

Document Under Separate Cover to
Report PW-59-11/LPS73-11/CS-45-11

Halton Region

Sustainable Halton Water and Wastewater Master Plan Executive Summary

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Project Number:

60114062

Date:

September 12, 2011

Distribution List

# of Hard Copies	PDF Required	Association / Company Name
1	1	Halton Region

Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	CH	August 30, 2011	Draft
2	CH	Sept 7, 2011	Final Draft
3	CH	Sept 12, 2011	Final

AECOM Signatures

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1. Background

Sustainable Halton is an integrated planning and engineering process designed to provide Halton Region with sustainable growth and servicing strategies to meet the population and employment needs to year 2031. As part of the Sustainable Halton process, a Water and Wastewater Master Plan has been completed that outlines the long term water and wastewater servicing strategies.

The Sustainable Halton Water and Wastewater Master Plan provides a Region-wide review, evaluation and development of water and wastewater servicing strategies for all urban service areas. The Master Plan has used updated planning population and employment estimates for the 2031 planning horizon based on the final Best Planning Estimates as endorsed by Halton Region Council. The study area includes the South Halton systems in Burlington, Oakville, Milton and Halton Hills 401 Corridor as well as the urban systems in Georgetown and Acton. This Master Plan builds on the previous work undertaken as part of the South Halton Master Plans and Updates, related studies for the North Halton systems and the Wastewater Pumping Station Capital Needs Assessment and Master Plan Study for Oakville and Burlington. This Master Plan is a critical component in the integrated planning process of the Sustainable Halton program and provides the framework and vision for the water and wastewater servicing needs for Halton Region to 2031.

2. Historical Halton Region Master Plans

The Sustainable Halton Water and Wastewater Master Plan is the fourth generation of long term infrastructure planning reports for Halton Region dating back to 1995.

Further to the 1995 work, the 2002 Halton Water and Wastewater Master Plan Review was completed. The 2002 Master Plan Review report established updated servicing strategies for South Halton only to meet growth up to 2016 with long term considerations for growth up to buildout of the then identified urban service areas.

The Master Plan was further updated in 2008. The 2008 South Halton Water and Wastewater Master Plan Update was also only focused on infrastructure in Oakville, Burlington, Milton and Halton Hills Corridor. At that time, the planning projections were updated to the year 2021. The servicing strategies established in the 2008 Master Plan Update addressed the servicing needs to year 2021 and also identified key infrastructure to support servicing to 2031.

The current Sustainable Halton Water and Wastewater Master Plan has considered analyses undertaken in the previous Master Planning processes. However, this Master Plan reflects the total servicing needs of an expanded urban area out to 2031, addressing the Places to Grow Act servicing requirements, and provides updated cost estimates and implementation programs. The servicing strategies have also been updated to reflect not only the South Halton systems, but also the urban systems in Georgetown and Acton. The Sustainable Halton Water and Wastewater Master Plan has been scoped as a Region-wide study.

3. Master Planning Process

The Municipal Class Environmental Assessment (EA) process clearly defines approaches for completion of Master Plans within the Class EA context. Halton Region has prepared the Sustainable Halton Master Plan based generally on Approach 2, which involves preparing a Master Plan document at the conclusion of Phases 1 and 2 of the Class EA process. This approach allows for all Schedule A, A+ and B projects

identified in the Sustainable Halton Master Plan to move forward to implementation. The Master Plan provides systematic evaluation and documentation to support the Schedule B Class EA requirements along with any applicable review agency commitments prior to their respective implementation. As well, Halton Region has identified Schedule C projects that will proceed with separate studies in order to fully meet the Class EA requirements and allow for greater detail in the evaluation of alternatives and design concepts. The Schedule C projects would continue to Phases 3 and 4 of the Class EA process and have an Environmental Study Report (ESR) completed for public filing.

4. Study Communication and Consultation

Communication and consultation has been an important component of the Sustainable Halton Water and Wastewater Master Plan Class EA process. At the outset of the Master Plan process a Public Consultation Plan was developed. The primary goal of the plan was to carry out meaningful consultation with interested and affected stakeholders. The main goals and objectives were to:

- Present clear and concise information to stakeholders at key stages of the study process
- Solicit community, regulatory and Regional staff input
- Meet Municipal Class EA consultation requirements
- Ensure the general public, regional and municipal councillors, stakeholders, external agencies (including federal and provincial) and special interest groups have an opportunity to participate in the study process;
- Ensure that factual information is provided to interested and affected stakeholders as soon as reasonably possible; and,
- Make contact with external agencies to obtain legislative or regulatory approvals, or to collect pertinent technical information

The following public consultation activities were undertaken as part of the Sustainable Halton Water and Wastewater Master Plan process.

a) Consultation during the Sustainable Halton Growth Conformity Exercises:

- Participation at the Public Information Centres
 - September/October 2007
 - January 2008
 - September 2008
 - May/June 2009

b) Consultation during the Sustainable Halton Water and Wastewater Master Plan:

- Notice of Commencement – May 2010
- Public Information Centres No. 1
 - Held in each Local Municipality
 - May/June 2010
- Public Information Centres No. 2
 - Held in each Local Municipality
 - February/March 2011

- Technical Advisory Committee (TAC) Meetings
 - Interactive group comprising Region staff, Local Municipality staff and Approval Agencies
 - TAC No. 1 – May 2010
 - TAC No. 2 – April 2011
- Review Agency Consultation
 - Independent review of draft documentation and approval needs with Conservation Halton (CH), Credit Valley Conservation (CVC) and Niagara Escarpment Commission (NEC)
 - August/September 2011
- Development Community Consultation and Co-ordination
 - Additional coordination meetings with the development community and representatives to review and discuss servicing strategies including meetings held in March 2011 and June 2011
 - Building, Industry and Land Development (BILD) – March 2011
 - Halton Developers Liaison Committee (HDLC) – March 2011 and September 2011
 - Milton / Georgetown Developers – March 2011
 - Milton Realtors – June 2011
- Notice of Completion – October 2011
- All project publications, presentation materials and other documentation has been made available to the general public through the Region's website (<http://www.halton.ca>)

5. Study Area

Halton Region is situated in the west-central portion of the Greater Golden Horseshoe and covers 959 square kilometres (370 square miles). The Region has a 25 kilometre frontage along Lake Ontario to the south and extends north of the Niagara Escarpment.

The study area for the Sustainable Halton Water and Wastewater Master Plan encompasses the existing designated urban areas in the Town of Oakville, City of Burlington, Town of Milton and the Town of Halton Hills 401 Corridor as well as the urban areas of Acton and Georgetown (including the hamlets of Stewarttown, Norval, and Glen Williams) located within the Town of Halton Hills. The study area includes development in the existing 2006 Built Boundary (Intensification) and new Greenfield development outside of the existing urban areas in Oakville, Milton and Georgetown. The Sustainable Halton Study Area is depicted in Figure 1.

The study area land use is based on the Halton Regional Official Plan amended by ROPA 25, ROPA 38 and ROPA 39 through the Sustainable Halton growth planning exercise. Through the Sustainable Halton process, Best Planning Estimates (BPE) data for Population, Occupied Dwelling Units and Employment was developed through to year 2031. The BPE data served as the basis for the master planning exercises and was updated in June 2011 (BPE Data June 2011).

Integral to the study area and the Places To Grow Act requirements, intensification areas within the 2006 Built Boundary across the Region have been identified by the Local Municipalities in collaboration with Halton Region. The intensification areas are focused in Burlington (along the Brant Street and Fairview Street corridors), Oakville (along Kerr Street, in the Trafalgar Road/South of QEW area and south of Dundas Street), Milton (within "historic" Milton) and parts of Georgetown and Acton. The Sustainable Halton Master Plan has integrated trunk level servicing review as well as review of the impact on local level infrastructure in these areas.

