2051.

Given that the existing infrastructure generally follows the Silver Creek valley, the IMP evaluated servicing options that address existing and future capacity needs while minimizing potential social and environmental impacts. The following wastewater servicing alternatives were considered through the evaluation process as shown in **Figure 26**:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Twinning of the existing trunk sewer
- Alternative 4 – Flow diversion to a New Main Street WWPS

Alternative 3



Alternative 4

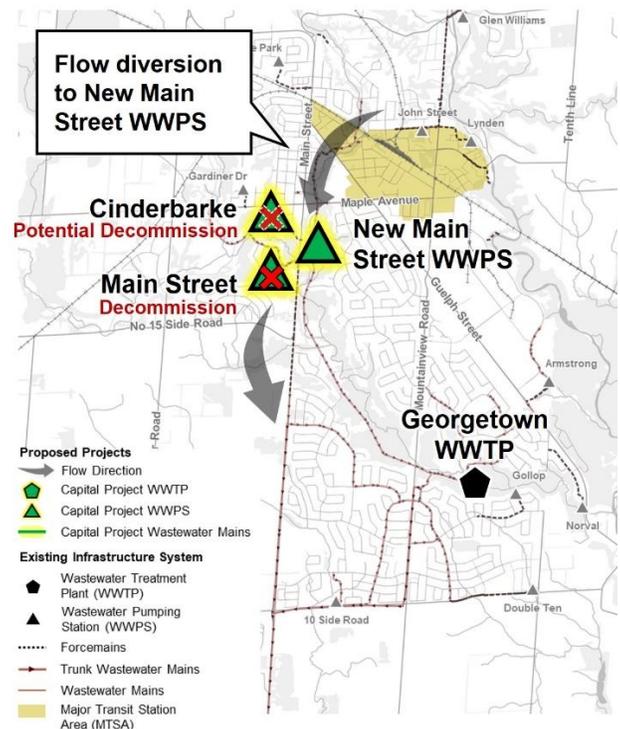


Figure 26 – Focus Area Servicing Solution – Silver Creek Trunk Sewer and Main Street WWPS Servicing Alternatives

Table 14 provides a high-level summary of the key advantages and disadvantages associated with each alternative.

Table 14 – Wastewater Servicing Strategy Advantages and Disadvantages for Silver Creek Trunk Sewer and Main Street WWPS

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP’s vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP’s vision and considerations. 	<p>✘ Screened Out</p>
3. Twinning of the existing trunk sewer	<ul style="list-style-type: none"> Gravity-based solution improves system redundancy and performance. Lower staging and throwaway costs compared to new WWPS. Minimizes road and utility crossings with construction within existing easement. Maximizes use of existing WWTP infrastructure. 	<ul style="list-style-type: none"> Constructability challenges due to work within the Silver Creek Valley corridor and proximity to the existing sewer. Retains both Main St and Cinderbarke WWPS, limiting operational efficiencies and continued long-term emissions. Higher lifecycle cost due to continued operation of two existing WWPSs and new linear infrastructure. Does not reduce potential odour/noise/visual impacts from existing WWPS in proximity with residential areas. 	<p>✔ Carried Forward</p>
4. Flow diversion to New Main Street WWPS	<ul style="list-style-type: none"> Improves system resilience and redundancy through new route and upstream diversion of flows. Enables decommissioning of Main St WWPS and potentially Cinderbarke WWPS, reducing long-term operational challenges. Offers improved visual and noise outcomes by potentially relocating the new WWPS away from residences. Lower long-term operational emissions through consolidation of WWPS infrastructure. Generally, more constructible, following municipal ROWs and potentially using Regionally owned land for the proposed WWPS. 	<ul style="list-style-type: none"> Increased road and utility conflicts during construction in ROW. Requires increased planning and operational coordination during emergency conditions. Higher upfront capital and staging costs due to new WWPS, trunk sewer, and forcemain. Requires extensive coordination with multiple authorities and road agencies. Does not fully utilize existing treatment capacity at Georgetown WWTP due to flow diversion. 	<p>✔ Carried Forward</p>

Alternatives 1 and 2 were screened out early in the evaluation process as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Alternative 3 involves constructing a new parallel trunk sewer along the existing Silver Creek alignment, providing additional conveyance capacity and system redundancy. However, construction along the existing alignment presents significant challenges, including constrained access, proximity to the existing sewer, difficult terrain, and greater disturbance within the Silver Creek valley corridor. Long-term maintenance is also more complex due to the confined corridor and limited separation between the twin sewers.

Alternative 4 proposes diverting flows from the constrained Silver Creek trunk sewer into a new trunk sewer located within the Main Street municipal right-of-way, extending from Park Avenue to a new Main Street WWPS near Cinderbarke Terrace (final location to be confirmed through a Schedule B Class EA). This new alignment allows construction of a relief pipe from the Silver Creek trunk sewer to the new system, improving conveyance capacity under peak wet weather flow conditions. Locating the new infrastructure entirely within municipal ROW enables use of standard construction methods and limits work within the valley corridor. This alternative also facilitates decommissioning the existing Main Street WWPS currently located within a residential neighbourhood. Thereby, improving community aesthetics and reducing long-term operational challenges. In addition, this strategy enables the potential future decommissioning of the Cinderbarke Terrace WWPS. By transitioning to a gravity-based conveyance to the new trunk sewer, long-term operational complexity and emissions are reduced, resulting in a more energy-efficient and climate resilient strategy.

While both Alternative 3 and Alternative 4 adequately address the existing capacity constraints, Alternative 4 provides a more resilient, technically feasible, and environmentally responsible long-term solution. Constructing new infrastructure within municipal ROWs avoids the complex terrain and environmental features associated with twinning the existing trunk sewer. Alternative 4 provides greater operational flexibilities and system redundancies through addition of an alternative conveyance route that supports the consolidation and potential decommissioning of aging pumping stations. Overall, Alternative 4 aligns more closely with the Region's servicing objectives and provides a balanced approach that enhances reliability and sustainability.

Figure 27 shows the preferred wastewater servicing strategy selected based on the evaluation outcomes. The detailed evaluation supporting this recommendation is provided in **Appendix 4A**.

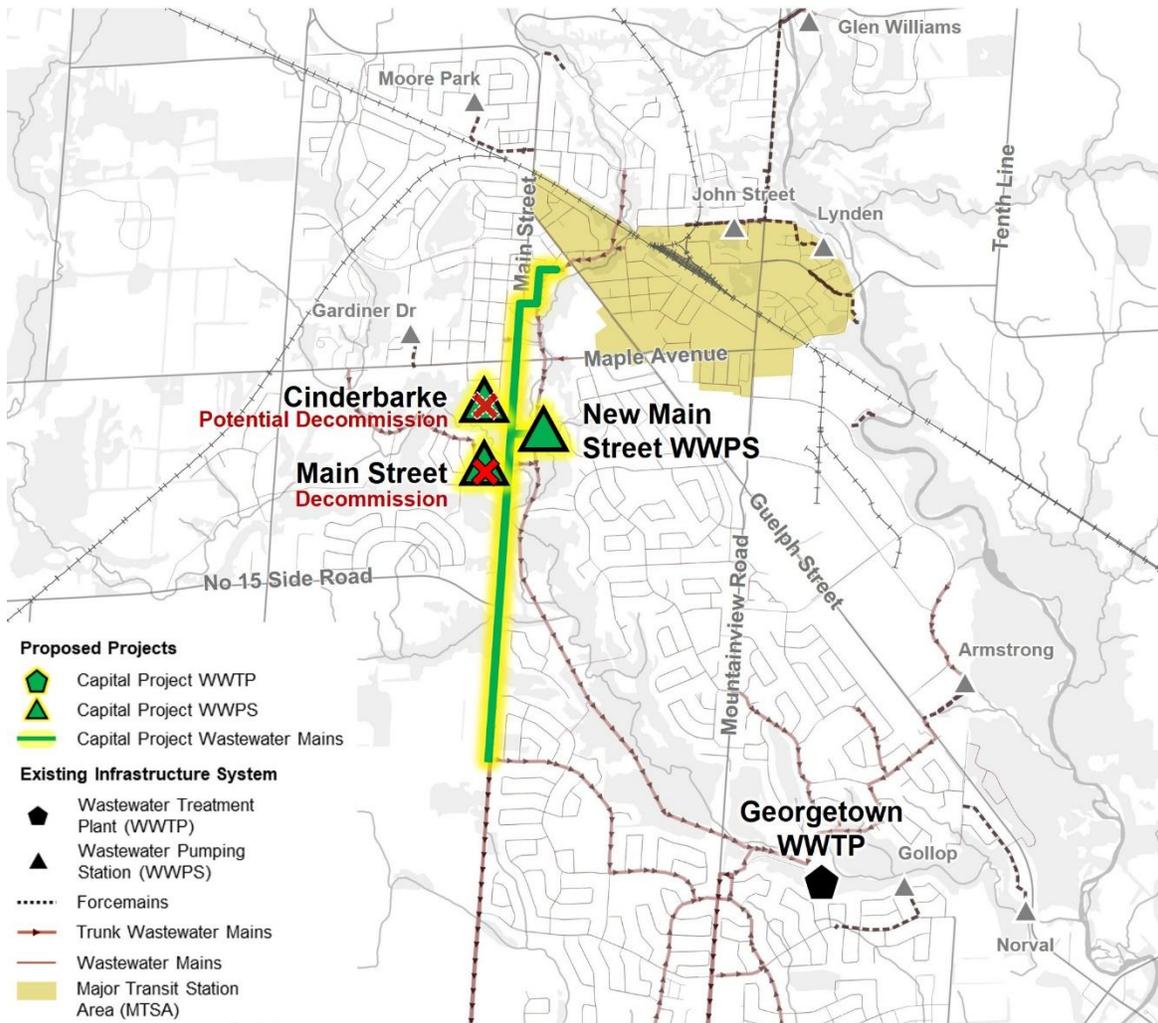


Figure 27 – Focus Area Servicing Solution – Silver Creek Trunk Sewer and Main Street WWPS Preferred Strategy

John Street WWPS

The John Street WWPS in Georgetown has been identified as having potential capacity constraints under future peak wet weather flow conditions, driven primarily by increased flows associated with projected growth in the service area. The Region is currently advancing a state-of-good-repair (SOGR) project at this pumping station to provide additional emergency storage.

As part of the IMP, opportunities to divert flows using existing infrastructure were assessed; however, no technically or operationally feasible alternatives were identified. Accordingly, capacity upgrades at the John Street WWPS have been identified as a longer-term requirement within the planning horizon. The specific scope including any potential downstream impacts as well as timing of these improvements will be refined through ongoing monitoring of flows and development activity within the drainage area.

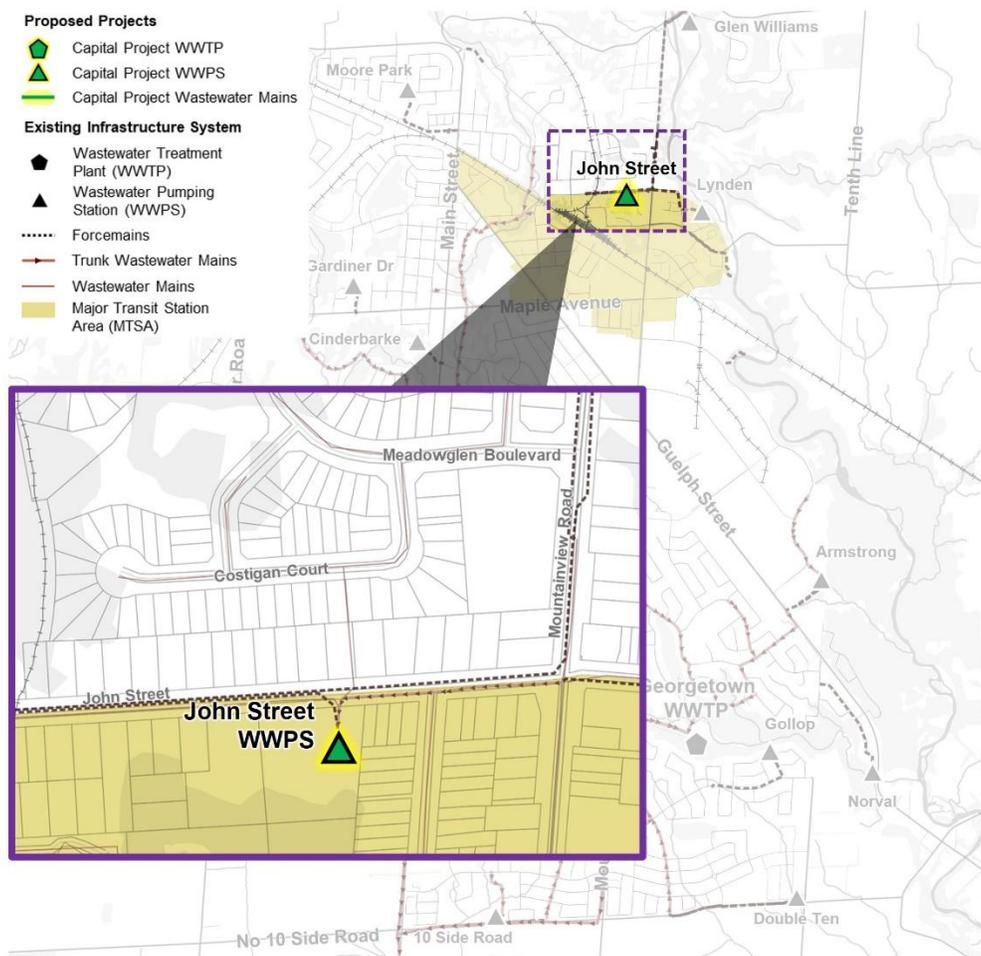


Figure 28 – Focus Area Servicing Solution – John Street WWPS Servicing Strategy

New Norval WWPS

The servicing strategy to accommodate projected growth at the southeastern limit of Georgetown was originally identified through the Sustainable Halton Master Plan. This strategy included a new wastewater pumping station (WWPS) and forcemain and fulfilled the requirements of a Schedule B project under the MCEA process at that time.

As part of the IMP, alternative servicing options were re-evaluated, including the potential for a deep gravity sewer connection to the newly constructed Eighth Line trunk sewer. However, this alternative was determined to be infeasible due to elevation and alignment constraints. As no other technically viable options were identified, the original strategy has been confirmed and carried forward by the IMP.

To support implementation, the Region is currently undertaking an amendment to the previously completed Schedule B Class EA to refine the final location of the WWPS. The recommended infrastructure improvements, as shown in **Figure 29**, include:

- A) New Wastewater Pumping Station on No. 10 Side Road in Norval.
- B) Twinned forcemain from Norval WWPS to Mountainview Road.

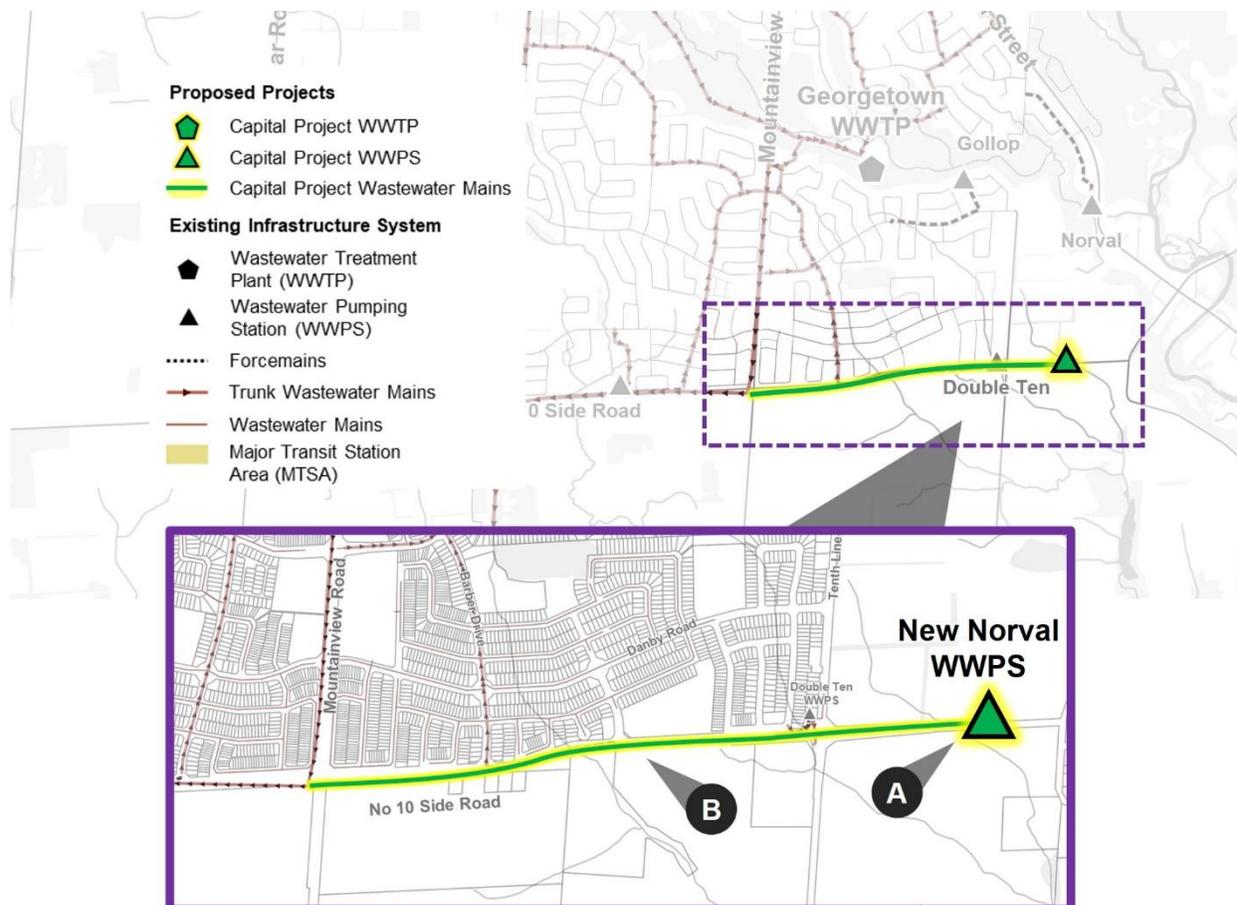


Figure 29 – Focus Area Servicing Solution – New Norval WWPS Servicing Strategy

5.3.2.4 Halton Hills 401 Corridor

Premier Gateway Employment Area Phase 2B

The Premier Gateway Employment Area is located within the Town of Halton Hills, forming part of the western GTA and Highway 401 economic corridor. Phase 2B of this area represents a significant component of the greenfield servicing strategy for the wastewater system. An Area Servicing Plan was completed in 2023 to guide wastewater infrastructure planning for Phase 2B, which generally encompasses the lands north of Steeles Avenue between Eighth Line and Winston Churchill Boulevard.

As part of the recommended servicing strategy, a new wastewater pumping station (Halton Hills WWPS #4) was proposed to convey flows from the eastern portions of the Phase 2B lands to the recently constructed Eighth Line trunk sewer. In support of this strategy, a new trunk sewer along Steeles Avenue is currently in the detailed design phase to provide the necessary connection to the Eighth Line trunk sewer. The alignments and design assumptions for the Steeles Avenue trunk sewer have been adopted and incorporated into the IMP.

In parallel, the Region has recently completed a Schedule B Class EA for the proposed Halton Hills WWPS #4. Based on the most recent information, the IMP has verified and carried forward the following projects, as shown in **Figure 30**:

- A) Construction of a new trunk sewer along Steeles Avenue from Tenth Line North to Winston Churchill Boulevard.
- B) Decommissioning of Halton Hills WWPS #3, with flow redirected to the Eighth Line trunk sewer and conversion of the existing site to a septage receiving facility.
- C) Construction of the new Halton Hills WWPS #4 located on Steeles Avenue west of Winston Churchill Boulevard.
- D) Construction of twin forcemains from the new Halton Hills WWPS #4 to Ninth Line.
- E) Construction of a new trunk sewer on Steeles Avenue from Ninth Line to Eighth Line.

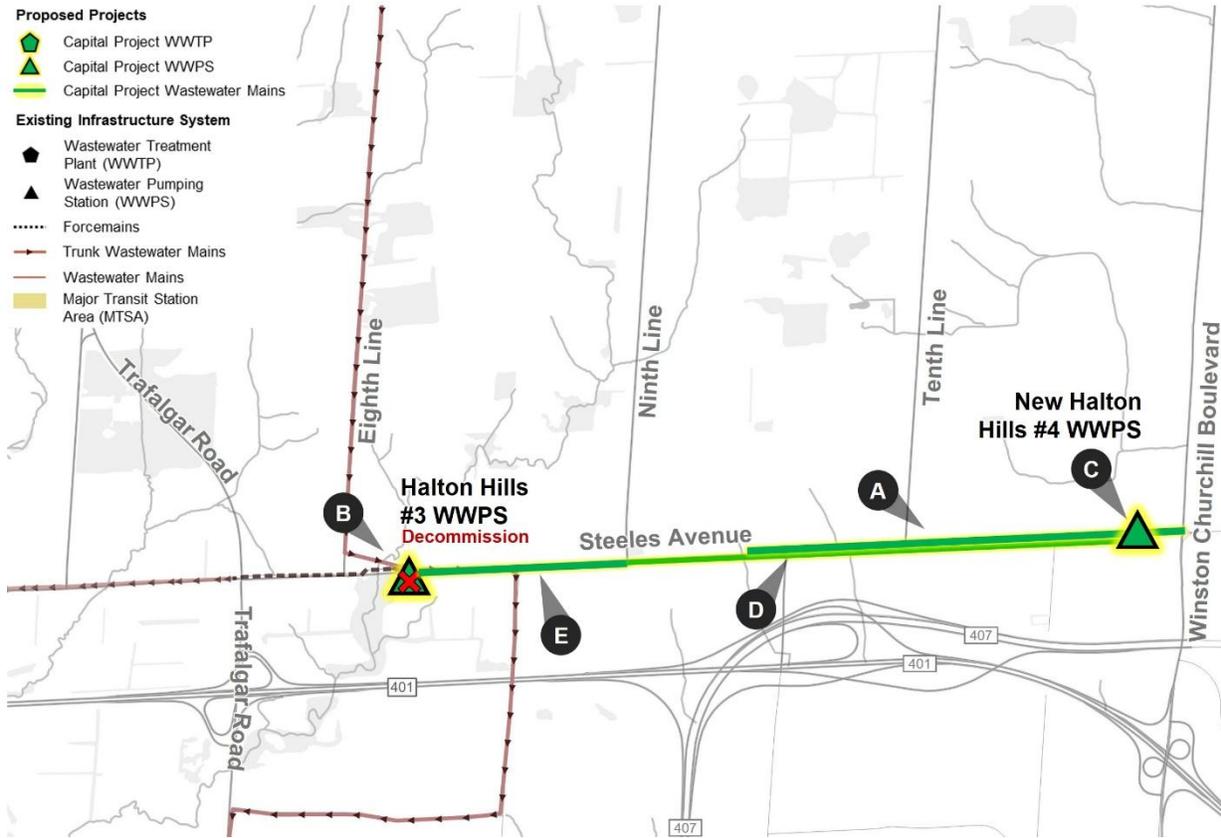


Figure 30 – Focus Area Servicing Solution – Premier Gateway Employment Area Servicing Strategy

5.3.2.5 Milton

Fulton WWPS and Downtown Milton

The Fulton WWPS is located in Downtown Milton at the site of the former Milton WWTP. The IMP identified hydraulic constraints at both the station and within the surrounding collection system, with these constraints expected to intensify under future peak wet weather flow conditions. Growth within the Milton GO MTSA – one of the Region’s major intensification areas – will further increase flows to this part of the system. As such, the IMP reviewed a range of servicing strategies, building on the recommendations of the Sustainable Halton Master Plan and subsequent regional initiatives aimed at improving servicing in the downtown area.

To address current and future constraints, the IMP recommends a servicing approach composed of several integrated elements, including:

- A) Sewer upgrades within the downtown system (previously identified in the Sustainable Halton Master Plan).
- B) Relief sewer along Fulton Street, from Oak Street to the Fulton WWPS.
- C) Equalization tank at the Fulton WWPS site.
- D) Comprehensive local area study.

The sewer upgrades previously identified through the Sustainable Halton Master Plan were reviewed against updated 2051 growth projections and refined through the IMP. Additional upgrades were also identified along Nipissing Road within the Milton GO MTSA and along Childs Drive and Oak Street based on updated hydraulic analysis.

To address capacity constraints in the downtown Milton area, the IMP recommends undertaking a comprehensive local area study. This study will take a holistic approach to evaluating localized constraints and developing targeted solutions. One potential solution identified through the IMP is a relief sewer along Fulton Street, from Oak Street to the Fulton WWPS, which would alleviate upstream surcharging and introduce additional system redundancy. The project scope and details of this relief sewer will be determined through the local study.

To further support performance at the Fulton WWPS under both existing and future peak wet weather flow conditions, the IMP also assessed mitigation strategies for the station itself. Construction of an equalization tank at the decommissioned WWTP site was identified as a viable measure to provide emergency storage and peak flow attenuation. Preliminary sizing has been completed; however, final design requirements will be confirmed through the local area study.

Overall, the projects identified through the IMP represent preliminary recommendations based on available system information and updated hydraulic analysis. The forthcoming local area study will be critical in refining the scope, alignment, sizing, and sequencing of these improvements to ensure they effectively address both local and system-wide servicing needs.

The recommended projects for the Fulton WWPS and Downtown Milton are presented in **Figure 31**.

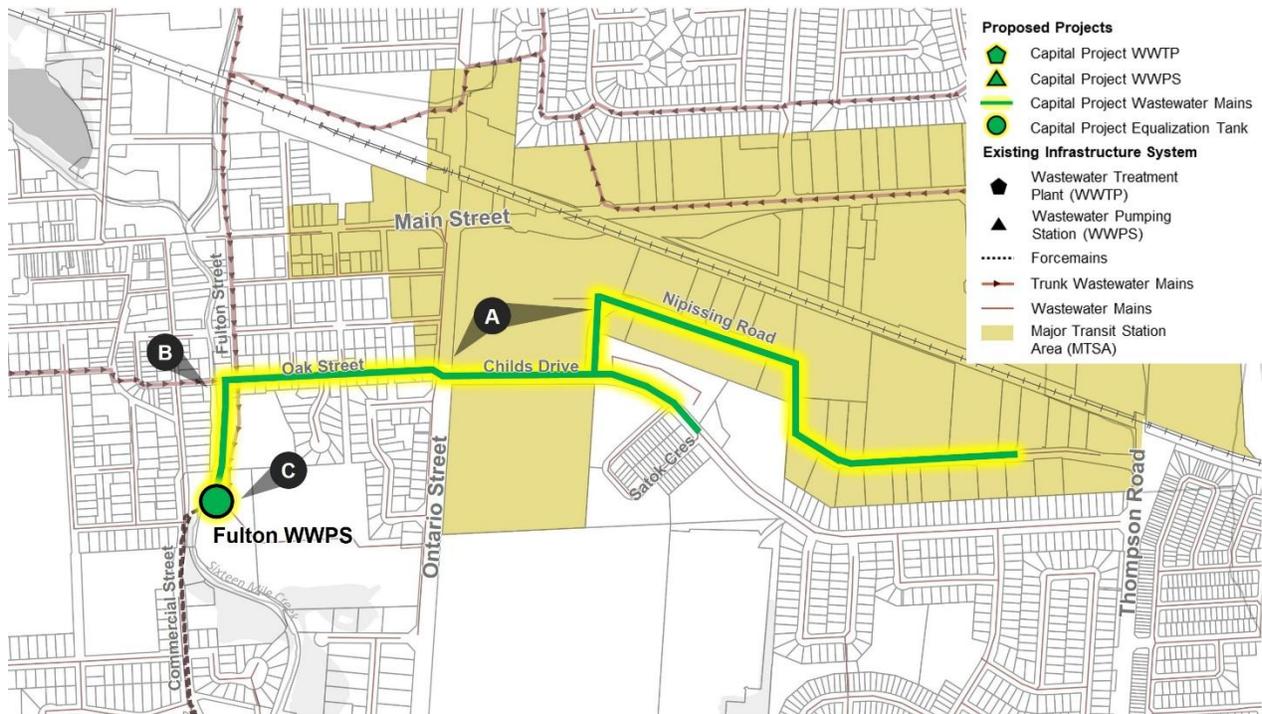


Figure 31 – Focus Area Servicing Solution – Fulton WWPS and Downtown Milton Servicing Strategy

Drumquin WWPS

The Drumquin WWPS is a recently constructed pumping station located in southeast Milton and forms part of the Eighth Line trunk sewer system. It is intended to service planned greenfield growth in the area. However, based on updated growth forecasts, capacity constraints are anticipated at this pumping station under future peak wet weather flow conditions.

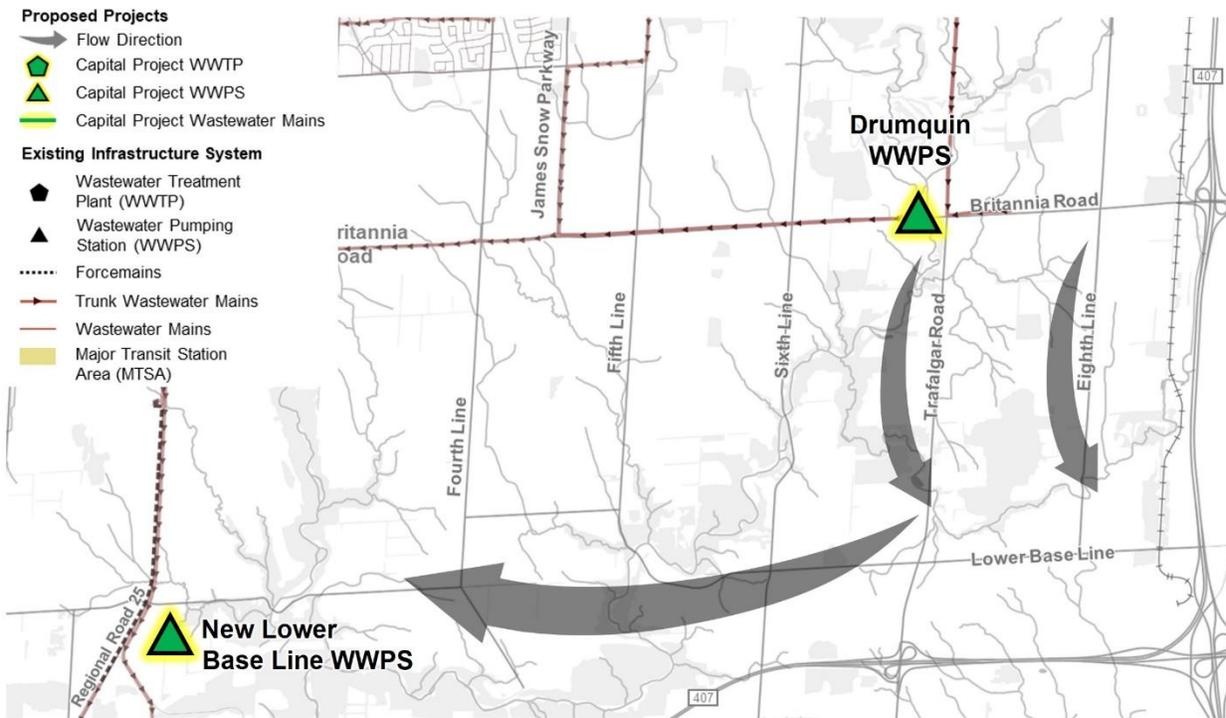
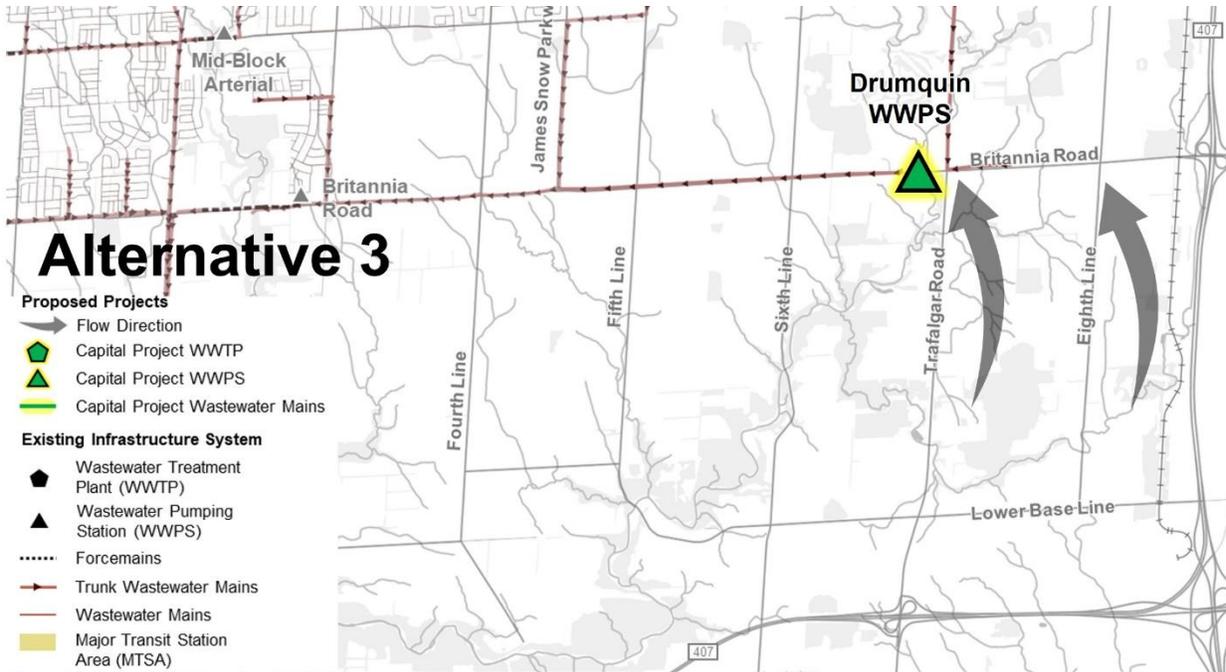
To address these projected constraints and accommodate long-term growth, the IMP evaluated a range of servicing alternatives, as summarized below:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Expand Drumquin’s servicing area further south for future Greenfield growth areas servicing north towards Drumquin WWPS
- Alternative 4 – Expand Lower Base Line WWPS’s servicing area further east for future Greenfield growth areas servicing south and west towards Lower Base Line WWPS

Table 15 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 32** presenting the range of wastewater servicing alternatives considered through the evaluation process.

Table 15 – Wastewater Servicing Strategy Advantages and Disadvantages for Drumquin WWPS

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP’s vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP’s vision and considerations. 	<p>✘ Screened Out</p>
3. Expand Drumquin WWPS’s servicing area further south for future Greenfield growth areas servicing north towards Drumquin WWPS	<ul style="list-style-type: none"> Makes use of a shorter sewer alignment compared to Alternative 4, which reduces linear infrastructure requirements. Alignment includes several environmental crossings that will be tunneled, minimizing direct impacts on aquatic and terrestrial habitats. Integrates with planned road improvements along Trafalgar Road, creating opportunities for coordination during construction. 	<ul style="list-style-type: none"> Requires a larger expansion of the Drumquin WWPS, increasing construction complexity and long-term operating costs. Relies more heavily on pumping, flows are lifted twice before reaching the Mid-Halton WWTP, reducing operational efficiency. Increased reliance on Drumquin WWPS elevates the potential risk of overflows to the environment under emergency or extreme wet weather conditions. Offers less flexibility to support phased growth, since the WWPS expansion and sewer must be implemented early to accommodate new development. 	<p>✓ Carried Forward</p>
4. Expand Lower Base Line WWPS’s servicing area further east for future Greenfield growth areas servicing south and west towards Lower Base Line WWPS	<ul style="list-style-type: none"> Requires a smaller expansion of the Drumquin WWPS, reducing lifecycle costs at the facility. Relies on gravity conveyance to the Lower Base Line WWPS, meaning flows are pumped only once before reaching Mid-Halton WWTP, improving long-term efficiency. Reduces reliance on Drumquin WWPS, thereby lowering the potential risk of overflows under emergency or extreme operating conditions and improving resiliency under climate change conditions. Supports phased growth by allowing construction of sewer segments to proceed in line with development timing and location. 	<ul style="list-style-type: none"> Requires a longer and deeper sewer alignment than Alternative 3, increasing capital costs and construction complexity. Involves one additional major creek crossing compared to Alternative 3, introducing higher environmental risk despite tunneling methods. Requires property acquisition for an easement connection to Lower Base Line at Fifth Line, adding coordination and approval challenges. 	<p>✓ Carried Forward</p>



Alternative 4

Figure 32 – Focus Area Servicing Solution – Drumquin WWPS Servicing Alternatives

Both Alternatives 3 and 4 were determined to be technically feasible; however, Alternative 4 was carried forward as the preferred servicing strategy as it provides a more flexible, resilient, and cost-effective long-term solution. By sending flow through new gravity sewers to the proposed Lower Base Line WWPS, this alternative avoids overloading the Drumquin WWPS and supports phased implementation which will align with future development. In addition, it increases system redundancy through creating a new conveyance route. This new route also decreases operational risk under emergency conditions by reducing the number of pumping station required for conveying the flow.