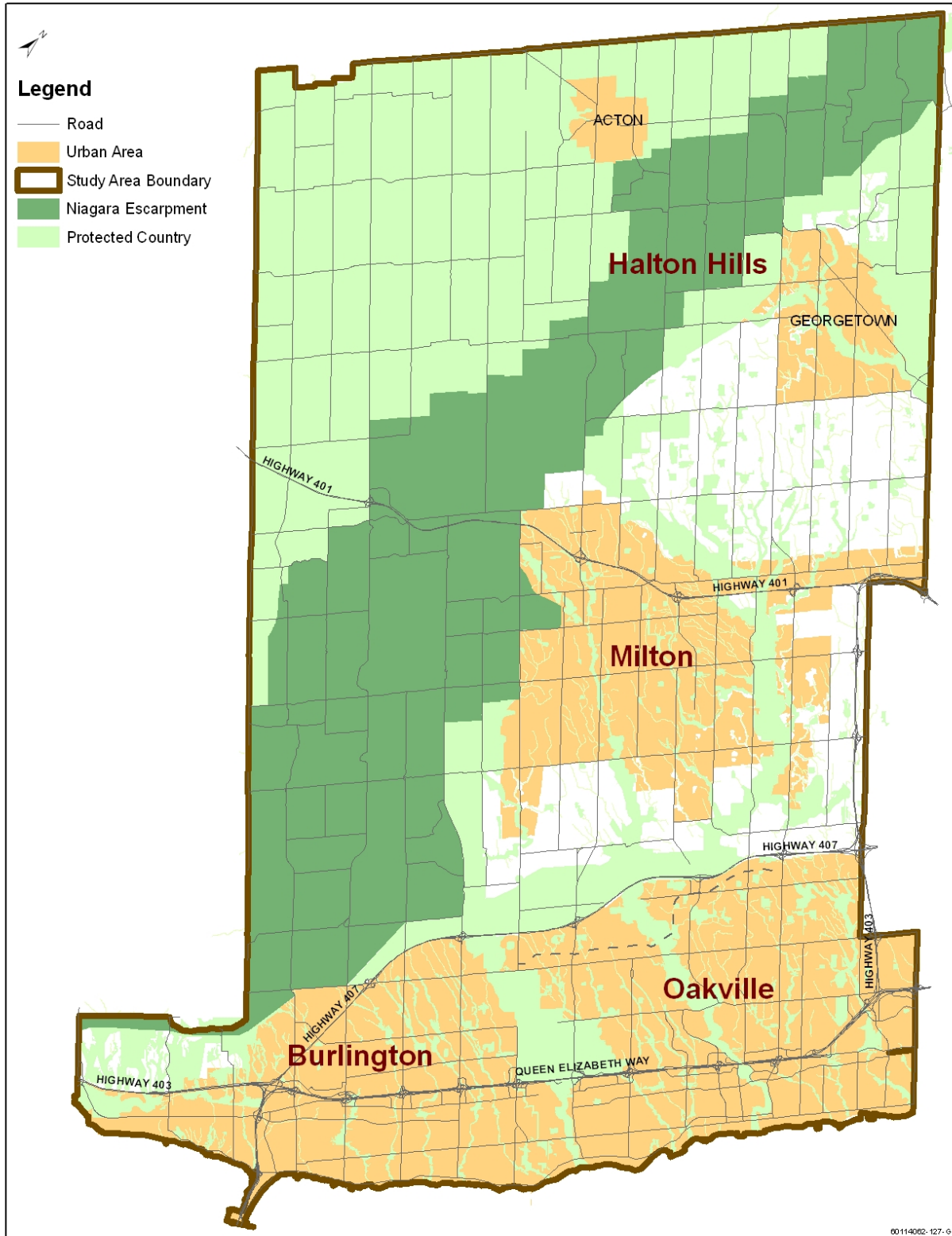


Figure 1 Sustainable Halton Study Area

6. Planning Projections

6.1 Region Projections

The planning data set is based on the Halton Region BPE Data June 2011. This data was geographically distributed by Traffic Survey Zone (TSZ) and subsequently more discretely to smaller areas identified as Small Geographic Units (SGUs) for Master Planning analyses. The BPE Data June 2011 are presented in Table 1 and Table 2. It should be noted that the BPE Data has been co-ordinated with Halton Region Planning and reflects projections with residential Census undercount of approximately 4%. The BPE Data projections have been utilized with Halton Region design criteria to ensure that future planning reflects actual future population. As such, the servicing strategies developed under Sustainable Halton Water and Wastewater Master Plan will meet the Province of Ontario Places To Grow Act target for Halton Region of approximately 780,000 persons and 390,000 employees by 2031. As such, in Table 1 below, the 752,537 population total in 2031 (recognizing undercount) equates to the Places to Grow Act target of 780,000.

Table 1 Halton Region Population Projections to 2031

	Total Population					
	2006	2011	2016	2021	2026	2031
Oakville	165,529	174,780	197,702	221,826	234,122	246,399
Burlington	164,446	173,761	175,438	178,847	182,034	186,169
Milton	53,938	88,438	124,645	161,750	195,735	228,084
Halton Hills	54,978	56,066	57,922	61,672	77,003	91,885
TOTAL	438,891	493,045	555,707	624,094	688,895	752,537

Table 2 Halton Region Employment Projections to 2031

	Employment - Employees					
	2006	2011	2016	2021	2026	2031
Oakville	82,089	90,969	106,485	120,796	122,578	128,359
Burlington	87,854	95,656	98,710	102,846	104,145	105,349
Milton	27,232	44,452	62,553	81,106	96,631	114,330
Halton Hills	19,228	19,856	20,744	22,936	32,356	41,962
TOTAL	216,403	250,932	288,493	327,684	355,710	390,000

6.2 Service Area Projections

The distribution of population and employment growth among the primary geographic regions of the Sustainable Halton study area up to year 2031 were prepared in partnership between the Halton Region and the Region's individual Local Municipalities. The planning data was further reviewed to determine the growth within the existing 2006 Built Boundary as well as Greenfield areas. To evaluate the impact on the water and wastewater systems, it is essential to document the population and employment growth in

the service areas connected to the municipal systems. The total serviced population and employment includes the 2006 Built Boundary areas, designated Greenfield growth areas as well as a small percentage of rural areas on municipal systems but excludes rural areas on private systems. The service area projections are summarized in Table 3 and Table 4.

Table 3 Service Area Population Projections to 2031

	Serviced Population (Persons)					
	2006	2011	2016	2021	2026	2031
Oakville	165,412	174,655	197,584	221,709	234,007	246,282
Burlington	160,833	170,176	171,919	175,393	178,648	182,834
Milton	48,332	82,752	118,931	155,945	189,587	221,450
Halton Hills 401 Corridor	0	0	0	0	0	0
Sub-Total South Halton	374,577	427,583	488,434	553,047	602,242	650,566
Acton	10,233	10,036	9,796	10,379	12,874	13,981
Georgetown¹	37,271	38,708	41,042	44,410	57,452	71,332
Sub-Total North Halton	47,504	48,744	50,838	54,789	70,326	85,313
Total Service Area²	422,081	476,327	539,272	607,836	672,568	735,879
Rural	16,810	16,718	16,435	16,258	16,327	16,658
Region Total	438,891	493,045	555,707	624,094	688,895	752,537
Note:	1. Georgetown serviced population includes future servicing of Hamlets 2. Projections based on serviced area only (ie: areas connected to municipal systems) and does not include rural population on private systems (BPE Data June 2011)					

Table 4 Service Area Employment Projections to 2031

	Serviced Employment (Employees)					
	2006	2011	2016	2021	2026	2031
Oakville	82,089	90,969	106,485	120,796	122,578	128,359
Burlington	87,455	94,990	97,952	102,033	103,315	104,508
Milton	25,684	42,792	60,777	79,276	94,723	112,251
Halton Hills 401 Corridor	1,500	1,702	2,179	3,778	11,276	19,204
Sub-Total South Halton	196,728	230,453	267,393	305,883	331,892	364,322
Acton	3,642	3,791	4,085	4,354	4,744	5,071
Georgetown¹	12,663	12,902	13,017	13,341	14,868	16,206
Sub-Total North Halton	16,305	16,693	17,102	17,695	19,612	21,277
Total Service Area²	213,033	247,146	284,495	323,578	351,504	385,599
Rural	3,370	3,786	3,998	4,106	4,206	4,401
Region Total	216,403	250,932	288,493	327,684	355,710	390,000
Note:	1. Georgetown serviced employment includes future servicing of Hamlets 2. Projections based on serviced area only (ie: areas connected to municipal systems) and does not include rural employment on private systems (BPE Data June 2011)					

7. Master Plan Objectives

The Sustainable Halton Water and Wastewater Master Plan provides comprehensive documentation of the development, evaluation and selection of the preferred water and wastewater servicing strategies to meet the growth needs of Halton Region to year 2031.