A portion of the proposed deep trunk sewer would be located within a future easement; therefore, the feasibility of this alignment is considered preliminary. The IMP recommends that a future Class EA be undertaken to revisit the servicing strategy, confirm the suitability of the proposed route and guide subsequent design decisions.

Figure 33 presents the preferred wastewater servicing strategy selected based on the evaluation outcomes. The detailed evaluation supporting this recommendation is provided in **Appendix 4A**.

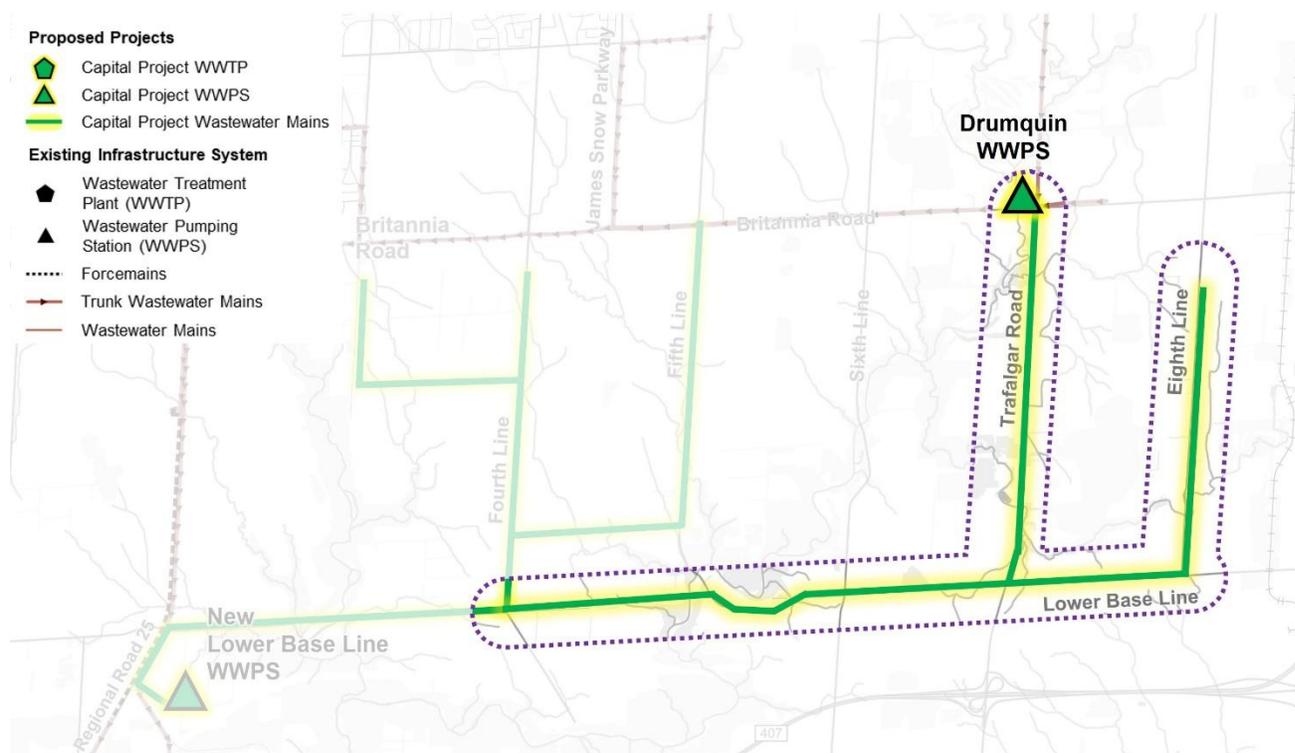


Figure 33 – Focus Area Servicing Solution – Drumquin WWPS Preferred Strategy

Lower Base Line WWPS

The wastewater servicing strategy for the Lower Base Line WWPS was initially introduced through the Sustainable Halton Master Plan. This strategy includes the construction of new trunk sewers along Thompson Road, Fourth Line, and Fifth Line south of Britannia Road, and a new WWPS to support growth in southeast Milton.

As part of the IMP, this strategy was reviewed and refined in coordination with the ongoing Class EA study to better reflect updated growth forecasts, improve operational flexibility, support construction phasing, and maximize use of existing infrastructure. The updated strategy also enables integration with other servicing strategies in the area, including the Tremaine Road trunk sewer and diversion of flow from the Mid-Block Arterial WWPS to the Britannia WWPS.

The station is currently proposed to be located on Johnson Way, south of the intersection of Lower Base Line West and Regional Road 25. The preferred location and alignment will be confirmed through the ongoing EA. The refined servicing strategy includes the following key components:

- A) Construction of new trunk sewers on Fifth Line, Fourth Line, and Thompson Road south of Britannia Road to support greenfield growth.
- B) Installation of a diversion chamber at the intersection of Britannia Road and Fifth Line to facilitate flow balancing between the existing Britannia Road WWPS and the future Lower Base Line WWPS. This design also considers the diversion of flows from the Mid-Block Arterial WWPS to optimize capacity at the Britannia WWPS.
- C) Construction of a deep trunk sewer along Lower Base Line West, west of Regional Road 25, to allow for a gravity connection from the proposed Tremaine Road trunk sewer (refer to Tremaine Road Trunk Sewer and WWPS Servicing Strategy).
- D) Construction of the new Lower Base Line WWPS at Johnson Way and Regional Road 25.
- E) Installation of trunk sewers along Lower Base Line West, Eighth Line, and Trafalgar Road to accommodate future growth. These projects can be phased in response to the pace and location of development (Refer to Drumquin WWPS Servicing Strategy).

Figure 34 presents the wastewater servicing strategy for the Lower Base Line WWPS.

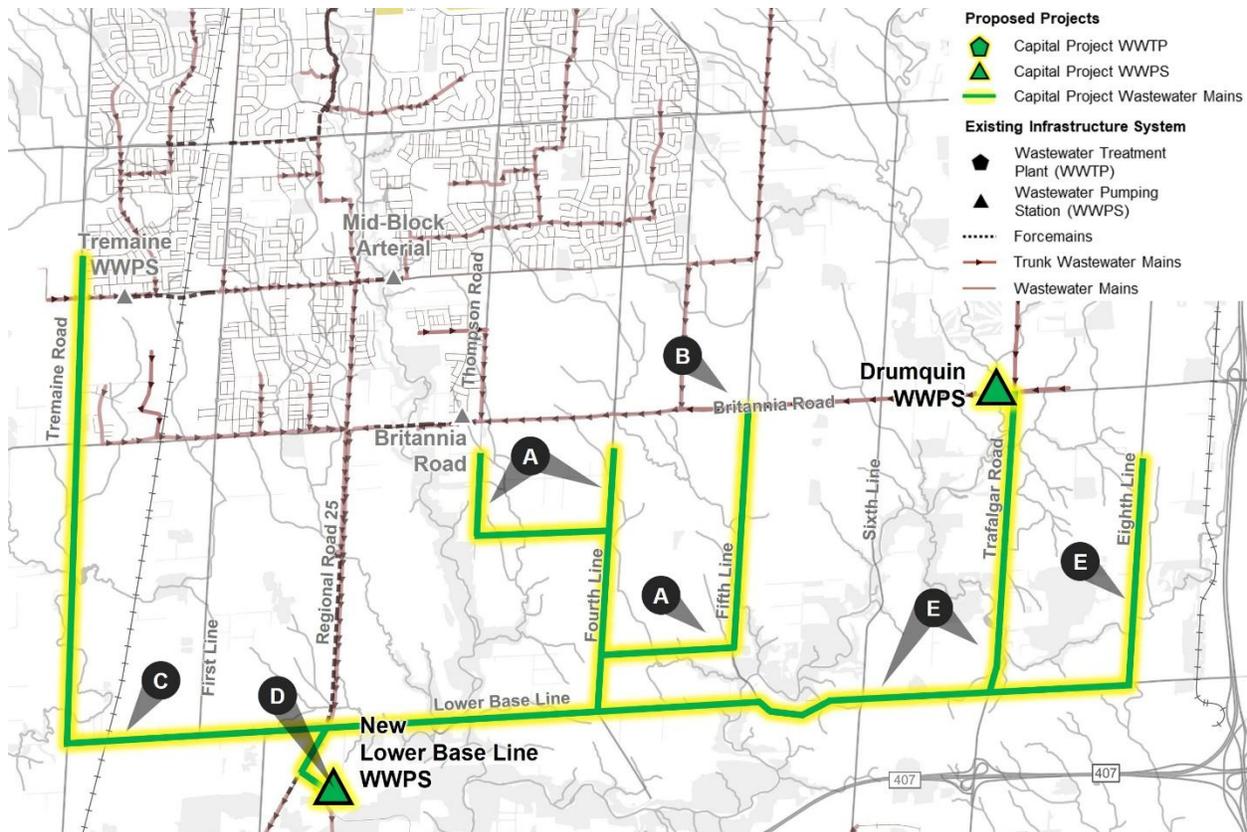


Figure 34 – Focus Area Servicing Solution - Lower Base Line Servicing Strategy

Tremaine Road Trunk Sewer and WWPS

The Tremaine WWPS is located at the western limit of Milton and services areas north of Louis St. Laurent Avenue and west of the railway corridor that generally follows Bronte Street North. Greenfield growth is planned in this area, including lands along Tremaine Road extending south from Louis St. Laurent Avenue to Lower Base Line West.

The Sustainable Halton Master Plan identified capital projects to support this growth, including a gravity sewer along Tremaine Road terminating approximately 500 metres north of Lower Base Line West, where a new WWPS was proposed. This location coincides with a significant creek crossing that would require a deep sewer, rendering a gravity connection to the Boyne trunk sewer infeasible and necessitating a pumping solution.

As part of the IMP, this strategy was reviewed and updated in light of two new considerations:

1. Modelling analysis shows potential capacity constraints at the Tremaine Road WWPS under existing and future peak wet weather flow conditions.
2. Opportunity to connect to the proposed Lower Base Line WWPS.

In response, the following servicing strategy alternatives have been identified and evaluated to address growth in this area:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – New WWPS on Tremaine Road and gravity sewer to the trunk sewer on Regional Road 25 (Boyne trunk sewer)
- Alternative 4 – Deep gravity sewer to the new Lower Base Line WWPS

Table 16 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 35** presenting the wastewater servicing alternatives considered through the evaluation process.

Table 16 – Wastewater Servicing Strategy Advantages and Disadvantages for Tremaine Sewer and WWPS

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP's vision and considerations. Potential social/economic/environmental disruptions due to lack of servicing. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP's vision and considerations. 	<p>✘ Screened Out</p>
3. New WWPS on Tremaine Road and gravity sewer to the Boyne trunk sewer	<ul style="list-style-type: none"> Provides servicing to the new growth area without impacting existing users. Construction primarily within new growth or rural areas, minimizing long-term impacts to residents and businesses. Technically feasible option that can be implemented with standard WWPS design and construction practices. Opportunity to coordinate construction with future Tremaine Road widening projects. 	<ul style="list-style-type: none"> Potential increases in short and long-term noise, odour, and visual impacts from the construction and ongoing operation of a new pumping station. Higher lifecycle costs associated with operation and maintenance of a new WWPS. Requires Class EA, property acquisition, facility approvals, and extensive coordination - increasing approval and implementation requirements. Introduces ongoing vulnerability to mechanical and power-related failures, reducing resiliency compared to a gravity-only solution. 	<p>✓ Carried Forward</p>
4. Deep gravity sewer to the new Lower Base Line WWPS	<ul style="list-style-type: none"> Provides servicing to the new growth area without impact to existing users. Gravity-only solution avoids noise, odour, and visual impacts associated with a new WWPS. Improves long-term efficiency of system operations by consolidating flows at a regional facility (Lower Base Line WWPS), which has planned capacity to accommodate future growth and improves overall system resiliency. Reduces future operational risks by minimizing the number of pumping stations in the system, as well as lowering the overall exposure to potential failures, power outages, and high operation and maintenance costs. 	<ul style="list-style-type: none"> Requires construction of a deep gravity sewer, leading to higher capital costs and more complex tunnelling compared to shallower sewer and forcemain options. Construction of the deep sewer may require a feasibility study to confirm constructability and cost-effectiveness. 	<p>✓ Carried Forward</p>

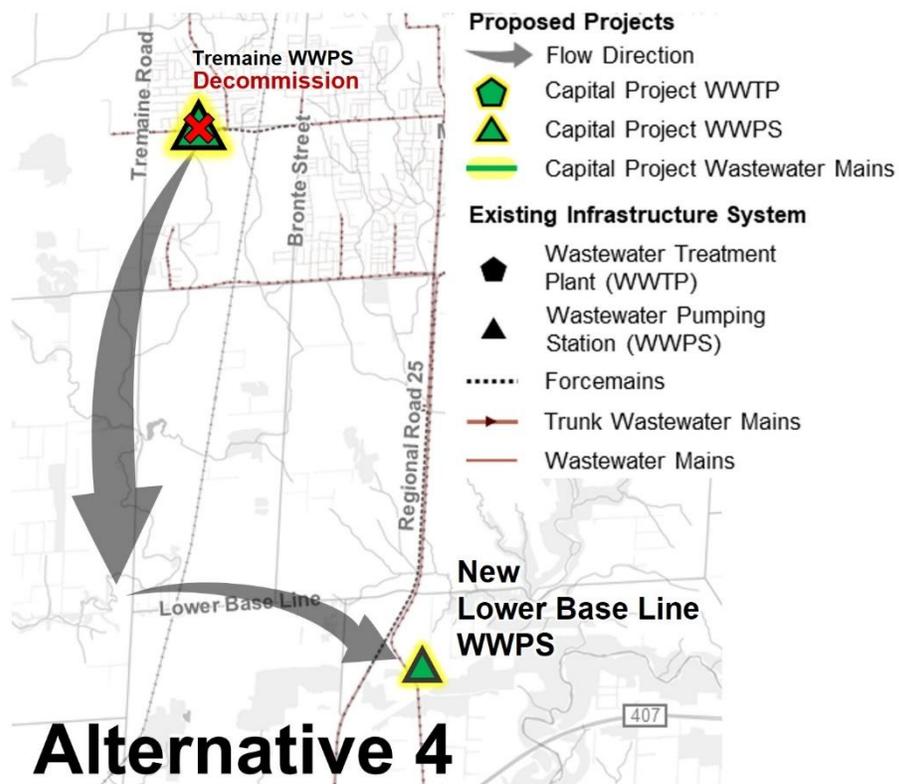
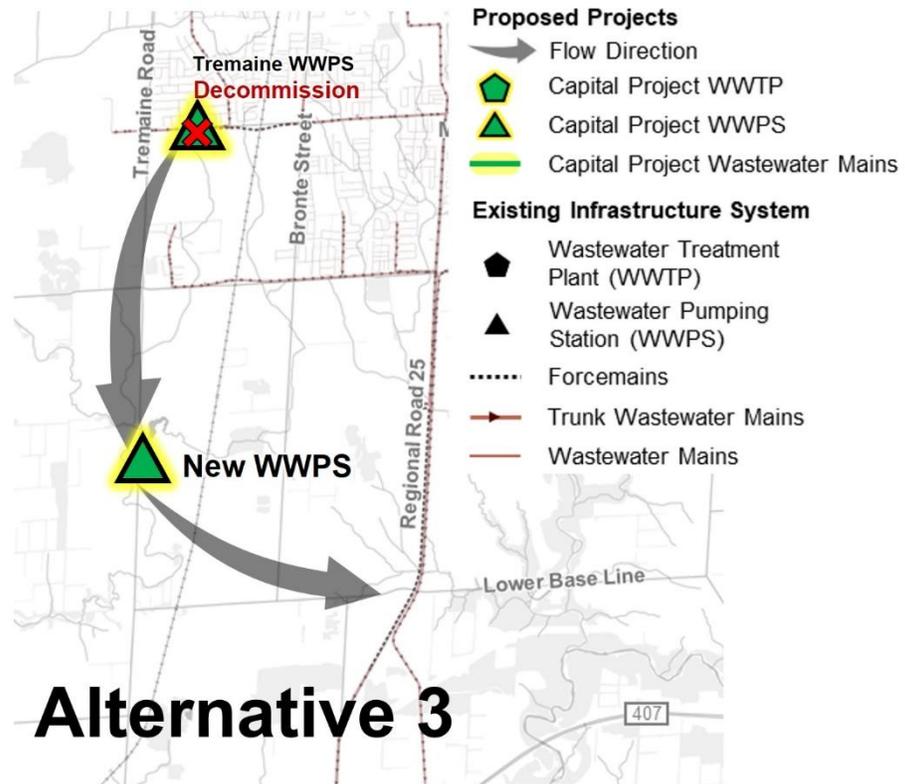


Figure 35 – Focus Area Servicing Solution – Tremaine Road Trunk Sewer Servicing Alternatives

Alternatives 1 and 2 were screened out early in the evaluation process, as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

While both Alternatives 3 and 4 are technically feasible, Alternative 4 was identified as the preferred servicing strategy. This alternative conveys flows via a deep gravity sewer along Tremaine Road to the proposed Lower Base Line WWPS, avoiding the need for a new pumping station at Tremaine Road. By eliminating the need for a new WWPS, Alternative 4 reduces long-term operational and maintenance requirements, lowers lifecycle costs, and reduces environmental risks. Although this alternative requires a deeper sewer and more complex tunnelling, it reduces the long-term emissions, lowers operational, maintenance and lifecycle costs, and results in energy savings.

The IMP proposes further refinements to the future role of the existing Tremaine WWPS. As part of servicing the greenfield growth area south of Louis St. Laurent Avenue, a trunk sewer was previously proposed along the future Savoline Boulevard, extending from Louis St. Laurent Avenue to Britannia Road. Portions of the trunk sewer have already been constructed and, once the remaining sections are constructed, the majority of flows currently conveyed to the existing Tremaine WWPS will be diverted to the Savoline sewer. To fully decommission the existing Tremaine WWPS, the IMP proposes an additional gravity connection along Louis St. Laurent Avenue to divert the remaining flows to the new Tremaine Road trunk sewer. Implementing both components together enables complete removal of the existing pumping station, reducing operational risks and improving long-term system efficiency. **Figure 36** presented the preferred wastewater servicing strategy selected based on the evaluation. The detailed evaluation is presented in **Appendix 4A**.

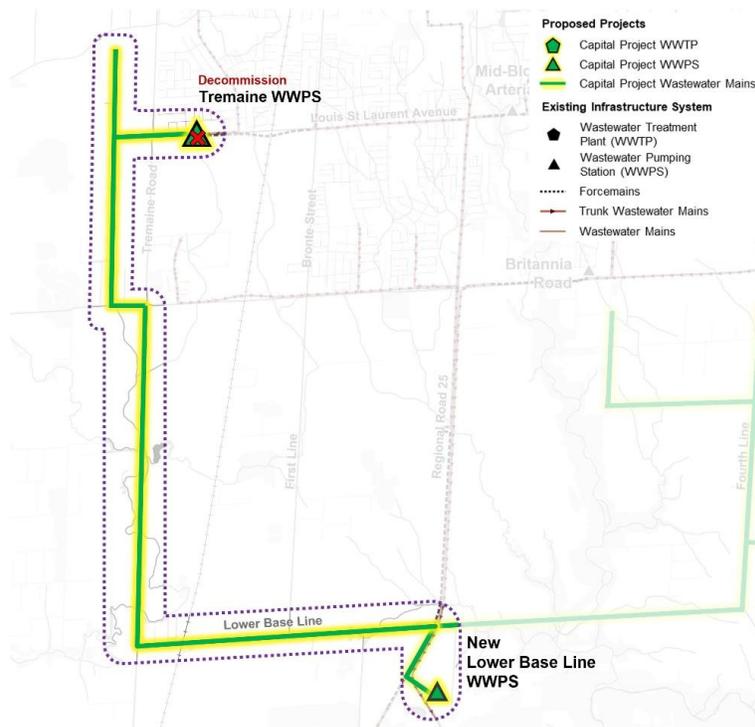


Figure 36 – Focus Area Servicing Solution – Tremaine Road Trunk Sewer Preferred Strategy

Mid-Block Arterial WWPS

The Mid-Block Arterial WWPS is located in central Milton and services areas east of Regional Road 25 and north of Louis St. Laurent Avenue. It also receives flows from Halton Hills WWPS #1 and #2. The station has been identified as operating at firm capacity under existing peak wet weather flow conditions and is projected to experience potential capacity constraints under future growth scenarios.

The available property footprint at the Mid-Block Arterial WWPS is limited because the station was originally designed as a smaller pumping station; therefore, a capacity expansion cannot be accommodated without acquiring additional land. Given these constraints, the IMP evaluated alternative strategies focused on diverting excess flows away from the station, thereby avoiding the need for a large pumping station upgrade.

The following five alternative strategies were evaluated:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Expand Mid-Block Arterial WWPS
- Alternative 4 – Divert excess flows to Lower Base Line WWPS
- Alternative 5 – Divert excess flows to Britannia Road WWPS

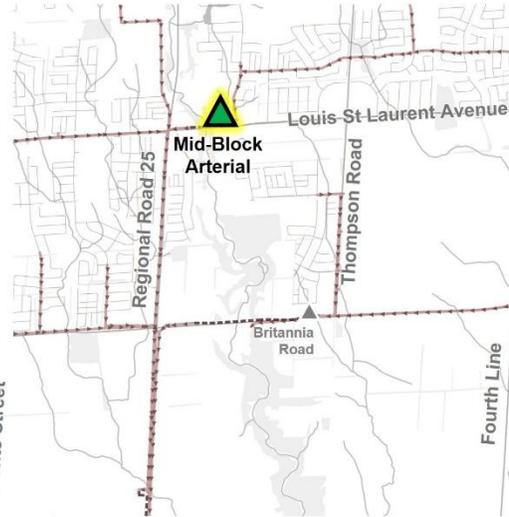
Table 17 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 37** presenting the range of wastewater servicing alternatives considered through the evaluation process.

Table 17 – Wastewater Servicing Strategy Advantages and Disadvantages for Mid-Block Arterial WWPS

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP's vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP's vision and considerations. 	<p>✘ Screened Out</p>
3. Expand Mid-Block Arterial WWPS	<ul style="list-style-type: none"> No new linear infrastructure, avoiding road and utility conflicts. Minimal environmental impacts, as work is confined to the station site. Lower construction disruption to surrounding areas compared to alternatives with long sewer alignments. 	<ul style="list-style-type: none"> Limited land availability for expansion may make the alternative infeasible. Higher operational dependency on a single facility, reducing redundancy. Does not provide an alternate flow route for improved system flexibility. 	<p>✓ Carried Forward</p>
4. Divert excess flows to Lower Base Line WWPS	<ul style="list-style-type: none"> Creates an alternate flow route, adding redundancy and operational flexibility. Avoids major upgrades at Mid-Block Arterial WWPS. Potential to integrate works with new development areas in the south, reducing local disruption. Maintains minimal environmental impacts through tunneled watercourse construction. 	<ul style="list-style-type: none"> Deep trunk sewer with higher construction complexity and cost. Greater length of linear works increases road and utility conflicts. Introduces reliance on an interconnection between two existing pumping stations, requiring coordinated operation and monitoring. Longer construction period and higher staging costs compared to Alternative 5. 	<p>✓ Carried Forward</p>
5. Divert excess flows to Britannia Road WWPS	<ul style="list-style-type: none"> Optimizes use of both Mid-Block Arterial and Britannia Road WWPS, avoiding major capacity upgrades at either site. Shorter, shallower sewer reduces construction cost, complexity, and staging requirements. Work largely within existing ROW, reducing approvals and coordination required. Adds an alternate flow route for redundancy and improved operational flexibility. 	<ul style="list-style-type: none"> Requires new linear infrastructure, resulting in construction-related disruption to local roads and adjacent properties. Introduces reliance on an interconnection between two existing pumping stations, requiring coordinated operation and monitoring. 	<p>✓ Carried Forward</p>

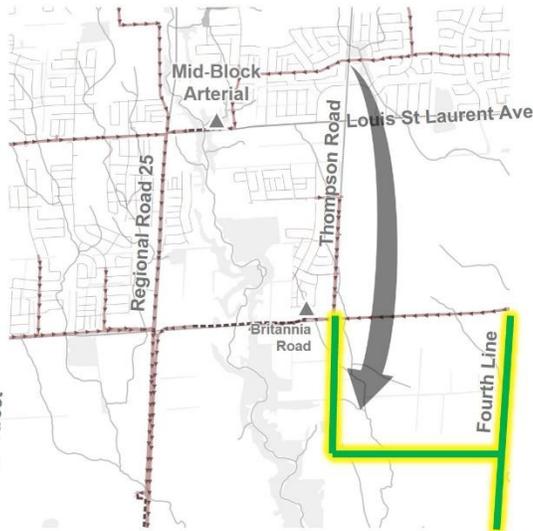
- Proposed Projects**
- ➔ Flow Direction
 - 🟩 Capital Project WWTP
 - 🟩 Capital Project WWPS
 - 🟩 Capital Project Wastewater Mains
- Existing Infrastructure System**
- ⬛ Wastewater Treatment Plant (WWTP)
 - ▲ Wastewater Pumping Station (WWPS)
 - ⋯ Force mains
 - ➔ Trunk Wastewater Mains
 - Wastewater Mains

Alternative 3



- Proposed Projects**
- ➔ Flow Direction
 - 🟩 Capital Project WWTP
 - 🟩 Capital Project WWPS
 - 🟩 Capital Project Wastewater Mains
- Existing Infrastructure System**
- ⬛ Wastewater Treatment Plant (WWTP)
 - ▲ Wastewater Pumping Station (WWPS)
 - ⋯ Force mains
 - ➔ Trunk Wastewater Mains
 - Wastewater Mains

Alternative 4



- Proposed Projects**
- ➔ Flow Direction
 - 🟩 Capital Project WWTP
 - 🟩 Capital Project WWPS
 - 🟩 Capital Project Wastewater Mains
- Existing Infrastructure System**
- ⬛ Wastewater Treatment Plant (WWTP)
 - ▲ Wastewater Pumping Station (WWPS)
 - ⋯ Force mains
 - ➔ Trunk Wastewater Mains
 - Wastewater Mains

Alternative 5

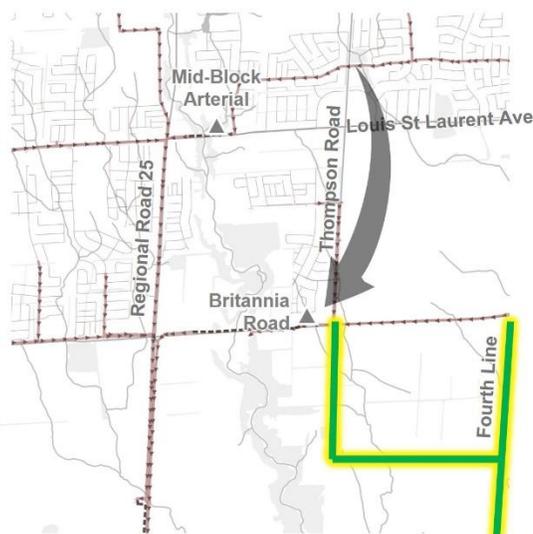


Figure 37 – Focus Area Servicing Solution – Mid-Block Arterial WWPS Servicing Alternatives

Alternatives 1 and 2 were screened out early in the evaluation process, as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Alternative 3, expanding the existing Mid-Block Arterial WWPS, was considered technically feasible and would improve service levels for existing users. However, this alternative could not be implemented due to the limited property footprint. Therefore, this was not selected as the preferred option.

Alternatives 4 and 5, diverting flows to either the Lower Base Line WWPS or Britannia Road WWPS, were both found to be viable solutions that enhance system resiliency and provide long-term servicing flexibility. While both options require coordination and flow balancing with surrounding infrastructure, Alternative 5 was selected as the preferred strategy. The shallower and shorter alignment of the proposed sewer reduces construction complexity, minimizes emissions associated with tunnelling activities, and results in lower lifecycle and staging costs compared to the other alternatives.

Conversely, Alternative 4 involves tunnelling a longer and deeper sewer, introducing higher construction complexity and greater community and traffic impacts during implementation. By avoiding the need for deep tunnelling along Thompson Road South, Alternative 5 provides a more technically feasible and cost-effective solution. The simpler construction approach, combined with reduced emissions and fewer implementation challenges, makes Alternative 5 the most practical and efficient option to address potential future capacity constraints at the Mid-Block Arterial WWPS. **Figure 38** presents the preferred wastewater servicing strategy selected based on the evaluation outcomes.

The detailed evaluation is presented in **Appendix 4A**.

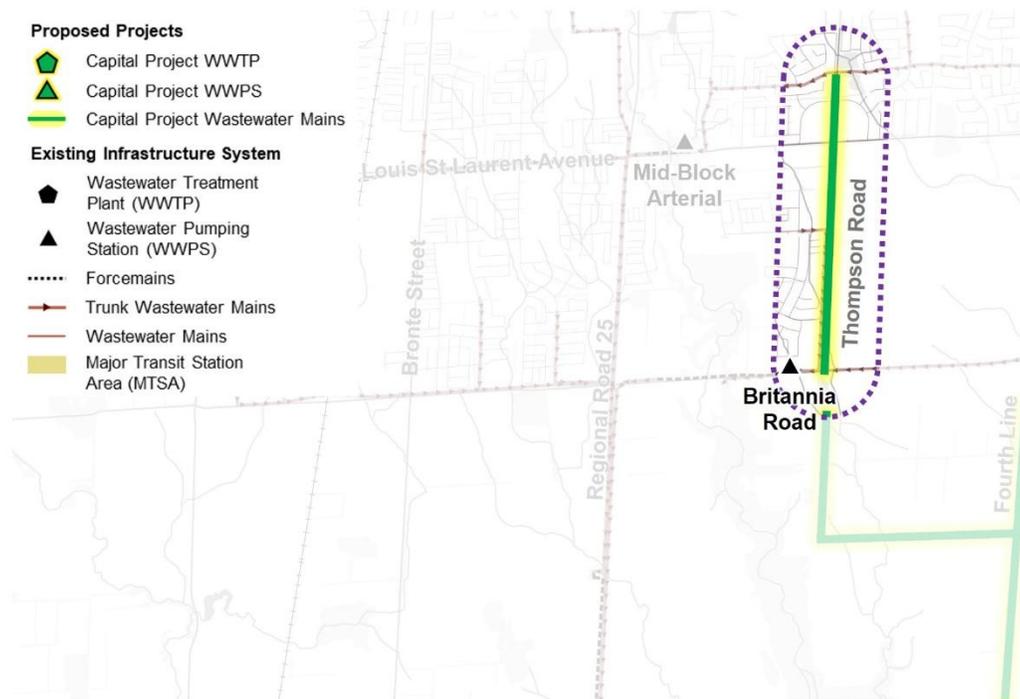


Figure 38 – Focus Area Servicing Solution – Mid-Block Arterial WWPS Preferred Strategy

Biosolids Composting Storage and Distribution Facility

The Biosolids Composting Facility is located near the Mid-Halton WWTP. Biosolids, a nutrient-rich byproduct of the wastewater treatment process, are often beneficially reused in agricultural applications. In 2020, Halton Region completed a Biosolids Composting Feasibility Study which recommended the development of a Region-owned biosolids composting facility.

Building on this recommendation, the Region initiated a Schedule B Class EA study to identify the preferred location for constructing a biosolids composting facility. The Class EA study evaluated multiple alternative sites across the Region, considering factors such as capacity needs, composting technologies, site accessibility, environmental impacts, land acquisition requirements, coordination with existing and planned infrastructure, and financial implications. The W.A. Bill Johnson Biosolids Management Centre (BMC) was selected as the preferred location for the proposed biosolids composting facility. This location was identified as having the least potential impacts with respect to the natural and social/cultural environments compared to other alternatives. The next stage is the design and implementation of the new biosolids composting facility to support long-term biosolids management in the Region.

5.3.2.6 Oakville

Ninth Line WWPS Expansion

The Ninth Line WWPS is located in east Oakville, servicing areas east of Trafalgar Road. The station conveys flows directly to the Oakville Southeast WWTP and is currently undergoing capacity upgrades to address existing and short-term servicing needs.

Based on projected growth in the station’s service area, an additional capacity upgrade is anticipated in the future. As the station is located at the downstream end of the system with direct discharge to the treatment facility, there are limited opportunities for flow diversion or alternative routing. As such, alternatives such as "do nothing" and "limit growth" were not considered viable. A capacity increase and additional forcemain is the only feasible servicing strategy identified to support long-term growth and maintain current levels of service.

Given that the current upgrades are relatively recent, no impactful performance issues at this WWPS are expected in the near-term. However, the Region should continue to monitor system performance and growth patterns to confirm the timing and scope of the future upgrade based on actual development and flows in the area. **Figure 39** shows the servicing strategy for this area.

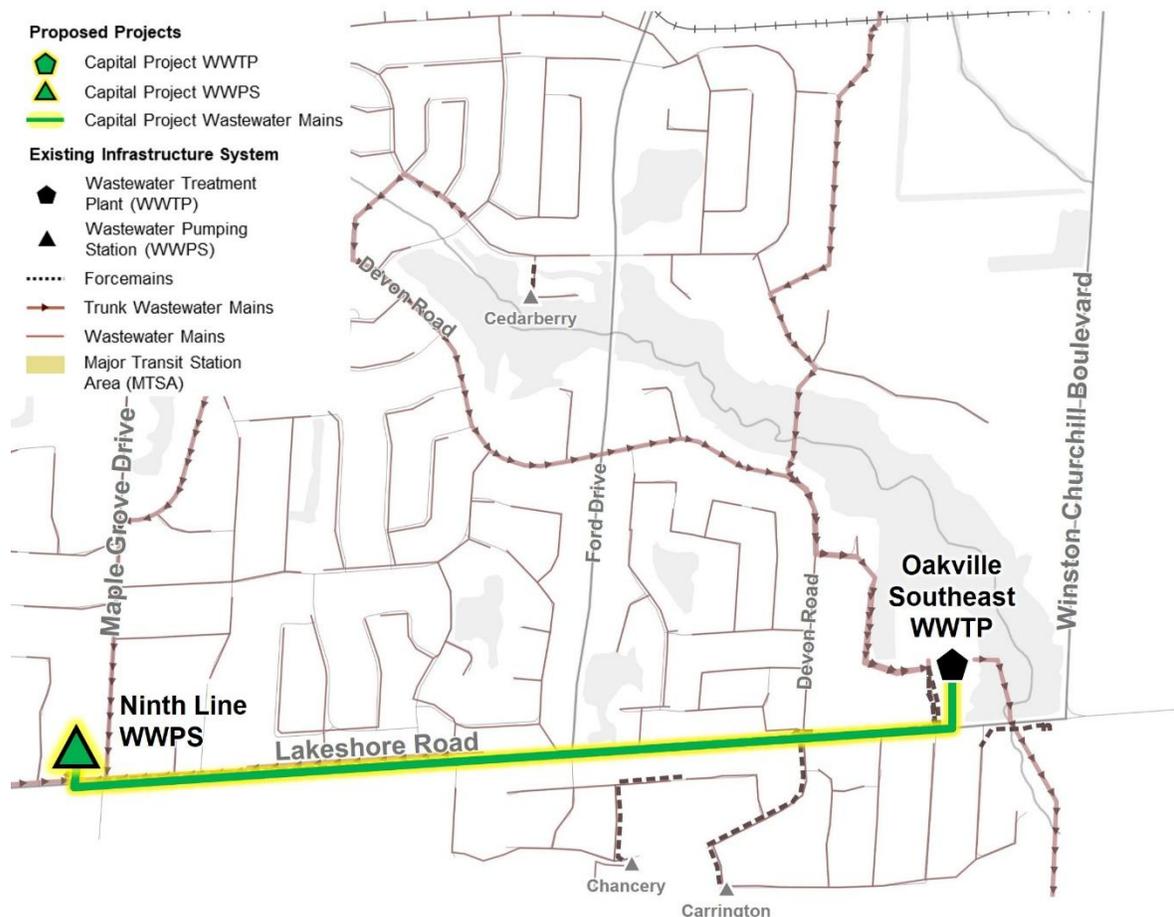


Figure 39 – Focus Area Servicing Solution – Ninth Line WWPS Servicing Strategy

Dundas Street WWPS

The Dundas Street WWPS is located in North Oakville and is a relatively new pumping station designed for an ultimate firm capacity of 1,200 L/s. The station services the area north of Dundas Street West and is currently operating at an existing firm capacity of approximately 627 L/s.