Key aspects of the study objectives and work plan of the Sustainable Halton Water and Wastewater Master Plan are:

- Review best planning estimates provided by the Region as defined through ROPA 38 and determine impact on servicing needs
- Undertake a comprehensive review and analysis for both water and wastewater servicing requirements
- Address key servicing considerations as part of the development and evaluation of servicing strategies including:
 - Level of service to existing users and approved growth
 - Operational flexibility
 - Security of supply
 - Mitigation of impacts to natural, social and economic environments
 - Maintaining water balance within the watersheds
 - Opportunity to meet policy, policy statements, regulations and technical criteria
 - Opportunity to optimize existing infrastructure
 - Ensuring the strategies are cost-effective
- Consider and develop sustainable servicing solutions
- Utilize updated industry trends and more detailed information from relevant Region studies and projects to provide better capital cost estimates
- Utilize recently completed and on-going projects to update infrastructure status, capacity and cost estimates
- Utilize the water and wastewater models for the analysis of servicing alternatives
- Establish a complete and implementable water and wastewater capital program
- Extensive consultation with the public and other stakeholders

8. Servicing Strategy Development and the Sustainable Halton Process

The Water and Wastewater Master Plan is an integrated component of the overall Sustainable Halton process. As such, the development of the servicing strategies evolved in complexity and detail throughout the implementation of Sustainable Halton.

For the Growth Conformity Exercises under Sustainable Halton, land use plans evolved over time from overall growth concepts, to a short list of growth options, to the preferred land use plan ultimately updated for the Official Plan Review ROPA 38. During this land use evaluation process, preliminary water and

wastewater servicing considerations and comments were provided to support the land use decision making.

Once the preferred growth option/land use plan was finalized, the Sustainable Halton Water and Wastewater Master Plan utilized the planning data as the foundation for the servicing needs.

At this point in the Sustainable Halton process, the Class EA process for the Water and Wastewater Master Plan was initiated. The Master Plan followed Phases 1 and 2 of the Class EA process including establishing and evaluating servicing alternatives.

The process for evaluating and selecting the preferred servicing strategies was as follows:

1. Generate a long list of water and wastewater concepts for the lake-based, groundwater-based and stream-based systems – this was a general description of the servicing strategy/intent with only high level description of infrastructure needs
2. Evaluate the long list of concepts and short-list preferred servicing concepts
3. Generate specific servicing alternatives from the short-listed concepts – this involved determination of specific infrastructure needs, locations and capacity for each alternative
4. Evaluate the servicing alternatives using Triple Bottom Line evaluation criteria
5. Establish the preferred water and wastewater servicing strategies including the capital and implementation programs

The overall capital and implementation programs for the water and wastewater servicing strategies form the primary recommendations of the Sustainable Halton Water and Wastewater Master Plan. The Master Plan documentation is ultimately integrated into the total documentation of the Sustainable Halton process.

9. Preferred Water Servicing Strategy

9.1 Overall Water Strategy Summary

The water servicing strategies have evolved from previous Master Plans. In particular, the additional growth needs in North Halton combined with the limitations of sustainable groundwater supply has led to the identification of the need for greater integration of the Region-wide water systems.

The overall strategy description is provided in Table 5 below, with greater detailed description provided in Section 9.2.

Table 5 Overall Water Strategy Summary

Service Area	Master Plan Strategy
South Halton	The existing water purification plants (WPPs) will continue to provide lake-based servicing. New capacity will be achieved through expansion of Oakville WPP and maximizing Burlington WPP capacity with distribution transfer to the Oakville system. The balance of all future capacity requirements will be achieved through expansions of the Burloak WPP.

Milton	The core area of Milton is serviced by groundwater. The strategy is based on maximizing groundwater servicing; however due to sustainable groundwater limitations, a small portion of the Milton core area will need to be transferred to lake-based. The transfer areas are focused on employment areas. The balance of Milton including the new Greenfield growth areas will be serviced by the lake-based system.
Georgetown	Georgetown is currently serviced by groundwater. However, the projected growth in the community will exceed the sustainable groundwater capacity. The groundwater service area will be maximized to maintain the community generally north of Silver Creek as well as the existing Norval community and Georgetown Southeast Greenfield service area in the groundwater service area. There are upgrades to the groundwater facilities needed to support this strategy. The new Georgetown Southwest Greenfield service area as well as the existing Georgetown South service area and the existing Stewarttown community will be serviced by extending the lake-based system.
Acton	Independent groundwater servicing in the community of Acton will be maintained. This strategy will require expansions and upgrades to the existing water infrastructure along with the development of a new well field supply.

9.2 Detailed Servicing Requirements

The map depicting the preferred servicing strategy and the complete water capital program developed under the Sustainable Halton Master Plan is provided in Attachment 1.

The key servicing components for each service area is summarized below.

North Oakville (East Growth Area) Water Servicing

- North Oakville (East Growth Area) is generally located east of Sixteen Mile Creek. Part of these lands are serviced by pressure zone O3 and the remainder is serviced by pressure zone O4.
- Water supply is from the existing lake based WPPs, pumped through a series of pumping stations and reservoirs.
- Servicing will include maximizing the use of capacity from existing 8th Line infrastructure and expanding capacity from the Kitchen Reservoir/Pumping Station and construction of a new Oakville Zone 4 pumping station

Components of the servicing strategy for North Oakville (East Growth Area) include:

- Staging of Oakville infrastructure upgrades to maximize use of existing capacity.
- Water supply capacity expansions at Burloak WPP and Oakville WPP.
- Maximizing use of available capacity in existing infrastructure and integrating capacity and timing with infrastructure requirements for service areas in Milton and Halton Hills.

North Oakville (West Growth Area) Water Servicing

- North Oakville (West Growth Area) is generally located west of Sixteen Mile Creek. These lands are serviced by pressure zone O3.

- Water supply is from the existing lake based WPPs that is pumped through a series of pumping stations and reservoirs.

Components of the servicing strategy for North Oakville (West Growth Area) include:

- Staging of Oakville infrastructure upgrades to maximize use of existing capacity.
- Water supply capacity expansions at Burloak WPP and Oakville WPP.
- Maximizing use of available capacity in existing infrastructure and integrating capacity and timing with infrastructure requirements for Burlington and service areas in Milton and Halton Hills.

Oakville (Central) Water Servicing

- Oakville (Central Area) is generally located east of Bronte Creek and South of Dundas. These lands are serviced by pressure zone O1, O2 and parts of O3.
- Water supply is from Lake Ontario WPPs that is pumped through a series of pumping stations and reservoirs.

Components of the servicing strategy for Oakville include:

- Staging of Oakville infrastructure upgrades to maximize use of existing capacity.
- Providing an interconnection with Burlington at both Zone 2 and Zone 3 for improved service level and security of supply.
- Water supply capacity expansions at Burloak WPP and Oakville WPP.
- Maximizing use of available capacity in existing infrastructure and integrating capacity and timing with infrastructure required for Burlington.
- Local infrastructure to be upgraded through intensification program to meet demand projections caused by intensification.

Burlington (Central) Water Servicing

- Burlington (Central Area) includes all areas in Burlington south of the Hwy 407 and Dundas Street excluding the North Aldershot areas. These lands are serviced by pressure zones B1, B2, B3, B4 and B5.
- Water supply is from lake based WPPs (primarily the Burlington WPP) that is pumped through a series of pumping stations and reservoirs.

Components of the servicing strategy for Burlington include:

- Staging of Burlington infrastructure upgrades to maximize use of existing capacity.
- Enhancement of transmission capacity to the Washburn reservoir and PS as well as in Zone 4 and Zone 5.
- Water supply capacity expansion at Burloak WPP.
- Maximizing use of available capacity in existing infrastructure and integrating capacity and timing with infrastructure required for Oakville.
- Local infrastructure to be upgraded through intensification program to meet demand projections caused by intensification.

North Aldershot Water Servicing

- The North Aldershot service areas include all areas in Burlington generally west of the Hwy QEW. These lands are serviced by pressure zones B1, B1A, B1B, B2 and B5A. Based on the topography, the areas in North Aldershot, north of the Hwy 403, will require the establishment of two additional pressure zones (B3A and B4A).
- Water supply is from lake based WPPs (primarily the Burlington WPP) that is pumped through a series of pumping stations and reservoirs.

Components of the servicing strategy for North Aldershot include:

- Staging of Burlington infrastructure upgrades to maximize use of existing capacity.
- Water supply capacity expansion at Burloak WPP.
- Maximizing use of available capacity in existing infrastructure in Burlington and integrating capacity and timing with infrastructure required for Oakville.
- Continued inter-Regional servicing from Hamilton for areas in Bridgeview and Snake Road. As well, a water supply interconnection from Hamilton for North Aldershot will be maintained for emergency purposes.

Milton Lake Based Water Servicing

- Milton lake-based service area includes existing areas outside the central core of the community and is serviced by Zone M4L and M5L.
- Water supply is from the existing and proposed expansions of the WPPs at Lake Ontario and pumped through a series of pumping stations and reservoirs north to Milton.
- Some areas of the existing groundwater serviced area will need to be transferred to lake based supply to ensure sustainable groundwater takings at the Kelso Well Fields.

Components of the servicing strategy for the Milton lake-based service area include:

- Implementing 2nd spine up Trafalgar Road alignment and 3rd spine along Neyagawa Boulevard.
- Implementing new Zone 4/5 Boundary.
- Switching over strategic areas from Groundwater Supply to Lake Based Supply.
- Staging of Oakville/Milton infrastructure upgrades to maximize use of existing capacity.
- Providing additional Zone 4/5 Storage.
- Water supply capacity expansions at Burloak WPP and Oakville WPP.
- Upgrading of local infrastructure through intensification program to meet demand projections caused by intensification.
- Integrating Zone 4 and Zone 5 infrastructure to provide security of supply to Milton.

Core Milton Groundwater Servicing

- Optimization of Kelso WPP.
- Upgrade feedermain to Main Street Reservoir.
- Decommission Walkers Line Well Field facilities.
- Switchover strategic areas of Milton, predominantly employment areas, to help alleviate groundwater capacity constraints.

Milton & Halton Hills 401 Employment Corridor Lake Based Water Servicing

- Milton/Halton Hills 401 Corridor lake-based service area includes existing areas generally along Steeles Ave and is serviced by Zone M5L.
- Water supply is from lake based WPPs that is pumped through a series of pumping stations and reservoirs north to Milton/Halton Hills 401 Corridor.

Components of the servicing strategy for the Milton/Halton Hills 401 Corridor lake-based service area include:

- Implementing 2nd spine up Trafalgar Road alignment and 3rd Spine along Neyagawa Boulevard and a future road alignment.
- Implementing new Zone 4/5 Boundary.
- Staging of Oakville/Milton infrastructure upgrades to maximize use of existing capacity.
- Water supply capacity expansions at Burloak WPP and Oakville WPP.
- Implementing Zone 5 Pumping Station (at Zone 4 Reservoir) and transmission for additional feed to 401 Corridor and Business Park II.
- Integrating Zone 5 infrastructure to provide security of supply to Milton.

Georgetown Water Servicing

- Maximize groundwater servicing capabilities by increasing water takings at Cedarvale and/or Lindsay Court Well Fields.
- Consider Artificial Recharge to Silver Creek / wetlands as support to overall strategy.
- Provide new lake based water supply to the new Southwest Georgetown Greenfield service area and transfer Georgetown South and Stewarttown to lake based supply in order to maintain the groundwater system within sustainable yields.
- Water supply is from lake based WPPs that is pumped through a series of pumping stations and reservoirs north to Georgetown.
- Georgetown lake-based service area will be known as Zone G6L, this will include the existing area of Georgetown South and Stewarttown along with the new Greenfield growth areas in Southwest Georgetown bounded by Trafalgar Road and No. 10 Side Road and Georgetown Southeast.
- Provide lake based water storage capacity at 22 Sideroad Reservoir.

Components of the servicing strategy for the Georgetown lake-based service area include:

- New Zone 6 Pumping Station and Zone 4 reservoir expansion at Trafalgar Road and No. 5 Side Road.
- New transmission main along Trafalgar Road.
- New lake based Zone 6 Reservoir at 22nd Side Road.
- Local infrastructure to be upgraded through intensification program to meet demand projections caused by intensification.

Acton Water Servicing

- Maintain the existing and future service areas on groundwater.
- Increase groundwater capacity at the Fourth Line and Prospect Park Well Fields as well as provide additional new groundwater capacity.

- Consider Artificial Recharge to Black Creek / wetlands as support to the overall strategy.

Components of the servicing strategy for the Acton lake-based service area include:

- Increased water taking at Prospect Park and Fourth Line Well Fields.
- Expansion of Prospect Park WPP.
- Third Line Reservoir to be expanded.
- New north Acton Well Supply.
- Local infrastructure to be upgraded through intensification program to meet demand projections caused by intensification.

10. Preferred Wastewater Servicing Strategy

10.1 Overall Strategy Description

The wastewater servicing strategies have also evolved from previous Master Plans. In particular, the additional growth needs in North Halton combined with the limitations of sustainable wastewater treatment capacity has led to the identification of the need for greater integration of the Region-wide wastewater systems.

The overall strategy description is provided in Table 6 below, with greater detailed description provided in Section 10.2.

Table 6 Overall Wastewater Strategy Summary

Service Area	Master Plan Strategy
South Halton	The existing wastewater treatment plants (WWTPs) in South Halton will continue to meet the service areas in South Halton (Skyway WWTP for example is currently undergoing expansion to support this strategy). The Greenfield growth across the Region will be directed to the Mid-Halton WWTP which will require expansion.
Milton	The Milton WWTP currently only has sufficient capacity to service the core area of Milton. The Milton WWTP will remain in service and continue to service a confined service area. The balance of the Milton service areas will convey flows south to the Mid-Halton WWTP.
Georgetown	There is insufficient capacity at the Georgetown WWTP to service the full growth to 2031. The stream-based service area will be maximized to maintain the community generally north of Silver Creek as well as the existing Norval community and Georgetown Southeast Greenfield service area as the service area conveying flows to the Georgetown WWTP. The new Georgetown Southwest Greenfield service area as well as Stewarttown and existing Georgetown South service areas south of Silver Creek (excluding Georgetown Southeast) will convey flows to the South Halton wastewater system and ultimately treated at Mid-Halton WWTP.

Acton	Independent wastewater servicing in the community of Acton will be continued with all flows conveyed to the Acton WWTP. This strategy will require expansion of the Acton WWTP.
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10.2 Detailed Servicing Requirements

The map depicting the preferred servicing strategy and the complete wastewater capital program developed under the Sustainable Halton Master Plan is provided in Attachment 2.

The key servicing components for each service area is summarized below.

North Oakville (East Growth Area) Wastewater Servicing

- North Oakville (East Growth Area) is generally located east of Sixteen Mile Creek, North of Dundas Street, South of Hwy 407 and West of 9th Line.
- The wastewater servicing strategy for these lands is to convey wastewater flows south to the Dundas Street trunk sewer and west to the Third Line trunk sewer which continues to convey flows to Mid-Halton WWTP.

Components of the servicing strategy for North Oakville (East Growth Area) include:

- Two wastewater pumping stations to provide staged implementation, minimize sewer depth and service areas with topographical constraints.
- Sub-trunk sewers conveying flows south to the trunk sewer along Dundas Street
- Wastewater pumping station and Forcemain to convey flows across Sixteen Mile Creek to the existing gravity system
- Provide additional capacity at Mid-Halton WWTP

North Oakville (West Growth Area) Wastewater Servicing

- The North Oakville (West Growth Area) is generally located west of Sixteen Mile Creek.
- The wastewater servicing strategy for these lands is, for the eastern most section, to convey wastewater flows to the Third Line trunk sewer which continues to convey flows to Mid-Halton WWTP and, for the western most section, convey wastewater flows east along Dundas Street then south to existing sewers near Bronte Road ultimately to Mid-Halton WWTP.

Components of the servicing strategy for North Oakville (West Growth Area) include:

- New trunk sewers along Dundas Street
- Provide additional capacity at Mid-Halton WWTP

Burlington (Central) Wastewater Servicing

- The Burlington (Central Areas) include all areas in Burlington south of the Hwy 407 and Dundas Street excluding the North Aldershot areas.
- The wastewater servicing strategy for these lands is to convey wastewater flows to the Skyway WWTP. This is achieved primarily through gravity sewers with localized wastewater pumping stations.