The IMP analysis determined that 1,200 L/s should be sufficient capacity to support growth to 2051. As the pumping station was originally designed to support this expansion, the required upgrades can be completed within the existing footprint with minimal disruption. Accordingly, no alternative servicing strategies were evaluated as part of the IMP.

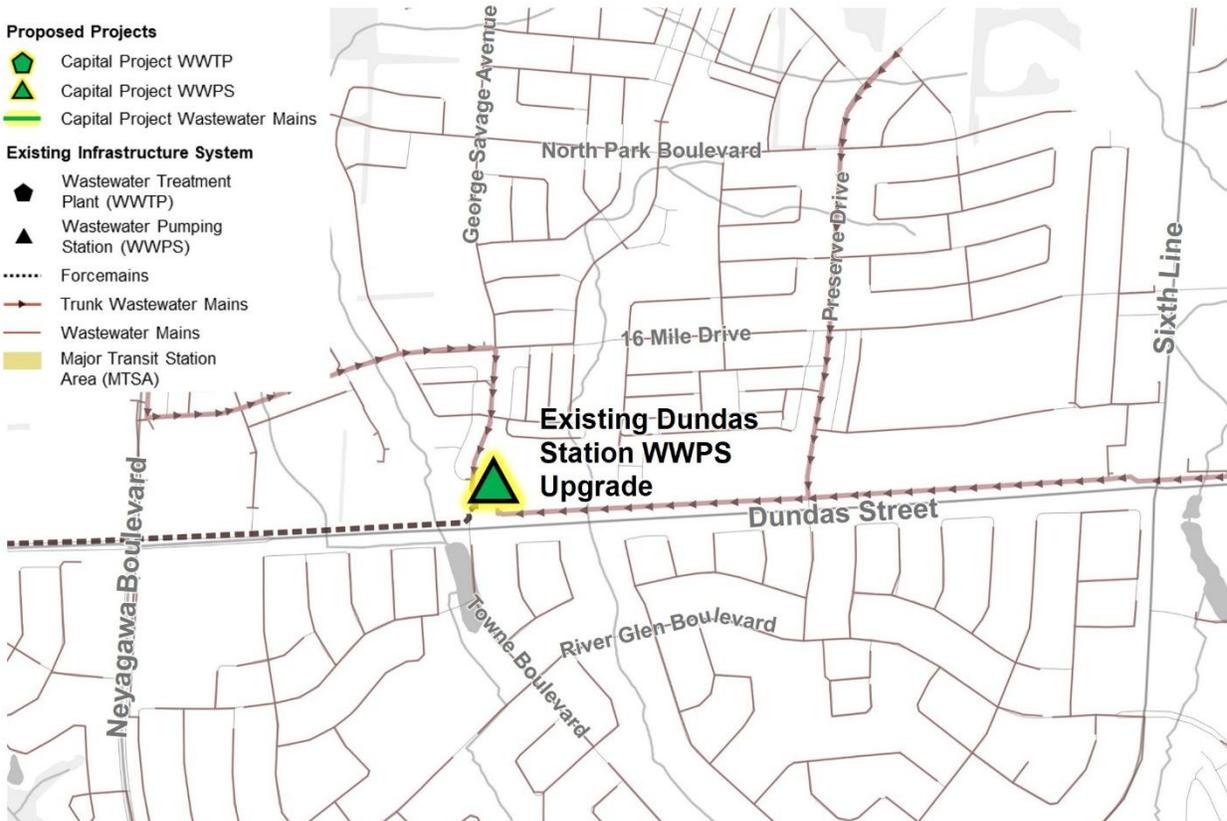


Figure 40 – Focus Area Servicing Solution – Dundas Street WWPS Servicing Strategy

Navy and Water Street WWPS

Downtown Oakville is serviced by the Navy Street and Water Street WWPSs, both of which convey flows to the Oakville Southwest WWTP via the Rebecca Street trunk sewer. This area has been identified for future growth through intensification, placing increased demand on the existing wastewater infrastructure.

In 2014, the Region initiated a Schedule B Class EA study that identified a preferred strategy to decommission the Navy Street WWPS and construct a new Water Street WWPS to receive diverted flows. In 2018, a further review identified potential refinements to this strategy, including retrofitting the existing Navy Street WWPS and constructing a new Water Street WWPS, supported by new inlet gravity sewers and a forcemain.

The 2020 Halton WWPS Servicing Strategy Update further reviewed the servicing strategy and reaffirmed the strategy of consolidating the stations into a new Water Street WWPS. Through the IMP, the preferred strategy has been reviewed and carried forward, with refinements to the station capacity and infrastructure layout to align with updated growth projections to 2051. The following projects are carried forward, as illustrated in **Figure 41**:

- A) Decommissioning of the existing Navy Street WWPS and construction of a gravity sewer from Front Street to the new Water Street WWPS;
- B) Decommissioning of the existing Water Street WWPS and construction of a new Water Street WWPS (location to be confirmed);
- C) Installation of a new gravity sewer from the existing Water Street WWPS to the new WWPS location; and,
- D) Construction of a forcemain from the new WWPS to the Rebecca Street trunk sewer.

The final location of the new Water Street WWPS remains subject to confirmation. A Schedule B Class EA will be required to finalize the servicing strategy and location of the new Water Street WWPS.



Figure 41 – Focus Area Servicing Solution – Navy Street and Water Street WWPS Servicing Strategy

Bronte GO MTSA

The Bronte GO MTSA is located in southwest Oakville, bounded by the QEW to the north, Speers Road to the south, Fourteen Mile Creek to the east, and Pacific Road to the west. The area is designated for intensification and is expected to accommodate significant population and employment growth over the planning horizon.

The wastewater system servicing the Bronte GO MTSA has been identified to have potential existing and future capacity constraints under peak wet weather flow conditions, particularly within the downstream collection system. The IMP evaluated a range of alternative servicing strategies to address these limitations and accommodate long-term growth.

The following alternatives were considered and are illustrated in **Figure 42**:

- Alternative 1 – Do Nothing
- Alternative 2 – Limit Growth
- Alternative 3 – Upsize existing trunk sewers from Sunset Drive to the Oakville Southwest WWTP via Lakeshore Road
- Alternative 4 – New WWPS and forcemain within Bronte GO MTSA to divert flows to the Mid-Halton WWTP

Table 18 provides a high-level summary of the key advantages and disadvantages associated with each alternative followed by **Figure 42** presenting the range of wastewater servicing alternatives considered through the evaluation process.

Table 18 – Wastewater Servicing Strategy Advantages and Disadvantages for Bronte GO MTSA

Alternative	Advantages	Disadvantages	Decision
1. Do Nothing	<ul style="list-style-type: none"> Does not incur new capital costs. No potential impacts due to construction of new infrastructure. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and the Provincial Planning Statement (PPS) 2024 growth targets. Does not align with the IMP's vision and considerations. Potential social/economic/environmental disruptions due to insufficient capacity. 	<p>✘ Screened Out</p>
2. Limit Growth	<ul style="list-style-type: none"> Reduces the extent of capital upgrades required in system. 	<ul style="list-style-type: none"> Does not meet adequate levels of service for existing users and future growth. Does not comply with the official plan of the four Local Municipalities in Halton and PPS 2024 growth targets. Does not align with the IMP's vision and considerations. 	<p>✘ Screened Out</p>
3. Upsize existing trunk sewers from Sunset Drive to the Oakville Southwest WWTP via Lakeshore Road	<ul style="list-style-type: none"> Relies on a gravity-only solution. Provides security of capacity by providing additional sewer capacity along the existing alignment. Avoids the need for a new WWPS, reducing long-term operational and maintenance costs and emissions. 	<ul style="list-style-type: none"> Constructability and technical feasibility challenges within the utility congested Lakeshore Road corridor containing two existing trunk sewers and watermains; requires upsizing of the existing sewers rather than adding new ones. The construction extent largely downstream of Bronte GO MTSA results in disruption impacting areas not targeted for growth or redevelopment. High potential for road and utility conflicts, increasing social impacts, costs, and schedule risks. Benefits to the MTSA would not be realized until full commissioning, limiting support for early phases of intensification. 	<p>✓ Carried Forward</p>
4. New WWPS and forcemain within Bronte GO MTSA to divert flows to the Mid-Halton WWTP	<ul style="list-style-type: none"> Targets infrastructure upgrades within the Bronte GO MTSA, directly supporting planned intensification and redevelopment. Significantly shorter extent of linear works compared to Alternative 3, reducing construction duration, costs, and social impacts. Diverts flows from the constrained Oakville Southwest WWTP to the Mid-Halton WWTP, which has existing and planned capacity upgrades. Avoids downstream construction disruptions and utility conflicts, focusing impacts within the redevelopment area. 	<ul style="list-style-type: none"> Introduces a new WWPS that will require ongoing operation and maintenance. Requires a Class EA study, property acquisition, facility approvals, and coordination for the new WWPS within the Bronte GO MTSA, as well as linear connections to the system through crossing of the QEW for the forcemains. Increased visual impacts through construction of a new WWPS. Impacts may be mitigated through the design of the building. 	<p>✓ Carried Forward</p>

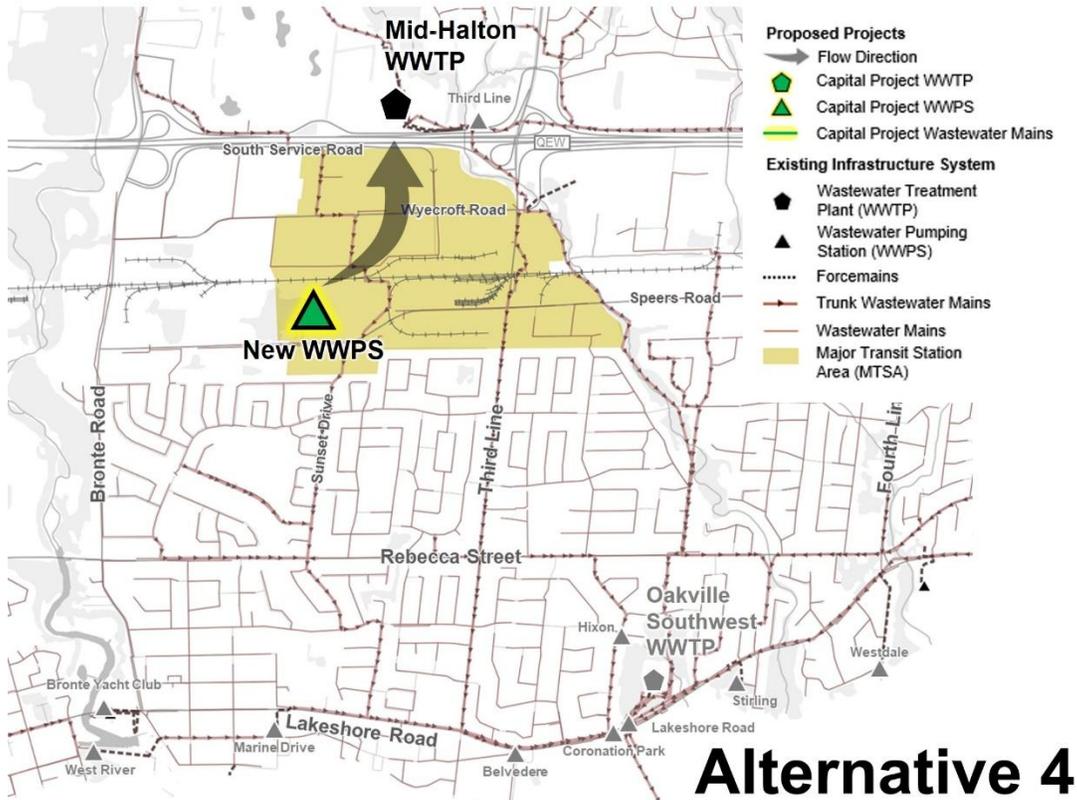
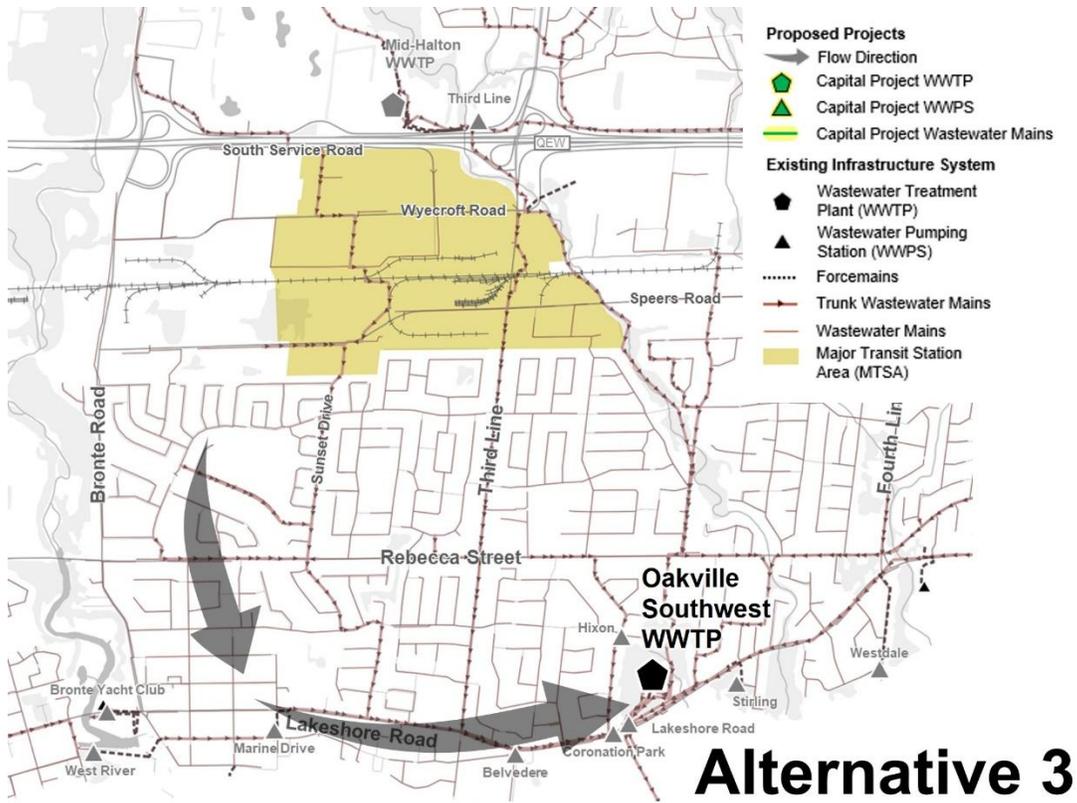


Figure 42 – Focus Area Servicing Solution – Bronte GO MTSA Servicing Alternatives

Alternatives 1 and 2 were screened out early in the evaluation process, as they do not address the identified capacity constraints or support planned growth within the Region. These options are not consistent with the vision and servicing objectives of the IMP.

Alternative 3 offers a technically feasible option but presents significant constructability challenges, particularly along Lakeshore Road, where two existing trunk sewers already occupy much of the corridor. Capacity upgrades within this constrained alignment would be difficult to implement and would require complex construction staging through established neighbourhoods, resulting in social, traffic, and utility-related impacts. In addition, the long extent of upgrades proposed under this option increases both construction complexity and overall capital cost.

Alternative 4 was identified as the preferred servicing strategy for addressing growth within the Bronte GO MTSA. This option provides a more robust and flexible servicing solution by introducing a new wastewater pumping station and forcemain that directly serves the MTSA and diverts flows to the Mid-Halton WWTP. By focusing infrastructure improvements within the growth area, construction activities are concentrated where redevelopment is expected to occur, reducing community impacts to established communities downstream. The shorter linear component of this option also minimizes construction duration, complexity, and traffic impacts compared to the extensive upgrades required along Lakeshore Road under Alternative 3. Additionally, this strategy provides flexibility to phase the works in alignment with the timing of planned intensification and redevelopment. Alternative 4 also provides an added benefit through diverting additional flows away from the Oakville Southwest WWTP, which reduces the long-term capacity pressure at the facility. As such, Alternative 4 was carried forward as the preferred alternative.

Figure 43 presents the preferred wastewater servicing strategy selected based on the evaluation outcomes.

The detailed strategy evaluation table for this assessment is provided in **Appendix 4A**.