Components of the servicing strategy for Burlington include:

- Maximize available capacity within existing infrastructure.
- Localized servicing upgrades.
- Provide additional WWTP capacity at Skyway WWTP.

North Aldershot Wastewater Servicing

- The North Aldershot service areas include all areas in Burlington generally west of the QEW.
- The wastewater servicing strategy for these lands is to convey wastewater flows to the Skyway WWTP. This is achieved primarily through gravity sewers with localized wastewater pumping stations. Isolated areas maintain private servicing.

Components of the servicing strategy for North Aldershot include:

- Maximize available capacity within existing infrastructure.
- Provide new trunk gravity servicing through North Aldershot to existing trunk sewers near Waterdown Road and the Highway 403.
- Provide additional capacity at Skyway WWTP.

Milton Lake Based Wastewater Servicing

- Milton lake-based wastewater service area also includes the areas generally outside the northeast areas of the Milton core.
- Wastewater is conveyed south to the Mid-Halton WWTP. Wastewater from the remaining areas is conveyed to the Milton WWTP. Excess flows to Milton WWTP beyond rated capacity for average and peak flows are diverted to the Mid-Halton WWTP.

Components of the servicing strategy for the Milton lake-based service area include:

- Derry Green (Business Park II) servicing will be initially conveyed to the existing Milton system and ultimately to the Britannia Road infrastructure
- Convey and pump the Boyne Survey Area Phase III flows along Britannia Road to the Highway 25 trunk sewer
- Provide new trunk infrastructure for east Milton that will convey wastewater down Trafalgar Road, along Britannia Road and to Lower Baseline Road
- Provide phasing opportunity for the post 2021 flows along Britannia Road
- Continue to convey flows to the Hwy 25 trunk sewer
- New Highway 25 trunk sewer from south of Boyne WWPS to the Third Line trunk sewer
- Provide additional capacity at Mid-Halton WWTP
- Flows from the Milton Education Village will be conveyed to the existing Tremaine WWPS and eventually to the Highway 25 trunk sewer
- The balance of flows from the southern portion of the Milton Education Village and lands south of Britannia Road at Tremaine Rd will flow down Tremaine Rd and along Lower Baseline before connecting to the new Hwy 25 trunk sewer.

Core Milton Servicing

- Wastewater is conveyed south to the Milton WWTP for the northwest areas of the Milton core. Remaining areas direct flows to Mid-Halton Wastewater Treatment Plant.
- Flows to the Milton plant over the rated capacity can be diverted to the Mid-Halton WWTP.

Components of the servicing strategy include:

- Expansion and Reconstruction of Fulton Pumping Station
- Twin forcemain between Fulton Pumping Station and Milton WWTP

Milton & Halton Hills 401 Employment Corridor Wastewater Servicing

- Milton/Halton Hills 401 Corridor lake-based wastewater service area includes the areas generally along Steeles Ave.
- Wastewater is conveyed south to the Mid-Halton WWTP.

Components of the servicing strategy for the Milton/Halton Hills 401 Corridor lake-based service area include:

- Two existing wastewater pumping stations along Steeles Ave to provide staged implementation and minimize sewer depth and convey flows west along Steeles Ave and south through the existing Milton Gravity system.
- The eastern limits of the corridor will continue to pump flows west to the existing infrastructure. Once the new Trafalgar trunk sewer is in place, these flows will be diverted south allowing the post 2021 service areas in the western limits of the corridor to be serviced by existing infrastructure.
- Convey flows to the Highway 25 trunk sewer
- Provide additional capacity at Mid-Halton WWTP

Georgetown Wastewater Servicing

- Maximize existing service areas to the existing Georgetown WWTP.
- Maintain existing process capacity at Georgetown WWTP.

Georgetown South and Georgetown Southwest Greenfield Area

- Areas within Georgetown South and Georgetown Southwest Greenfield Area generally lie south of 15th Sideroad and Silver Creek.
- The wastewater servicing and strategies for these areas is to convey flows south to the Mid-Halton WWTP.
- Lake-based water service areas are paralleled by lake-based wastewater collection to ensure water balance within the watershed.

Components of this servicing strategy include:

- New wastewater pumping station to service the areas with topographical constraints and to pump flows across creek crossings and minimize sewer depth. This WWPS is required so that the existing areas within the Georgetown WWTP drainage area located south of Silver creek are diverted to drain south to the Mid-Halton WWTP
- Trunk sewers from Georgetown down Eighth Line and Trafalgar Road to convey flows along Britannia Road and Lower Base Line to the Highway 25 trunk sewer.

Georgetown Southeast Greenfield Area

- Areas within the Georgetown Southeast Greenfield Area generally lie south of Guelph Street and east of 10th Line
- The wastewater servicing and strategy for this area is to convey flows north to Georgetown WWTP
- Lake-based water service areas are paralleled by lake-based wastewater collection to ensure water balance within the watershed.

Components of this servicing strategy include:

- New wastewater pumping and WWFM to convey flows to the gravity system and ultimately the Georgetown WWTP.

Acton Wastewater Servicing

- Continue to provide wastewater servicing for the community to the Acton WWTP
- Expand capacity at the Acton WWTP
- Provide local servicing improvements to service new growth as required

11. Water and Wastewater Capital Programs

The servicing strategies have been established to meet Halton Region's BPE Data June 2011. As such, the capital implementation program best reflects the timing to meet the growth needs.

The capital cost estimates have been updated from past Master Plans, reference any recently available information such as studies and preliminary design estimates, and have been costed based on the best available information on the project scope. The cost estimates reflect the total project delivery costs at 2012 dollars.

The total capital program tables are provided in Attachment 1 and 2 for water and wastewater respectively.

For reference purposes, the capital program tables have been summarized by Local Municipality and the 5-year delivery intervals in the following tables.

Table 7 Water Capital Program Summary

Municipality/Category	Water Capital Program (\$M)				
	2012 - 2016	2017 - 2021	2022 - 2026	2027 - 2031	Total 2012 – 2031
Oakville	238.5	25.2	6.1	1.2	271.0
Burlington	122.0	35.4	91.2	9.6	258.2
Milton	64.2	46.5	46.1	8.1	164.9
Halton Hills	140.5	62.0	44.9	1.1	248.5
Region-Wide	8.2	0.8	0.6	0.6	10.0
Total	573.3	169.9	188.8	20.6	952.6

Table 8 Wastewater Capital Program Summary

Municipality/Category	Wastewater Capital Program (\$M)				
	2012 - 2016	2017 - 2021	2022 - 2026	2027 - 2031	Total 2012 – 2031
Oakville	368.4	92.2	6.2	2.9	469.7
Burlington	6.0	11.2	0.0	0.0	17.2
Milton	90.6	84.9	127.4	1.0	303.8
Halton Hills	26.5	31.8	3.5	0.0	61.8
Region-Wide	22.4	1.7	1.7	1.7	27.4
Total	514.0	221.7	138.7	5.5	879.9

Table 9 Water Capital Program Summary by Infrastructure Category

Category	Water Capital Program (\$M)				
	2012 - 2016	2017 - 2021	2022 - 2026	2027 - 2031	Total 2012 – 2031
Studies/General	4.7	0.9	0.6	0.6	6.7
Water Purification Plants	184.0	11.4	89.4	0.0	284.9
Pumping Stations/Storage	93.7	62.7	27.6	9.6	193.7
Watermains	290.9	94.8	71.2	10.5	467.3
Total	573.3	169.9	188.8	20.6	952.6

Table 10 Wastewater Capital Program Summary by Infrastructure Category

Category	Wastewater Capital Program (\$M)				
	2012 - 2016	2017 - 2021	2022 - 2026	2027 - 2031	Total 2012 – 2031
Studies/General	26.5	2.3	2.1	2.1	33.0
Wastewater Treatment Plants	234.8	91.4	0.0	0.0	326.2
Wastewater Pumping Stations and Forcemains	45.3	38.8	61.3	0.4	145.8
Wastewater Mains (sewers)	207.5	89.2	75.3	3.0	375.0
Total	514.0	221.7	138.7	5.5	879.9

12. Implementation

The preferred servicing strategies will support the short and long term servicing needs of the approved urban boundaries including intensification within the 2006 Urban Built Boundary and will provide flexibility for servicing potential growth areas in the future.

The strategies will be implemented in accordance with each project's respective Class EA schedule. The Class EA requirements for each project have been identified in the Capital Program Tables in Attachments 1 and 2. All Schedule A and A+ projects will move forward to design and construction based on the designated schedule. The Schedule B projects that have satisfied the Class EA requirements under this Sustainable Halton Water and Wastewater Master Plan will also move forward to design and construction. Some projects are satisfying the Class EA requirements through separate studies, such as an integrated planning process under the Planning Act. These projects will first complete the identified studies prior to design and construction. The Schedule C projects will continue to Phases 3 and 4 of the Class EA process and have an Environmental Study Report (ESR) completed for public filing. It is anticipated that these Schedule C projects will review and update Phases 1 and 2 of the Class EA process as part of the project scope.

During the subsequent steps of project implementation, primarily during detailed design, the following requirements will be considered:

- Finalization of property requirements
- Final refinement of infrastructure alignment and facility siting
- Final refinement of construction methodologies
- Completion of additional supporting investigations as required such as geotechnical, hydrogeotechnical and site specific environmental studies
- Review and mitigation of potential construction related impacts
- Completion of all approval requirements including but not limited to provincial approvals (MOE, MNR), local municipality approvals (site plans, building permits), and conservation authority approvals (CH, CVC, NEC).

The capital program for the water and wastewater strategies is summarized in Attachment 1 for water and Attachment 2 for wastewater. A strategy map depicting the strategies is included in the Attachments.

These programs will be utilized as a baseline for the Regional capital budgets. Given the growth-related nature of the servicing strategies, the capital programs form the foundation for the water and wastewater components of Halton Region's Development Charges (DC) By-Law. The Sustainable Halton Water and Wastewater Master Plan provides recommendations, provides supporting information and identifies the capital requirements for the Halton Region DC By-Law process. The Halton Region DC By-Law will be updated for 2012 and include the updated servicing information from this Master Plan.

Halton Region will also implement an Infrastructure Staging Plan in 2012. The Infrastructure Staging Plan will utilize the capital program and infrastructure timing identified in this Master Plan as a basis to develop a financing program together with the development community.

The Sustainable Halton Water and Wastewater Master Plan is the foundation document supporting the short and long term infrastructure planning requirements for Halton Region.

ATTACHMENT 1

PREFERRED WATER SERVICING STRATEGY MAP

WATER CAPITAL PROGRAM TABLE

Legend

Existing Infrastructure

- ▲ Water Pumping Station
- Water Well
- Water Standpipe
- Water Reservoir
- Water Purification Plant
- ⊕ Elevated Water Tower
- - - Existing Watermain
- Watermain

Previously Approved Infrastructure

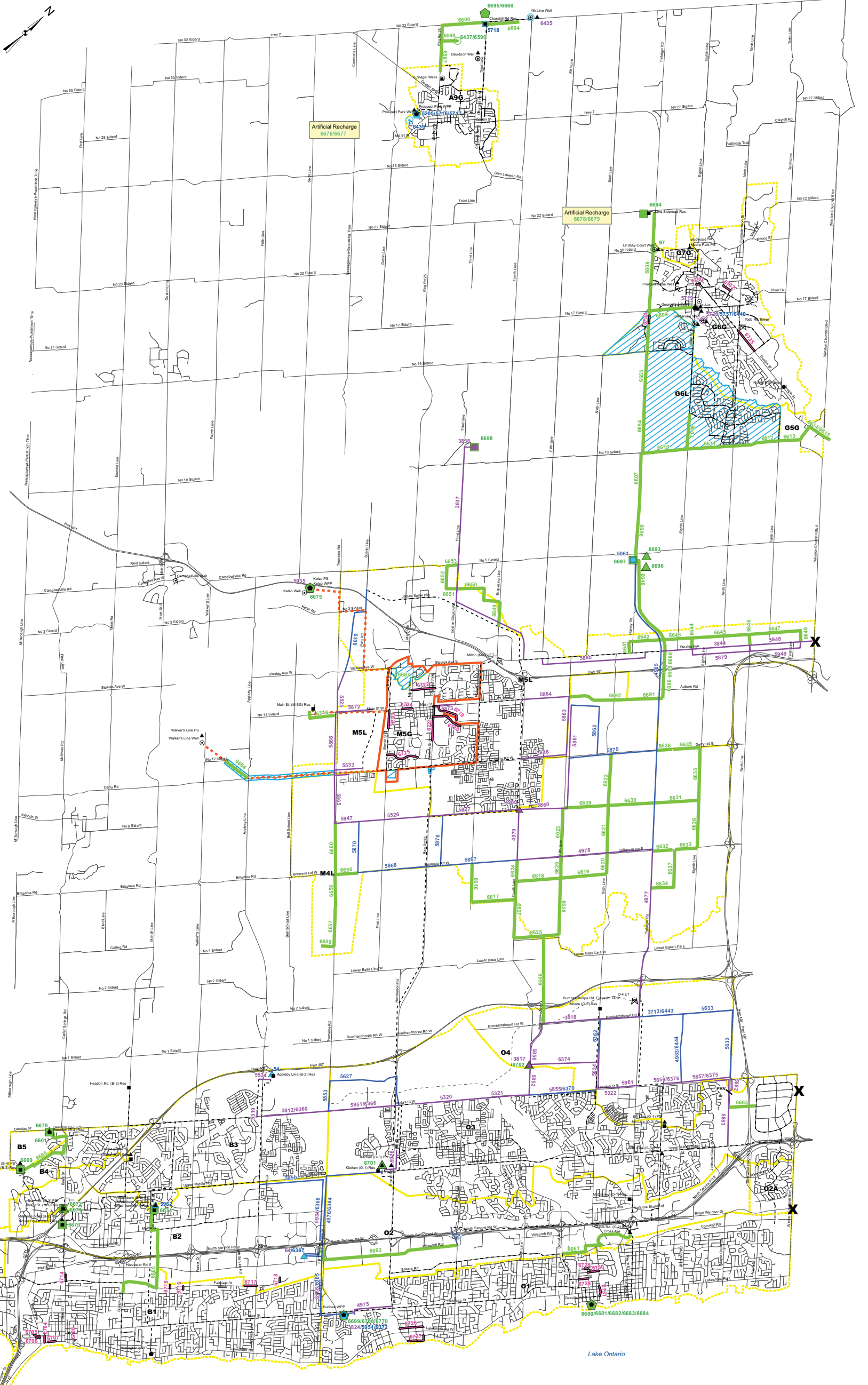
- ▲ Water Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir

Proposed/Upgrade Infrastructure

- ▲ Water Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Watermain
- Distribution-Built Boundary Watermain

Funded Infrastructure

- ▲ Water Pumping Station
- Water Reservoir
- Funded Project - Watermain (2008 MP Projects)
- X Existing Interregional connections
- Existing Milton Groundwater Servicing
- Existing Central Milton Groundwater Service Area Boundary
- Water Pressure Zones
- Proposed Lake Base Service Area