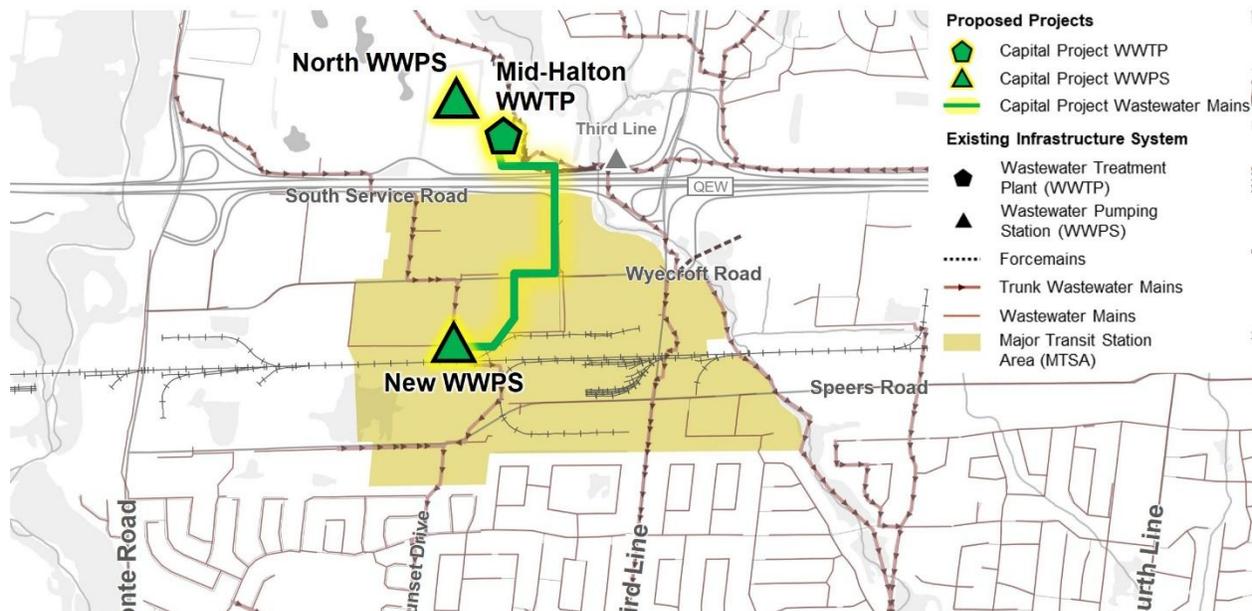


Figure 43 – Focus Area Servicing Solution – Bronte GO MTSA Preferred Strategy

West River WWPS

The West River Wastewater Pumping Station (WWPS) is located in west Oakville and services an area that drains to the Oakville Southwest WWTP. The pumping station pumping station pumping station has been identified as requiring upgrades to meet current design standards and accommodate projected growth.

To address these needs, the Region initiated a Schedule B Class EA to evaluate options for replacing the station and associated infrastructure. This work builds on the direction established in the Sustainable Halton Master Plan and considers both state-of-good-repair requirements and future capacity needs. The existing site presents operational and spatial constraints, and relocation options are being assessed through the MCEA process.

Based on preliminary recommendations from the on-going EA and growth analysis completed through the IMP, the following projects have been carried forward by the IMP, as shown in **Figure 44**:

- A) Decommissioning of the existing West River WWPS and construction of a new 175 L/s station at Berta Point Park;
- B) Construction of a new 400mm forcemain on Lakeshore Road West from the new West River WWPS to East Street;
- C) Construction of a 250mm gravity sewer on West River Street from Seneca Drive to Lakeshore Road West;
- D) Construction of a 450mm inlet sewer to the new station.

The final servicing strategy and location of the new pumping station will be confirmed through the completion of the ongoing Class EA.



Figure 44 – Focus Area Servicing Solution – West River WWPS

5.3.2.7 Greenfield Servicing

Greenfield areas are distributed throughout the Region and are typically located beyond the reach of existing wastewater infrastructure. As such, these areas require the extension of new sanitary trunk sewers to support future development.

The Sustainable Halton Master Plan and various area-specific secondary plans previously identified capital projects to service some of these greenfield lands. As part of the IMP, these servicing strategies were reviewed and refined where necessary to ensure alignment with updated growth forecasts, design criteria and levels of service.

The recommended wastewater servicing strategy for greenfield areas, as shown in **Figure 45**, incorporates these updates and confirms the infrastructure required to support long-term development.

The reviewed and confirmed servicing plans for the identified growth areas include:

- A) **Britannia Secondary Plan Area Servicing:** The Britannia SPA is situated in the southern portion of Milton west of the Trafalgar Corridor Secondary Plan Area. The Sustainable Halton Master Plan identified a trunk sewer along a new road between Fifth and Sixth Line. This servicing strategy has since been refined through subsequent planning and coordination efforts. The refined strategy includes the extension of servicing through two proposed sewers located along Sixth Line and Fifth Line.
- B) **North Oakville East Secondary Plan Area Servicing:** The North Oakville East Secondary Plan Area is bounded by Dundas Street to the south, the Sixteen Mile Creek valley to the west, Highway 407 ETR to the north, and Ninth Line to the east, within the Town of Oakville. The projects required to service growth in this area were identified through the 2011 Area Servicing Plan and carried forward by the Sustainable Halton Master Plan. The IMP has reviewed the remaining projects required to extend servicing within the growth areas and has carried forward trunk sewers along Preserve Drive/Settlers Road, Trafalgar Road, and North Oakville Road. In addition, a new pumping station and associated forcemain are proposed within the Phase 3 Lands to service planned growth south of Burnhamthorpe Road.
- C) **Agerton & Trafalgar Corridor Secondary Plan Area Servicing:** The Agerton and Trafalgar Corridor Secondary Plan Areas is located in east Milton and is generally bounded by Highway 401 to the north, Lower Base Line East to the south, Eighth Line to the east, and the Greenbelt Plan Area to the west. The extension of servicing for the Agerton and Trafalgar Corridor Secondary Plan Areas, was originally identified in the Sustainable Halton Master Plan and subsequently confirmed through the Agerton and Trafalgar SPA Servicing Plan. Both studies identified sewer extensions required to convey flows from the growth areas to the Trafalgar Road trunk sewer system. The IMP has reviewed and validated the servicing strategy for this area to confirm its ability to support projected growth to 2051. This review included confirmation of the location, alignment, and sizing of the proposed sewer infrastructure to ensure consistency with long-term servicing needs.

D) Derry Green Corporate Business Park Secondary Plan Area Servicing: The Derry Green Corporate Business Park was identified as a major employment growth area in Milton and is generally bounded by Highway 401 to the north, Sixth Line to the east, James Snow Parkway to the west, and Sixteen Mile Creek to the south. The Sustainable Halton Master Plan identified several projects to extend servicing to this area. With the majority of these projects now constructed, only one project remains to complete the planned servicing extension. This remaining project includes the construction of a sewer along a future road and Derry Road to convey flows to the Fifth Line trunk sewer. This project has been reviewed, verified, and carried forward through the IMP.

The recommended wastewater servicing strategy for greenfield areas noted above ensure that future development across the growth areas can be effectively supported through the timely extension of sewer infrastructure.

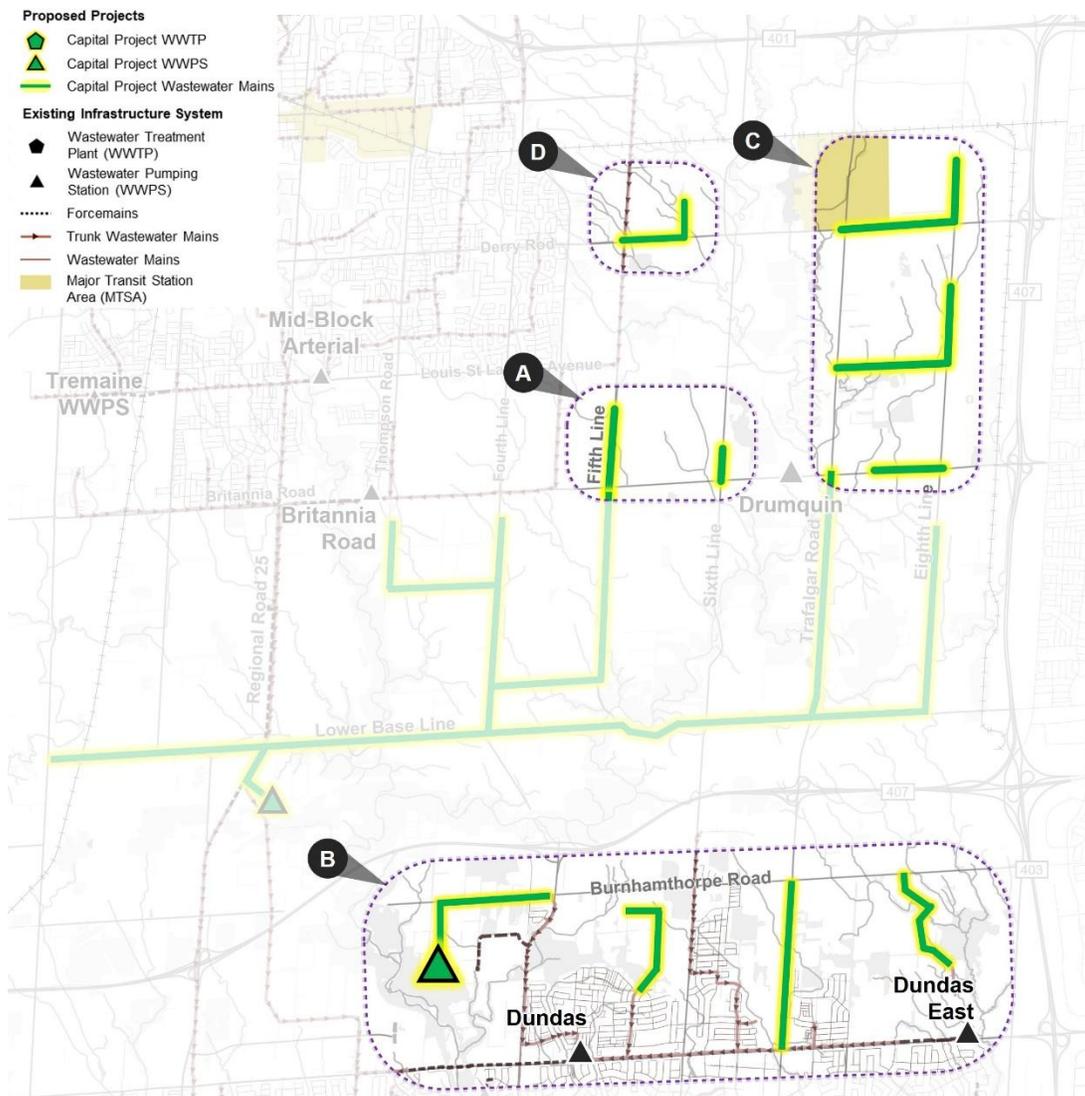


Figure 45 – Focus Area Servicing Solution – Greenfield Servicing Strategy

5.4 Cost Estimation Framework

At the master planning stage, cost estimates are developed to provide a high-level understanding of the capital investment required to implement the preferred servicing strategies. Estimates at this stage are planning-level values suitable for long-range financial forecasting, Development Charges updates, and capital budgeting.

The costing approach for the IMP is based on a unit-rate methodology, using representative cost rates appropriate for master planning. These unit rates reflect industry-standard planning assumptions and available data sources suitable for the level of project definition at this stage.

Each project cost was adjusted to reflect factors such as construction depth, crossings, tunnelling requirements, and location characteristics (greenfield, suburban, or urban). Following the development of the base construction cost, applicable project components, such as studies, detailed design, property, and other supporting costs, were incorporated in accordance with the costing framework to arrive at a total project cost.

Accordingly, these values should be understood as high-level planning estimates that provide a defensible basis for long-range forecasting. As projects advance through subsequent phases, such as Class EA studies (where required), preliminary design, and detailed design, the cost estimates will be refined to reflect the increased level of definition and information available at each stage. Updated estimates will then be incorporated into the Region's capital budgeting process as part of ongoing project development and implementation.

A summary of the unit costs used and the overall costing framework is provided in **Appendix 4B**. Final project costs, presented in Section 5.6, represent the total estimated capital investment to implement the Preferred Wastewater Servicing Strategy and will inform Halton Region's Development Charges By-law and Capital Budget.

5.5 Preferred Servicing Strategy Summary

The Preferred Wastewater Servicing Strategy includes a combination of system-wide initiatives and focus area solutions designed to address existing system constraints and support long-term growth to 2051. The strategy builds on previous planning efforts and incorporates updated flow projections, hydraulic modelling, and sustainability principles to ensure reliable, efficient, and environmentally responsible wastewater servicing across Halton Region.

Several of the key servicing considerations that informed the preferred strategy are summarized below. The entire capital program is shown in **Table 20**.

5.5.1 Treatment Plant Expansion Strategy

To accommodate projected growth to 2051, the Preferred Strategy includes phased expansions and flow diversion for several wastewater treatment facilities:

- Mid-Halton WWTP: Expansion to 350 ML/d in staged phases to service continued growth from Milton, south Georgetown, and flow diversions from other areas.
- Burlington Skyway WWTP: Expansion to 170 ML/d to support intensification in Burlington.
- Oakville Southwest WWTP: Expansion to 60 ML/d to meet projected growth needs, accounting for partial diversion of flows from the Bronte GO MTSA to Mid-Halton WWTP.
- Flow Diversion from Georgetown: Continued implementation of the Eighth Line trunk sewer to divert flows from Georgetown South and Southwest to the Mid-Halton WWTP, maintaining capacity at the Georgetown WWTP.

5.5.2 Focus Area Servicing Solutions

In addition to treatment plant expansions, the Preferred Strategy includes targeted solutions in areas with potential capacity constraints or strategic growth priorities:

- Burlington East Trunk Sewer: Implementation of a combined gravity and pumped solution to address deficiencies and enable growth in east Burlington. This strategy involves decommissioning four local pumping stations and consolidating flows to an expanded Elizabeth Gardens WWPS.
- Milton Greenfield Growth: Construction of the new Lower Base Line WWPS to service both east and west Milton growth areas. This solution supports coordinated upgrades, including expansion of the Drumquin WWPS and decommissioning of the Tremaine WWPS through construction of a new west trunk sewer.
- Main Street WWPS and Silver Creek Trunk Overflow: Construction of a new trunk sewer and WWPS on Main Street South in Georgetown to relieve peak wet weather conditions and support long-term system performance.
- Bronte GO MTSA: New WWPS for a partial flow diversion strategy to Mid-Halton WWTP to address downstream conveyance constraints and provide long-term servicing for intensification.
- Maple Avenue and Drury Lane Trunk Sewers: Capacity upgrades to address system constraints and support future growth in proximity to the Burlington GO MTSA.
- Skyway Inlet Sewer: Construction of a new inlet sewer to the Skyway WWTP to relieve capacity constraints at the plant inlet and surrounding trunk system.

5.5.3 Other Key Initiatives

The Preferred Strategy also includes broader system-wide improvements and policy coordination to support implementation:

- **Downtown Milton:** Further investigation of upstream system constraints and feasibility of an equalization tank at the Fulton WWPS to manage peak flows.
- **Pumping Station Upgrades:** Targeted upgrades or diversion strategies for site constrained WWPS (e.g., Elizabeth Gardens, Ninth Line, Roseland, Bromley Park, Mid-Block Arterial) to address both current and projected capacity limitations.
- **Infrastructure Coordination:** Integration with the Region’s Enhanced Growth Monitoring framework to ensure the strategy remains adaptive to evolving development timelines and priorities.
- **Climate Resiliency and Energy Efficiency:** Application of design principles that improve operational flexibility, reduce emissions, and support long-term climate adaptation objectives.

5.6 Capital Program for the Preferred Servicing Strategy

The capital program supports the implementation of the Preferred Wastewater Servicing Strategy and outlines the infrastructure investments required to service existing and future growth to 2051.

Project costs were estimated using the methodology described in Section 5.4 and **Appendix 4B**. The capital program includes information on project descriptions, type, location, sizes, timing, estimated costs, and applicable MCEA requirements.

Importantly, the costing approach for all projects is comprehensive and accounts for every phase of development, including preliminary planning, environmental assessment, detailed design, property acquisition, and construction.

The capital program supporting the Preferred Wastewater Servicing Strategy is summarized in **Table 19**. This summary includes only the costs of new projects identified through the IMP and excludes projects already funded through Allocation Programs. The complete list of capital projects is provided in **Table 20**, and their general locations are illustrated in **Figure 46**.

Table 19 – Summary of Wastewater Capital Program

Category	Total (\$millions)
Wastewater Treatment	\$525
Biosolids and Pumping Station Infrastructure	\$420
Linear Infrastructure	\$756
Other Studies and Programs	\$60
Total*	\$1,761

**Table does not include the cost of projects already funded through the Allocation Program.*

Table 20 – Wastewater Capital Projects

Master Plan ID	Project Description	Municipality	Construction Type	Project Type	Class EA	Size / Capacity	Length (m)	Year in Service	Total Estimated Cost (\$2025)
WW1	Skyway WWTP Expansion from 140 ML/d to 170 ML/d (BUR)	BUR	Vertical	Wastewater Treatment Plant	Schedule C	30 ML/d	N/A	2041	\$150,000,000
WW2	1200mm WWM on Plains Road E from 100m west of Glendor Avenue to Maple Avenue (BUR)	BUR	Linear	Sanitary	Schedule B	1200 mm	285 m	2031	\$5,282,000
WW3	1200mm WWM on Maple Avenue from Plains Road E to north of Maple Crossing Boulevard. Design and Construction (BUR)	BUR	Linear	Sanitary	-	1200 mm	1370 m	2031	\$20,501,000
WW4	200mm WWM on Plains Road E from railroad crossing to 90m east of Maple Avenue - Design and Construction (BUR)	BUR	Linear	Sanitary	-	200 mm	80 m	2031	\$442,000
WW5	375mm WWM on Plains Road E to Maple Avenue - Design and Construction (BUR)	BUR	Linear	Sanitary	-	375 mm	95 m	2031	\$525,000
WW6	375mm WWM on Maple Avenue from Plains Road E to Maple Crossing Boulevard - Design and Construction (BUR)	BUR	Linear	Sanitary	-	375 mm	1370 m	2031	\$7,569,000
WW7	525mm WWM on Brant Street from Blairholm Avenue to Victoria Avenue - Design and Construction (BUR)	BUR	Linear	Sanitary	-	525 mm	245 m	2031	\$1,665,000
WW8	375mm WWM on North Service Road from 100m east of Brant Street to Industrial Street - Design and Construction (BUR)	BUR	Linear	Sanitary	-	375 mm	720 m	2041	\$10,426,000
WW9	Twin 375mm WWM in easement from North Service Road to Truman Street (BUR)	BUR	Linear	Sanitary	-	375 mm	475 m	2041	\$11,860,000
WW10	525mm WWM on Leighland Road from Truman Street to Brant Street - Design and Construction (BUR)	BUR	Linear	Sanitary	-	525 mm	335 m	2041	\$5,082,000
WW11	600mm WWM on Leighland Road from Brant Street to Glendor Avenue - Design and Construction (BUR)	BUR	Linear	Sanitary	-	600 mm	590 m	2041	\$13,861,000
WW12	675mm WWM on Brenda Crescent /Glenwood School Drive from Queensway Drive to Phyllis Street - Design and Construction (BUR)	BUR	Linear	Sanitary	-	675 mm	240 m	2036	\$4,833,000
WW13	750mm WWM on Phyllis Street/Drury Lane from Glenwood School Drive to south of Caroline Street - Design and Construction (BUR)	BUR	Linear	Sanitary	-	750 mm	2020 m	2036	\$19,142,000
WW14	825mm WWM on Drury Lane from south of Caroline Street to Waterfront Trail - Design and Construction (BUR)	BUR	Linear	Sanitary	-	825 mm	260 m	2036	\$2,111,000
WW15	Roseland WWPS Expansion from 175 L/s to 240 L/s - Design and Construction (BUR)	BUR	Vertical	Sanitary Pumping Station	-	65 L/s	N/A	2030	\$4,061,000
WW16	Paletta Gardens WWPS Decommissioning (BUR)	BUR	Vertical	Sanitary Pumping Station	-	N/A	N/A	2034	\$500,000
WW17	750mm WWM on Lakeshore Road from decommissioned Paletta Gardens WWPS to Appleby Line (BUR)	BUR	Linear	Sanitary	Schedule B	750 mm	980 m	2034	\$17,701,000

Master Plan ID	Project Description	Municipality	Construction Type	Project Type	Class EA	Size / Capacity	Length (m)	Year in Service	Total Estimated Cost (\$2025)
WW18	Appleby WWPS Decommissioning (BUR)	BUR	Vertical	Sanitary Pumping Station	-	N/A	N/A	2034	\$250,000
WW19	375mm WWM on Appleby Place from decommissioned Appleby Place WWPS to Lakeshore Road (BUR)	BUR	Linear	Sanitary	Schedule B	375 mm	200 m	2034	\$4,849,000
WW20	900mm WWM on Lakeshore Road from Appleby Line to decommissioned Bromley Park WWPS (BUR)	BUR	Linear	Sanitary	Schedule B	900 mm	260 m	2034	\$6,851,000
WW21	Bromley Park WWPS Decommissioning (BUR)	BUR	Vertical	Sanitary Pumping Station	-	N/A	N/A	2034	\$500,000
WW22	450mm WWM connection from Bromley Park WWPS to Lakeshore Road (BUR)	BUR	Linear	Sanitary	Schedule B	450 mm	40 m	2034	\$3,674,000
WW23	1050mm WWM on Lakeshore Road from decommissioned Bromley Park WWPS to Kenwood Avenue (BUR)	BUR	Linear	Sanitary	Schedule B	1050 mm	945 m	2034	\$21,140,000
WW24	1200mm WWM on Lakeshore Road from Kenwood Avenue to Elizabeth Gardens WWPS (BUR)	BUR	Linear	Sanitary	Schedule B	1200 mm	290 m	2034	\$9,308,000
WW25	Elizabeth Gardens WWPS Expansion from 692 L/s to 2500 L/s (BUR)	BUR	Vertical	Sanitary Pumping Station	Schedule B	2500 L/s	N/A	2034	\$122,207,000
WW26	1200mm Twin WWFM on Lakeshore Road /Burloak Drive/Centennial Bikeway from Elizabeth Gardens WWPS to 220m east of Appleby Line (BUR)	BUR	Linear	Forcemain	Schedule B	1200 mm	5500 m	2034	\$190,440,000
WW27	1500mm WWM on Centennial Bikeway from 220m east to 1050m west of Appleby Line (BUR)	BUR	Linear	Sanitary	Schedule B	1500 mm	1285 m	2034	\$28,141,000
WW28	Pinedale WWPS Decommissioning (BUR)	BUR	Vertical	Sanitary Pumping Station	-	N/A	N/A	2036	\$500,000
WW29	675mm WWM on New Street/Adams Street from decommissioned Pinedale WWPS to Cherry Hill Crescent and on Cherry Hill Crescent from to Lakeshore Road - Design and Construction (BUR)	BUR	Linear	Sanitary	-	675 mm	1595 m	2036	\$20,190,000
WW30	New 315 L/s WWPS with a 675mm WWM inlet to the station (OAK)	OAK	Vertical	Sanitary Pumping Station	Schedule B	315 L/s	N/A	2041	\$21,544,000
WW31	New 400mm WWFM from the new WWPS to the North WWPS (OAK)	OAK	Linear	Forcemain	Schedule B	400 mm	1290 m	2041	\$20,639,000
WW32	North WWPS expansion from 6508 L/s to 7508 L/s at Mid-Halton WWTP (OAK)	OAK	Vertical	Sanitary Pumping Station	-	1000 L/s	N/A	2036	\$10,000,000
WW33	North WWPS expansion from 7508 L/s to 8508 L/s at Mid-Halton WWTP (OAK)	OAK	Vertical	Sanitary Pumping Station	-	1000 L/s	N/A	2046	\$10,000,000
WW34	Mid-Halton WWTP Expansion from 250 to 350 ML/d (OAK)	OAK	Vertical	Wastewater Treatment Plant	Schedule C	100 ML/d	N/A	2046	\$300,000,000
WW35	Oakville Southwest WWTP Expansion from 45 ML/d to 60 ML/d (OAK)	OAK	Vertical	Wastewater Treatment Plant	Schedule C	15 ML/d	N/A	2041	\$75,000,000

Master Plan ID	Project Description	Municipality	Construction Type	Project Type	Class EA	Size / Capacity	Length (m)	Year in Service	Total Estimated Cost (\$2025)
WW36	RTC Control for operational flexibility of Rebecca and Lakeshore Trunk at Rebecca Street and Forsythe Street (OAK)	OAK	Other	Other	-	N/A	N/A	2041	\$703,000
WW37	Navy Street WWPS Decommissioning (OAK)	OAK	Vertical	Sanitary Pumping Station	-	N/A	N/A	2032	\$250,000
WW38	450mm WWM on Navy Street from Front Street to New Water Street WWPS (OAK)	OAK	Linear	Sanitary	-	450 mm	660 m	2032	\$11,080,000
WW39	Water Street WWPS decommissioning (OAK)	OAK	Vertical	Sanitary Pumping Station	-	N/A	N/A	2032	\$250,000
WW40	250mm WWM on Water Street from existing Water Street WWPS to the new Water Street WWPS (OAK)	OAK	Linear	Sanitary	-	250 mm	180 m	2032	\$4,480,000
WW41	New 135 L/s Water Street WWPS (OAK)	OAK	Vertical	Sanitary Pumping Station	Schedule B	135 L/s	N/A	2032	\$12,367,000
WW42	New 300mm WWFM from Water Street WWPS to Rebecca Street trunk sewer (OAK)	OAK	Linear	Forcemain	Schedule B	300 mm	110 m	2032	\$1,113,000
WW43	Ninth Line WWPS Expansion from 738 L/s to 863 L/s - Design and Construction (OAK)	OAK	Vertical	Sanitary Pumping Station	-	125 L/s	N/A	2041	\$5,276,000
WW44	New 500mm WWFM from Ninth Line to Oakville Southeast WWTP - Design and Construction (OAK)	OAK	Linear	Forcemain	-	500 mm	2045 m	2041	\$12,811,000
WW45	Dundas WWPS Expansion from 627 L/s to 1200 L/s - Design and Construction (OAK)	OAK	Vertical	Sanitary Pumping Station	-	573 L/s	N/A	2031	\$1,300,000
WW46	New 75 L/s WWPS and twin 300mm WWFM south of Burnhamthorpe Road to service North Oakville Phase 3 Lands (OAK)	OAK	Vertical	Sanitary Pumping Station	Schedule B	Various	N/A	2031	\$16,845,000
WW47	Biosolids Composting Facility - Design and Construction (MIL)	MIL	Vertical	Biosolids Facility	-	N/A	N/A	2032	\$80,750,000
WW48	Biosolids Composting Storage and Distribution Facility - Design and Construction (MIL)	MIL	Vertical	Biosolids Facility	-	N/A	N/A	2032	\$13,000,000
WW49	450mm WWM on Eighth Line from 800m south of Britannia Road to Lower Base Line - Design and Construction (MIL)	MIL	Linear	Sanitary	-	450 mm	2470 m	2046	\$28,219,000
WW50	450mm WWM on Lower Base Line from Eighth Line to Trafalgar Road - Design and Construction (MIL)	MIL	Linear	Sanitary	-	450 mm	1440 m	2046	\$24,261,000
WW51	525mm/ 675mm WWM on Trafalgar Road from Britannia Road to Lower Base line - Design and Construction (MIL)	MIL	Linear	Sanitary	-	Various	1925 m	2046	\$34,663,000
WW52	675mm WWM on Lower Base Line from Eighth Line to 1700m east of Fourth Line (MIL)	MIL	Linear	Sanitary	Schedule B	675 mm	2440 m	2046	\$31,015,000
WW53	675mm WWM on Lower Base Line from 1700m east to Fourth Line (MIL)	MIL	Linear	Sanitary	Schedule B	675 mm	1705 m	2046	\$35,293,000

Master Plan ID	Project Description	Municipality	Construction Type	Project Type	Class EA	Size / Capacity	Length (m)	Year in Service	Total Estimated Cost (\$2025)
WW56	Drumquin WWPS Expansion from 1200 L/s to 2350 L/s - Design and Construction (MIL)	MIL	Vertical	Sanitary Pumping Station	Schedule B	1150 L/s	N/A	2041	\$48,539,000
WW59	600mm WWM on Thompson Road S from Hepburn Road to Britannia Road W - Design and Construction (MIL)	MIL	Linear	Sanitary	-	600 mm	2005 m	2031	\$31,009,000
WW60	675mm WWM along Fulton Street from Oak Street to Fulton Street WWPS (further investigation required) (MIL)	MIL	Linear	Sanitary	-	675 mm	250 m	2031	\$5,808,000
WW61	Fulton - Local flooding study (to review surcharging within local sewers west of Fulton Street / Oak Street and along Ontario Street) (MIL)	MIL	Other	Study	-	N/A	N/A	2028	\$254,000
WW62	Fulton WWPS 10,000m ³ Equalization Tank (MIL)	MIL	Vertical	Sanitary Pumping Station	Eligible for Screening	10,000 m ³	N/A	2033	\$33,257,000
WW63	Tremaine WWPS decommissioning and diversion to Tremaine Road trunk sewer - Construction (MIL)	MIL	Vertical	Sanitary Pumping Station	-	N/A	N/A	2041	\$500,000
WW64	375mm WWM on Louis St Laurent Avenue from Urell Way to the new Tremaine Road trunk sewer south of Pan Am Boulevard - Design and Construction (MIL)	MIL	Linear	Sanitary	-	375 mm	655 m	2041	\$4,636,000
WW65	525mm on new Road from Tenth Line to Eight Line - Design and Construction (HHGEO)	HHGEO	Linear	Sanitary	-	525 mm	2800 m	2036	\$28,782,000
WW66	John Street WWPS expansion from 87 L/s to 155 L/s - Design and Construction (HHGEO)	HHGEO	Vertical	Sanitary Pumping Station	-	68 L/s	N/A	2046	\$8,912,000
WW67	Twin 600mm WWM on Park Avenue from Mill Street to Main Street - Design and Construction (HHGEO)	HHGEO	Linear	Sanitary	-	600 mm	340 m	2032	\$7,816,000
WW68	600mm WWM on Main Street from Park Avenue to New Main Street WWPS - Design and Construction (HHGEO)	HHGEO	Linear	Sanitary	-	600 mm	750 m	2032	\$14,904,000
WW69	Main Street WWPS Decommissioning (HHGEO)	HHGEO	Vertical	Sanitary Pumping Station	-	N/A	N/A	2032	\$500,000
WW70	525mm WWM on Arborglen Drive and Main Street S from the decommissioned Main St WWPS to the new station - Design and Construction (HHGEO)	HHGEO	Linear	Sanitary	-	525 mm	460 m	2032	\$13,501,000
WW71	600mm WWM overflow from Silver Creek trunk sewer to the new Main Street WWPS - Design and Construction (HHGEO)	HHGEO	Linear	Sanitary	-	600 mm	90 m	2032	\$5,392,000
WW72	New 545 L/s Main Street WWPS - Design and Construction (HHGEO)	HHGEO	Vertical	Sanitary Pumping Station	Schedule B	545 L/s	N/A	2032	\$28,504,000
WW73	Twin 600mm WWFM on Main Street S and Eighth Line from New Main St WWPS to Eaton Street - Design and Construction (HHGEO)	HHGEO	Linear	Forcemain	-	600 mm	1930 m	2032	\$35,173,000
WW74	Annual Wastewater Flow Monitoring Program (REG)	Region Wide	Other	Study	-	N/A	N/A	Various	\$47,784,000

Master Plan ID	Project Description	Municipality	Construction Type	Project Type	Class EA	Size / Capacity	Length (m)	Year in Service	Total Estimated Cost (\$2025)
WW75	Wastewater Treatment Plant Capacity Review (REG)	Region Wide	Other	Study	-	N/A	N/A	2028	\$200,000
WW76	Halton Wastewater Master Plan (REG)	Region Wide	Other	Study	Master Plan	N/A	N/A	Various	\$4,440,000
WW77	Wastewater Collection System Analysis (REG)	Region Wide	Other	Study	-	N/A	N/A	Various	\$5,400,000
WW78	Wastewater Treatment Capacity Annual Monitoring Report (REG)	Region Wide	Other	Study	-	N/A	N/A	Various	\$1,512,000
Total Wastewater Capital Program									\$1,761,293,000

Capital Program Projects

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Biosolids Management Centre (BM)
- Equalization Tank (EQ)
- Decommissioning Projects
- Real-Time-Control (RTC)
- Proposed Wastewater Mains

Allocation Program Projects

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Biosolids Management Centre (BM)
- Equalization Tank (EQ)
- Decommissioning Projects
- Real-Time-Control (RTC)
- Proposed Projects

Existing Infrastructure

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Biosolids Management Centre (BM)
- Equalization Tank (EQ)
- Forcemains
- Trunk Wastewater Mains
- Wastewater Mains
- Municipal Boundary

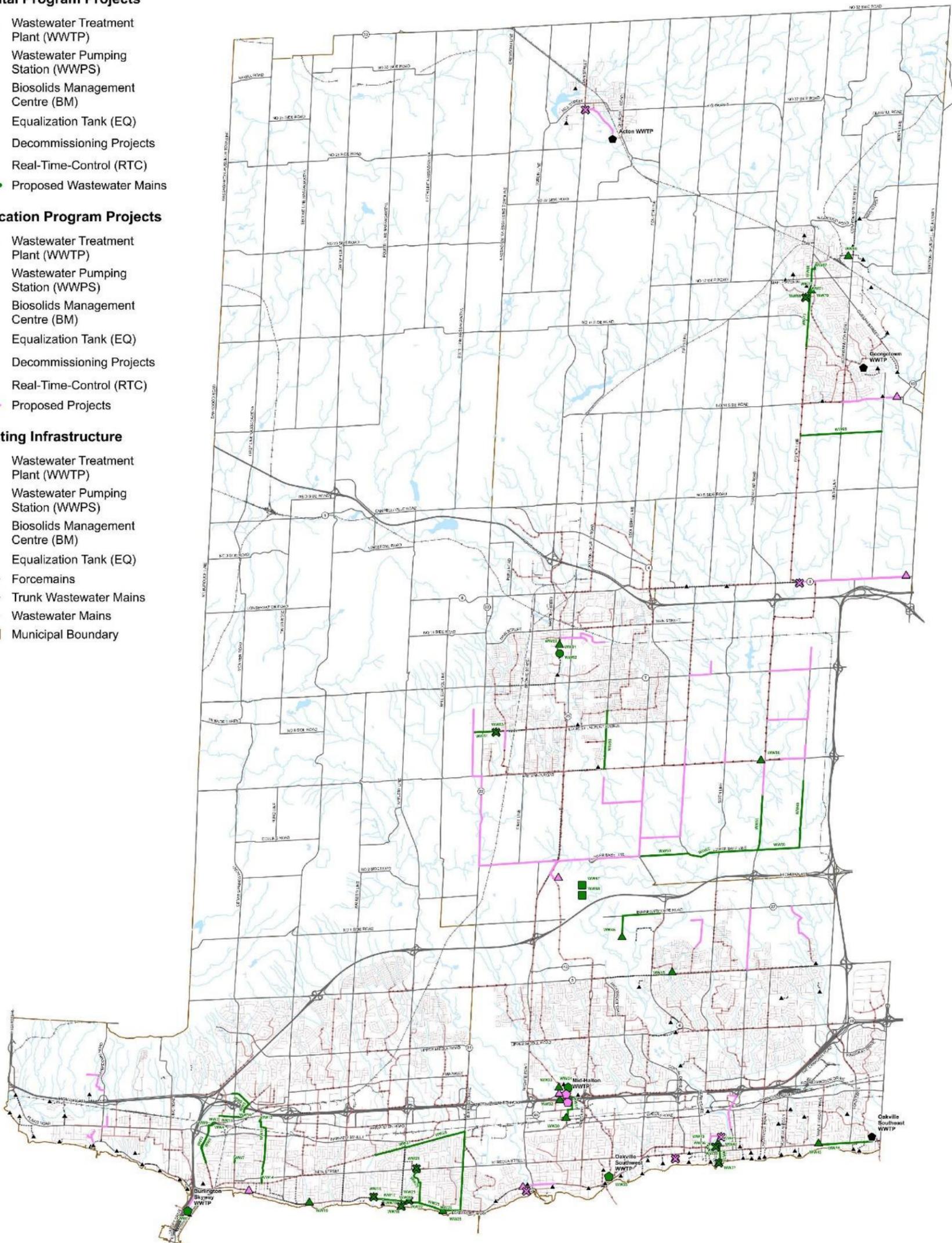


Figure 46 – Capital Program Map for the Preferred Wastewater Servicing Strategy



6.0 Implementation – From Plan to Action

- 6.1 Phasing and Implementation Strategy
 - 6.2 MCEA Process and Project Categorization
 - 6.3 Implementation Commitments and Next Steps
 - 6.4 Monitoring and Adaptive Management
-

6.0 Implementation – From Plan to Action

The IMP is a living document that is designed to remain flexible and responsive to Local Municipal growth priorities and changes in the land use context over time. The IMP sets a clear path for implementing the Region’s preferred wastewater servicing strategy to support long-term growth and maintain reliable and efficient service delivery to 2051. The IMP translates the recommended wastewater servicing strategy into an actionable, phased capital program with associated timelines and implementation considerations. It also provides a framework for ongoing monitoring and refinement to ensure that infrastructure delivery remains responsive to growth priorities, system conditions, and regulatory requirements.