Attachment 1 - Water Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
Oakville						
82	400 mm Zone 2 WM on 3rd Line from Wyecroft Rd to North Service Road (Zone O2)	OAK	WM	\$ 982,000	B (Satisfied though 2008 MP)	2017-2021
3713	400mm WM on Burnhamthorpe Rd from Trafalgar Rd to new North Oakville road. (Zone O4) (Design)	OAK	WM	\$ 317,000	A+	2012-2016
4983	400 mm WM on new North Oakville road from Burnhamthorpe Rd to Dundas St (Zone O4) (Design)	OAK	WM	\$ 424,000	A+	2012-2016
5627	600 mm WM through North Oakville Lands from Tremaine Rd to Bronte Rd (Zone O3)	OAK	WM	\$ 7,238,000	A+	2012-2016
5632	300 mm WM on 9th Line from Burnhamthorpe Rd to Dundas St (Zone O4)	OAK	WM	\$ 2,254,000	A+	2012-2016
5633	300 mm WM on Burnhamthorpe Rd from new North Oakville road to 9th Line (Zone O4)	OAK	WM	\$ 2,342,000	A+	2012-2016
5853	600 mm WM on Tremaine Rd from Dundas St to approximately 950 m north (North Oakville Lands) (Zone O3)	OAK	WM	\$ 1,330,000	A+	2012-2016
5951	Design of Burloak WPP Phase 2 Expansion from 55 to 165 ML/d.	OAK	WPP	\$ 11,327,000	C	2012-2016
6362	600mm in North Oakville along 6th Line to Burnhamthorpe Rd (Zone O4)	OAK	WM	\$ 2,005,000	A+	2012-2016
6364	1500 mm WM from Zone 2 Burloak PS to Kitchen Reservoir (Zone O1) (Construction)	OAK	WM	\$ 53,062,000	C	2012-2016
6368	1050 mm WM from Burloak Pumping Station north on Burloak Dr to Upper Middle Rd (Zone B2) (Construction)	OAK	WM	\$ 6,515,000	A+	2012-2016
6370	750 mm WM on Dundas St from 6th Line to WM #5321 at Dundas St and Neyagawa Blvd (Construction) (Zone O3)	OAK	WM	\$ 5,030,000	A+	2012-2016
6372	Construction of Burloak WPP Phase 2 Expansion from 55 to 165 ML/d	OAK	WPP	\$ 98,433,000	C	2012-2016
6443	400 mm WM on Burnhamthorpe Rd from Trafalgar Rd to new North Oakville road (Zone O4) (Construction)	OAK	WM	\$ 1,828,000	A+	2012-2016
6444	400 mm WM from Burnhamthorpe Rd to Dundas St on new North Oakville road (Zone O4) (Construction)	OAK	WM	\$ 2,449,000	A+	2012-2016
6661	900 mm Second Feedermain to Davis Road Booster Pumping Station (Zone O1)	OAK	WM	\$ 14,171,000	B	2012-2016
6662	400 mm WM on Wyecroft Rd from Burloak Dr to 3rd Line (Zone O2)	OAK	WM	\$ 10,973,000	A+	2017-2021
6663	400 mm WM from 9th Line on easement to Bristol Circle (Zone O3)	OAK	WM	\$ 3,008,000	B	2012-2016
6680	Oakville WPP Intake Pipe Extension - Design	OAK	WPP	\$ 1,500,000	C	2012-2016
6681	Oakville WPP Intake Pipe Extension - Construction	OAK	WPP	\$ 8,500,000	C	2017-2021
6682	Class EA Study of Oakville WPP Expansion from 109 to 130 ML/d	OAK	WPP	\$ 1,000,000	C	2012-2016
6683	Design of Oakville WPP Expansion from 109 to 130 ML/d.	OAK	WPP	\$ 3,464,000	C	2012-2016
6684	Construction of Oakville WPP Expansion from 109 to 130 ML/d	OAK	WPP	\$ 20,803,000	C	2012-2016
6702	40 ML/d expansion at the North Oakville Zone O4 Pumping Station (existing site)	OAK	P.S.	\$ 4,536,000	B	2022-2026
6726	300 mm WM on Sovereign between Bronte Rd and East Street	OAK	WM	\$ 2,652,000	A+	2017-2021
6727	300 mm WM on Ontario/East Street between Bronte Rd and Marine Drive	OAK	WM	\$ 2,060,000	A+	2017-2021
6728	300 mm WM on Cowan Between Kerr Street and Inglewood Drive	OAK	WM	\$ 611,000	A+	2022-2026
6729	300 mm WM on Deane between Kerr Street and Felan Ave	OAK	WM	\$ 981,000	A+	2022-2026
6730	300 mm WM on Normandy between Kerr Street and Queen Mary Drive	OAK	WM	\$ 651,000	A+	2027-2031
6731	300 mm WM on Forsythe between Rebecca Street and Burnet Street	OAK	WM	\$ 577,000	A+	2027-2031
Subtotal Oakville				\$ 271,023,000		
Burlington						
54	30 ML/d Pumping Station at Appleby Line Reservoir (Zone B3)	BUR	P.S.	\$ 10,274,000	B (Satisfied though 2008 MP)	2012-2016
3699	4.5 ML North Aldershot in ground Reservoir (Zone B3A)	BUR	P.S.	\$ 5,072,000	Being Satisfied Under Separate Planning Study	2012-2016
3700	400 mm WM from Waterdown Reservoir pumping station to new North Aldershot Reservoir (Zone B3A)	BUR	WM	\$ 2,279,000	Being Satisfied Under Separate Planning Study	2012-2016
5850	1050 mm WM on Upper Middle Rd from Burloak Dr west to Appleby Line (Zone B2) (Construction)	BUR	WM	\$ 8,514,000	A+	2012-2016
5881	400 mm WM from Waterdown pumping station along North Service Rd to King Rd (Zone B2)	BUR	WM	\$ 6,598,000	B (Satisfied though 2008 MP)	2012-2016
6365	1800 mm WM from Burloak WPP to Burloak Zone 2 Booster Pumping Station (Zone O1) (Construction)	BUR	WM	\$ 17,460,000	C	2012-2016
6367	120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2)	BUR	P.S.	\$ 12,522,000	B	2012-2016
6601	7.8 ML/d expansion at Beaufort Pumping Station (new site) (Zone B5)	BUR	P.S.	\$ 2,015,000	B	2012-2016
6602	7.5 ML storage expansion at Waterdown Reservoir (existing site) (Zone B1A)	BUR	RES.	\$ 7,767,000	A	2017-2021
6605	750 mm WM Second feed to Washburn Reservoir (Zone B1)	BUR	WM	\$ 24,096,000	A+	2012-2016
6665	400 mm WM between Tyandanga Reservoir and Beaufort Reservoir (Zone B4)	BUR	WM	\$ 6,602,000	B	2012-2016
6669	4.5 ML storage expansion at Tyandanga Reservoir (existing site) (Zone B3)	BUR	RES.	\$ 4,660,000	A	2017-2021
6670	2.5 ML storage expansion at Beaufort Reservoir Expansion (new site) (Zone B4)	BUR	RES.	\$ 3,275,000	B	2012-2016