6.1 Phasing and Implementation Strategy

The wastewater infrastructure phasing and implementation strategy has been developed to align the delivery of capital projects with projected growth, system performance needs, and coordination with other Regional infrastructure programs based on the following planning horizons: 2021, 2026, 2031, 2036, 2041, 2046 and 2051.

At each horizon, servicing needs were analyzed to determine when new infrastructure is required to accommodate growth and maintain performance objectives such as resolving potential system capacity constraints. Project timing was then refined to maintain flexibility for potential changes in growth priorities and system conditions.

Key factors considered in developing the phasing plan include:

- **Protected Population and Employment Growth:** Ensure wastewater infrastructure meets future Region needs.
- **Servicing Dependencies:** Downstream impacts such as constraints or other servicing strategies that must be in place before a project can start.
- **Construction Coordination:** Coordination with other Regional infrastructure programs such as water and transportation. This includes communication with relevant internal departments and divisions and external groups, such as the Region’s Local Municipalities.
- **Project Bundling:** Opportunities to group projects geographically or functionally to improve efficiency and minimize disruption.
- **Lead Time Requirements:** Recognition of infrastructure delivery (studies, design and construction), regulatory approvals, property acquisition, MCEA process, and other factors influencing project readiness.

Wastewater projects have been phased on an annual basis out to 2051, as shown in **Figure 47**, with capital costs categorized into five major components: Feasibility Study, EA, Design, Property, and Construction. This approach supports integration with Halton’s capital planning, budgeting, and Development Charges framework. Costs and schedule estimates represent high-level planning inputs and will be refined as projects progress through subsequent stages of study, design, and implementation.

Proposed Capital Projects

- New / Upgrade
- Decommission
- Real-Time-Control (RTC)

Proposed Projects (In-Service Years)

- Allocation Program
- 2028-2031
- 2032-2036
- 2037-2041
- 2042-2046
- 2047-2051

Existing Infrastructure

- Wastewater Treatment Plant (WWTP)
- Wastewater Pumping Station (WWPS)
- Biosolids Management Centre (BM)
- Equalization Tank (EQ)
- Force mains
- Trunk Wastewater Mains
- Wastewater Mains
- Municipal Boundary

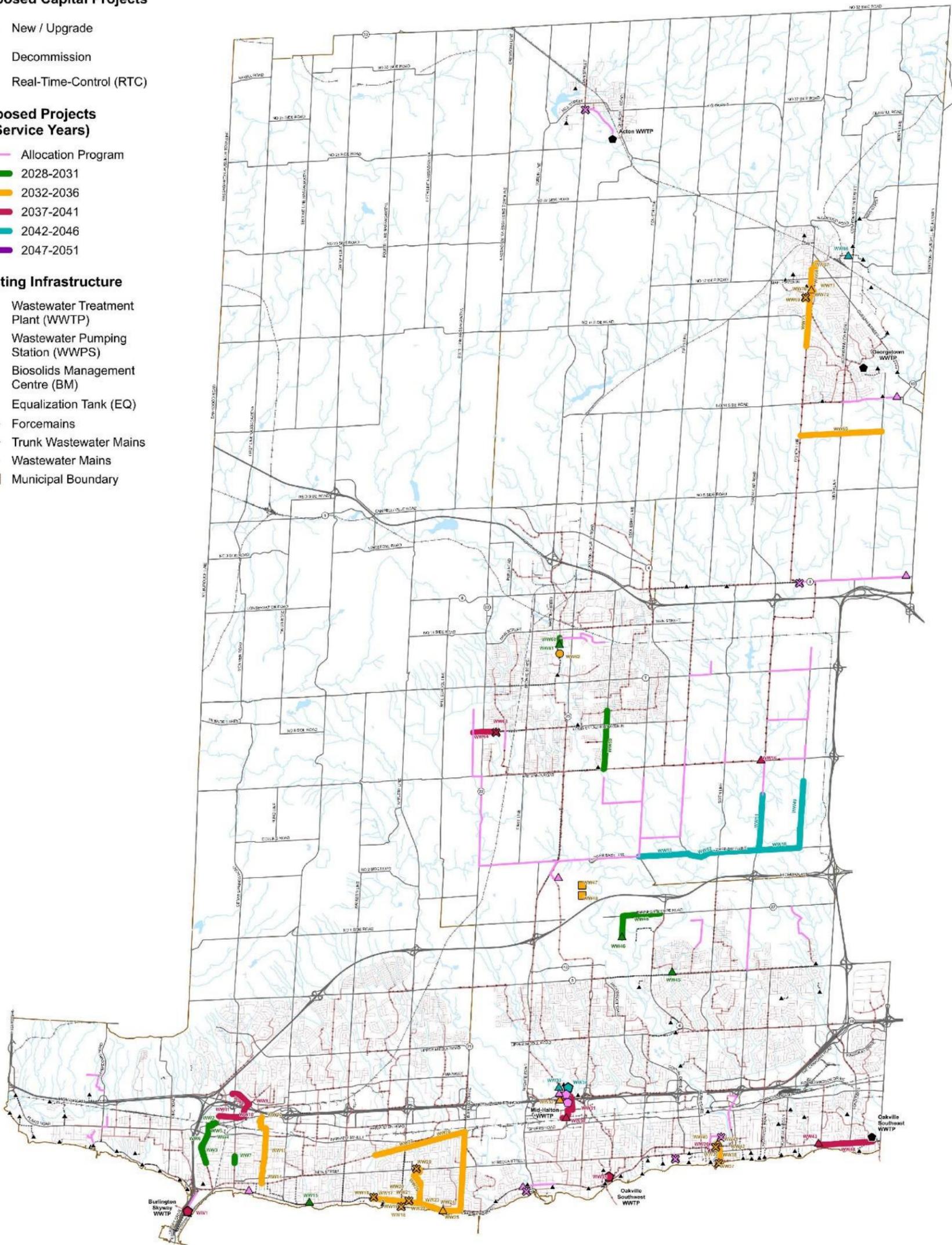
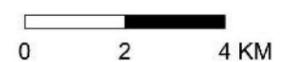


Figure 47 – Capital Program and Implementation Map for the Preferred Wastewater Servicing Strategy



6.2 MCEA Process and Project Categorization

The IMP has been prepared in accordance with Approach 1 of the MCEA process. As such, it fulfills Preliminary Phases 1 and 2 of the MCEA process for wastewater servicing needs across the Region and will be used as support for subsequent Schedule B and C project specific studies.

Wastewater infrastructure projects identified through the IMP fall into the following categories:

- **Exempt Projects (Formerly Schedule A and A+):** Projects that are generally limited in scale and have minimal adverse effects on the environment. These include routine, maintenance, or low-impact work that are small in scale, with predictable and easily manageable impacts.
- **Eligible for Screening to Exempt:** Certain projects may be eligible for exemption from further MCEA requirements if they meet specific criteria and successfully complete the appropriate screening processes. These processes assess factors such as proximity to environmentally sensitive natural areas, cultural heritage or archaeological potential, and adjacent sensitive land uses. Screening may include, but is not limited to, the Archaeological Screening Process (ASP) and other evaluations outlined in the MCEA manual. If the screening confirms minimal environmental impact, the project may proceed without a full Schedule B or C Class EA. Otherwise, the applicable MCEA process must be followed. Proponents may also choose to bypass screening entirely and undertake a full Schedule B or C MCEA process and must still obtain any other required permits or approvals.
- **Schedule B Projects:** Projects with moderate potential for environmental effects. These must undergo Phases 1 and 2 of the MCEA process and will require project-specific investigations, consultation with the public, review agencies as well as First Nations and Indigenous Communities, and documentation before proceeding to implementation.
- **Schedule C Projects:** Projects with potential for significant environmental impacts. These require completion of all phases of the MCEA process, including project-specific investigations, consultation with the public, review agencies as well as First Nations and Indigenous Communities, and the preparation and filing of an Environmental Study Report (ESR).

The MCEA requirements for each project have been identified in the capital program. Exempt projects may proceed directly to design and construction, while projects eligible for screening may undergo the Archaeological Screening Process to determine if they qualify for exemption from the MCEA process. The IMP was developed as a broad-level assessment and acknowledges that further detailed studies and targeted consultation and engagement with the public, review agencies and First Nations and Indigenous Communities will be required to fulfill the specific MCEA requirements for Schedule B and C projects identified within the IMP.

The following summarizes the MCEA requirements applicable to the recommended wastewater capital projects identified through the IMP, including instances where projects have been grouped in accordance with the MCEA principle of planning large or extended project in its entirety. These MCEA requirements are based on the preferred servicing strategies identified at the time of the Master Plan and may be

refined or updated as projects advance or as strategies are adjusted in response to evolving growth or system priorities.

Table 21 – MCEA Requirements for Wastewater Capital Projects

Item	Class EA Schedule	Project ID	Project Description
1	Schedule C	7548	Mid-Halton WWTP expansion from 195 ML/d to 250 ML/d (OAK)
		WW32	North WWPS expansion from 6508 L/s to 7508 L/s at Mid-Halton WWTP (OAK)
2	Schedule C	7946	Twin 2400mm WWM inlet to Skyway WWTP parallel to the QEW (BUR)
		WW1	Skyway WWTP Expansion from 140 ML/d to 170 ML/d (BUR)
3	Schedule B	WW2	1200mm WWM on Plains Road E from 100m west of Glendor Avenue to Maple Avenue (BUR)
4	Schedule B	WW16	Paletta Gardens WWPS Decommissioning (BUR)
		WW17	750mm WWM on Lakeshore Road from decommissioned Paletta Gardens WWPS to Appleby Line (BUR)
		WW18	Appleby WWPS Decommissioning (BUR)
		WW19	375mm WWM on Appleby Place from decommissioned Appleby Place WWPS to Lakeshore Road (BUR)
		WW20	900mm WWM on Lakeshore Road from Appleby Line to decommissioned Bromley Park WWPS (BUR)
		WW21	Bromley Park WWPS Decommissioning (BUR)
		WW22	450mm WWM connection from Bromley Park WWPS to Lakeshore Road (BUR)
		WW23	1050mm WWM on Lakeshore Road from decommissioned Bromley Park WWPS to Kenwood Avenue (BUR)
		WW24	1200mm WWM on Lakeshore Road from Kenwood Avenue to Elizabeth Gardens WWPS (BUR)
		WW25	Elizabeth Gardens WWPS Expansion from 692 L/s to 2500 L/s (BUR)
		WW26	1200mm Twin WWFM on Lakeshore Road /Burloak Drive /Centennial Bikeway from Elizabeth Gardens WWPS to 220m east of Appleby Line (BUR)
WW27	1500mm WWM on Centennial Bikeway from 220m east to 1050m west of Appleby Line (BUR)		
5	Schedule B	WW30	New 300 L/s WWPS with a 675mm WWM inlet to the station (OAK)
		WW31	New 400mm WWFM from the new WWPS to the North WWPS (OAK)
6	Schedule C	WW33	North WWPS expansion from 7508 L/s to 8508 L/s at Mid-Halton WWTP (OAK)
		WW34	Mid-Halton WWTP Expansion from 250 to 350 ML/d (OAK)
7	Schedule C	WW35	Oakville Southwest WWTP Expansion from 45 ML/d to 60 ML/d (OAK)

Item	Class EA Schedule	Project ID	Project Description
8	Schedule B	WW41	New 135 L/s Water Street WWPS (OAK)
	Schedule B	WW42	New 300mm WWFM from Water Street WWPS to Rebecca Street trunk sewer (OAK)
9	Schedule B	WW43	Twin 600mm WWFM on Main Street S and Eighth Line from New Main St WWPS to Eaton Street - Design and Construction (HHGEO)
		WW72	New 545 L/s Main Street WWPS - Design and Construction (HHGEO)
10	Schedule B	WW46	New 75 L/s WWPS and twin 300mm WWFM south of Burnhamthorpe Road to service North Oakville Phase 3 Lands (OAK)
11	Schedule B	WW52	675mm WWM on Lower Base Line from Eighth Line to 1700m east of Fourth Line (MIL)
		WW53	675mm WWM on Lower Base Line from 1700m east to Fourth Line (MIL)
12	Schedule B	WW56	Drumquin WWPS Expansion from 1200 L/s to 2350 L/s - Design and Construction (MIL)
13	Eligible for Screening	WW62	Fulton WWPS 10,000m ³ Equalization Tank (MIL)

Note: for all IMP projects, the last version of the MCEA process and the Environmental Act should be referenced at the time of the future studies.

6.3 Implementation Commitments and Next Steps

During the next steps of project implementation, including future studies and detailed design, the following requirements will be considered:

- Continued engagement with Local municipalities, agencies, the public, and First Nations and Indigenous Communities where treaty rights may be impacted by projects.
- Completion of additional site-specific supporting investigations as required (e.g., source water protection, geotechnical, hydrogeological, topographic surveys, floodplain analysis, etc.).
- Consideration of potential impacts to and risks from natural hazards and wetlands (e.g., flooding, erosion, unstable soils/bedrock) to ensure that proposed works avoid or minimize impacts and do not negatively affect hazard or wetland functions, in accordance with conservation authority approval requirements.
- Development of preliminary design.
- Assessment of potential utility relocations, including consideration of potential impacts to natural hazards, wetlands, and other environmental features.
- Refinement of infrastructure locations and alignments.
- Review and confirmation of property requirements.
- Identification of preferred construction methodologies, including review and mitigation of potential construction-related impacts (e.g., traffic, noise and vibration, dust, dewatering requirements, service disruptions, etc.).
- Assessment of installation methods (e.g., trenchless vs. open cut) for water infrastructure near or crossing watercourses and valley lands.

- Fulfillment of all provincial, municipal, and conservation authority permits and approval requirements.
- Continued engagement with Local municipalities, the public, and First Nations and Indigenous Communities where treaty rights may be impacted by projects.

6.4 Monitoring and Adaptive Management

The IMP provides a long-range framework for infrastructure delivery that reflects current understanding of existing and future servicing needs while also recognizing that servicing priorities will evolve over time. As growth progresses and new information becomes available, it is essential that assumptions supporting the plan are reviewed. The Region will implement a monitoring approach to track key technical, regulatory, and planning considerations, ensuring that the timely and responsive delivery of the recommended infrastructure program remains efficient and aligned with evolving conditions and growth priorities.

The monitoring framework will enable refinement of the wastewater infrastructure phasing and implementation plan over time. Monitoring will be carried out by Regional staff in consideration of the following:

- Technical thresholds, such as facility and trunk system capacity through flow monitoring data and refined hydraulic model calibration. Certain facilities, trunk sewers, and secondary plan areas may require more frequent monitoring based on their sensitivity to growth pressures or system capacity constraints. These areas will continue to be identified/refined and monitored as growth occurs.
- The Region and the Local Municipalities recognize the importance of monitoring growth across Halton and will collaborate to continue implementation of an Enhanced Growth Monitoring Framework that supports the delivery of Regional infrastructure to support Local Municipal growth strategies, while still ensuring growth is managed effectively and sustainably across the Region.
- The Region will continue to coordinate with Local Municipalities regarding the timing and implementation of Regional infrastructure projects, particularly where works occur within municipal rights-of-way or in areas of intensified growth. This coordination may include ongoing communication related to the status and timing of growth-related capital projects to support alignment with municipal capital programs and planning initiatives.
- Completion of planning studies, Schedule B or C MCEA studies, and detailed design, which may refine scope and/or timing of projects.
- Monitoring will consider the status and duration of permitting and approval processes required under applicable legislation, including approvals from the MECP, Conservation Authorities (e.g., under O.Reg. 41/24), and other regulatory bodies. Early identification of permitting risks or extended review periods will help the Region adjust project timelines and sequencing.
- The Region will monitor the status of related projects and adjust phasing as needed to maintain service continuity, align timelines, and support coordinated infrastructure delivery.
- Status of funding sources and programs to assess financial readiness for project implementation.

- Internal and external resourcing to enable project delivery on schedule, particularly where multiple high-priority projects converge.
- The Region will continue to monitor updates to federal, provincial and local policies, legislation, and technical guidelines that may influence the planning, design, or delivery of wastewater infrastructure. Where applicable, the Region will adapt implementation strategies to maintain compliance and minimize delays associated with new or evolving regulatory requirements.

The phasing, implementation and monitoring plan for the wastewater system provides a framework to guide infrastructure delivery through to 2051. It balances technical requirements and growth priorities, while providing the flexibility needed to adapt to future uncertainties. This plan will continue to evolve through ongoing monitoring and coordination across planning, engineering, and financial functions.

7.0 Conclusion

7.0 Conclusion

This volume of the IMP presents a comprehensive strategy for addressing the Region's long-term wastewater servicing needs to 2051. This Wastewater volume is part of a broader strategy that integrates water, wastewater, and transportation to ensure Halton's infrastructure remains resilient, adaptive, and sustainable. Grounded in technical assessments, population and employment forecasts, and updated design criteria and levels of service, the IMP Wastewater volume outlines a preferred servicing strategy to support anticipated growth to 2051.

This volume documents a detailed analysis of the Region's existing wastewater collection systems, supported by hydraulic modelling and infrastructure assessments for treatment plants, pumping stations, and sanitary trunk sewers. A structured evaluation framework was applied to assess a range of servicing alternatives, leading to the selection of a preferred strategy that supports planned growth to 2051 while balancing system resiliency, operational flexibility, cost efficiency, and alignment with environmental planning requirements.

This volume supports Halton's growth priorities and increasing wastewater treatment and collection demands through:

- Treatment plant expansion strategy that maintains levels of service while expanding capacity.
- Focus area servicing solutions designed to adjust to shifting population and growth areas, leveraging the existing infrastructure network.
- Regional level servicing solutions that provide long-term capacity as well as enhanced system flexibility

The capital program associated with the preferred servicing strategy identifies key infrastructure investments needed to meet long-term demands and is supported by an implementation approach based on servicing dependencies, growth forecasts, and the timing of required approvals and subsequent studies. The plan also identifies MCEA requirements for proposed projects and outlines next steps related to monitoring, adaptive management, and future project-specific studies including further consultation and engagement with First Nations and Indigenous Communities and interested parties.

The strategy presented in this volume provides the foundation for delivering safe, sustainable, and coordinated wastewater services that supports local growth priorities and planned growth in Halton and community well-being. The outcomes of this volume will guide future wastewater infrastructure planning and investment decisions in the Region.

This document is the fourth of six (6) volumes, with the previous volume focusing on water, and subsequent volumes focusing on transportation, and consultation.