Attachment 1 - Water Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
6671	6.6 ML/d expansion at Brant St Pumping Station (existing building) (Zone B3)	BUR	P.S.	\$ 735,000	A	2012-2016
6672	11.5 ML storage expansion at Brant St Reservoir (existing site) (Zone B1)	BUR	RES.	\$ 12,321,000	A	2017-2021
6673	5.5 ML storage expansion at Mount Forest Reservoir (existing site) (Zone B1)	BUR	RES.	\$ 5,696,000	A	2017-2021
6674	13.5 ML storage expansion at Washburn Reservoir (existing site) (Zone B1)	BUR	RES.	\$ 13,980,000	A	2012-2016
6699	Burloak Treatment Plant Expansion by 55 ML/d (Design) From 165 ML/d to 220 ML/d	BUR	WPP	\$ 11,849,000	C	2022-2026
6700	Burloak Treatment Plant Expansion by 55 ML/d (Construction) From 165 ML/d to 220 ML/d	BUR	WPP	\$ 76,008,000	C	2022-2026
6701	Kitchen Zone O3 Pumping Station expansion by 80 ML/d	BUR	P.S.	\$ 12,000,000	B	2022-2026
6770	Burloak Treatment Plant Expansion by 55 ML/d (Class EA Study) From 165 ML/d to 220 ML/d	BUR	WPP	\$ 1,323,000	C	2017-2021
6863	Waterdown Road Pumping Station Expansion (Zones B2, B3A & B5A)	BUR	P.S.	\$ 5,265,000	B	2012-2016
6704	200 mm WM on Brock Ave from Elgin Street to Lakeshore Rd	BUR	WM	\$ 325,000	A+	2017-2021
6705	200 mm WM on Regina Drive from Maple Avenue to Ecole Renaissance Schoolyard	BUR	WM	\$ 271,000	A+	2017-2021
6706	250 mm WM on Bellview Rd from Maple Avenue to end	BUR	WM	\$ 309,000	A+	2017-2021
6707	300 mm WM on Lakeshore Rd between Nelson Avenue and Burlington Avenue	BUR	WM	\$ 869,000	A+	2022-2026
6708	300 mm WM on Elizabeth Street from James Street to approximately 15 m north	BUR	WM	\$ 35,000	A+	2022-2026
6709	300 mm WM on Plains Rd East from north of Grandview Rd to twinned section on Plains	BUR	WM	\$ 2,678,000	A+	2012-2016
6710	300 mm WM on Plains Road East (Twinning adjacent to 6709)	BUR	WM	\$ 628,000	A+	2012-2016
6711	300 mm WM on Birchwood Avenue from Plains Rd East southwards towards Fairwood Place East	BUR	WM	\$ 104,000	A+	2017-2021
6712	300 mm WM on Gallagher Rd from Plains Rd East to 160 m Northerly	BUR	WM	\$ 239,000	A+	2017-2021
6713	300 mm WM on Downsview Rd from Plains Rd East to Dowland Crescent	BUR	WM	\$ 223,000	A+	2017-2021
6714	300 mm WM on Brant from Fairview St to 180 m northerly	BUR	WM	\$ 342,000	A+	2017-2021
6715	300 mm WM on Woodview Rd from Fairview Street to 100 m Northerly	BUR	WM	\$ 181,000	A+	2017-2021
6716	200 mm WM from end of Commerce Court north to Fairview Street	BUR	WM	\$ 268,000	A+	2017-2021
6717	300 mm WM on Fairview from Appleby to Taylor Crescent	BUR	WM	\$ 1,137,000	A+	2017-2021
6718	300 mm WM on Oval Crescent heading due north from Fairview Street	BUR	WM	\$ 250,000	A+	2017-2021
Subtotal Burlington				\$ 258,170,000		
Milton						
5862	400 mm WM loop from 5th Line running east then south on new Milton Business Park Roads to Derry Rd west to 5th Line (Zone M4)	MIL	WM	\$ 3,500,000	A+	2012-2016
5867	1200 mm WM on Britannia Rd from 4th Line to RR 25 (Zone M4)	MIL	WM	\$ 19,529,000	B (Satisfied though 2008 MP)	2012-2016
5868	750 mm WM on Britannia Rd from #5867 to approximately 2,100 m west (to new Milton South road) (Zone M4)	MIL	WM	\$ 7,599,000	A+	2012-2016
5870	400 mm WM on new Milton South road from Britannia Rd to Louis St Laurent Ave (Zone M4)	MIL	WM	\$ 1,614,000	A	2012-2016
5875	900 mm WM on Derry Rd from new MIL Business Park Road to Trafalgar Rd (Zone M4)	MIL	WM	\$ 9,523,000	B (Satisfied though 2008 MP)	2012-2016
5876	600 mm WM on new internal Milton road from Britannia Rd to Louis St Laurent Ave (Zone M4)	MIL	WM	\$ 2,726,000	B (Satisfied though 2008 MP)	2012-2016
6318	300mm WM on No 14 Siderd from Tremaine Rd. to Milton Reservoir (Zone M5G)	MIL	WM	\$ 1,046,000	A+	2012-2016
6398	600 mm WM on re-aligned Tremaine Rd from Steeles Avenue to existing watermain on Peru Rd south of Hwy 401 (Zone M5L)	MIL	WM	\$ 6,433,000	B (Satisfied though 2008 MP)	2012-2016
6616	400 mm WM on Thompson Rd South from Britannia Rd to approx. 1,156 south (Zone M4)	MIL	WM	\$ 1,633,000	A+	2022-2026
6617	400 mm WM on new roadway south of Britannia Rd from Thompson Rd South to 4th Line (Zone M4)	MIL	WM	\$ 2,131,000	A+	2022-2026
6618	400 mm WM on new roadway south of Britannia Rd from 4th Line to 5th Line (Zone M4)	MIL	WM	\$ 2,164,000	A+	2017-2021
6619	400 mm WM on new roadway south of Britannia Rd from 5th Line to 6th Line (Zone M4)	MIL	WM	\$ 1,458,000	A+	2017-2021
6620	400 mm WM on 6th Line from Britannia Rd to 600 m south (Zone M4)	MIL	WM	\$ 1,008,000	A+	2017-2021
6621	400 mm WM on 6th Line from Britannia Rd to 1,500 m north (Zone M4)	MIL	WM	\$ 2,584,000	A+	2017-2021
6622	400 mm WM on 6th Line from Derry Rd to new Rd 1,500 m south (Zone M4)	MIL	WM	\$ 3,113,000	A+	2017-2021
6623	400 mm WM on 5th Line from Britannia Rd to 1,500 m north of Britannia Rd (Zone M4)	MIL	WM	\$ 1,902,000	A+	2017-2021
6624	400 mm WM on 4th Line from Britannia Rd to 650 m south (Zone M4)	MIL	WM	\$ 677,000	A+	2017-2021
6625	400 mm WM on Lower Base Line (East) from 4th Line to 5th Line (Zone M4)	MIL	WM	\$ 2,538,000	A+	2022-2026
6626	400 mm WM on 5th Line from Britannia Rd to 650 m south (Zone M4)	MIL	WM	\$ 688,000	A+	2017-2021
6627	400 mm WM on 4th Line from 650 m south of Britannia Rd to Lower Base Line (West) (Zone M4)	MIL	WM	\$ 2,172,000	A+	2022-2026
6628	400 mm WM on 5th Line from 650 m south of Britannia Rd to Lower Base Line (West) (Zone M4)	MIL	WM	\$ 2,882,000	A+	2022-2026
6629	600 mm WM on Louis St. Laurent Ave from 5th Line to 6th Line (Zone M4)	MIL	WM	\$ 2,479,000	A+	2017-2021

Attachment 1 - Water Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
6630	600 mm WM on Louis St. Laurent Ave from 6th Line to Trafalgar Rd (Zone M4)	MIL	WM	\$ 4,076,000	A+	2017-2021
6631	400 mm WM on Louis St. Laurent Ave from Trafalgar Rd to 8th Line (Zone M4)	MIL	WM	\$ 2,549,000	A+	2017-2021
6632	400 mm WM on Britannia Rd from Trafalgar Rd to 600 m east (Zone M4)	MIL	WM	\$ 1,002,000	A+	2017-2021
6633	400 mm WM on Britannia Rd from 600 m east of Trafalgar Rd to 8th Line (Zone M4)	MIL	WM	\$ 1,091,000	A+	2022-2026
6634	400 mm WM on new Milton Rd from Trafalgar Rd to approximately 700 m east (Zone M4)	MIL	WM	\$ 1,469,000	A+	2017-2021
6635	400 mm WM on 8th Line from Derry Rd. to approximately 1,600 m south (Zone M4)	MIL	WM	\$ 2,756,000	A+	2022-2026
6636	400 mm WM on 8th Line from Britannia Rd to approximately 1,500 m north (Zone M4)	MIL	WM	\$ 2,187,000	A+	2022-2026
6637	400 mm WM on new roadway from Britannia Rd to approx. 1,200 m south (Zone M4)	MIL	WM	\$ 1,570,000	A+	2017-2021
6638	400 mm WM on Derry Rd from Trafalgar Rd to 500 m east (Zone M4)	MIL	WM	\$ 548,000	A+	2017-2021
6639	400 mm WM on Derry Rd from 600 m east of Trafalgar Rd to 8th Line (Zone M4)	MIL	WM	\$ 881,000	A+	2017-2021
6640	600 mm WM on Trafalgar Rd from Zone 4 Reservoir to 600 mm Zone M5L WM on Steeles Avenue (ID 3844) (Zone M5L)	MIL	WM	\$ 6,463,000	B	2017-2021
6649	400 mm WM on Esquesing Line from James Snow Parkway to approximately 800 m north (Zone M5L)	MIL	WM	\$ 1,188,000	A+	2017-2021
6650	400 mm WM on new roadway from Esquesing Line to Boston Church Rd (Zone M5L)	MIL	WM	\$ 2,449,000	A+	2017-2021
6651	400 mm WM on new roadway from Boston Church Rd to approximately 360 m west (Zone M5L)	MIL	WM	\$ 1,216,000	A+	2017-2021
6652	400 mm WM on new roadway from 360 m west of Boston Church Rd to No 5 Siderd (Zone M5L)	MIL	WM	\$ 1,101,000	A+	2017-2021
6653	400 mm WM on No 5 Siderd from approximately 400 m west of 3rd Line to 3rd Line (Zone M5L)	MIL	WM	\$ 435,000	A+	2017-2021
6656	400 mm WM on Britannia Rd from Tremaine Rd to approximately 700 m east (Zone M4)	MIL	WM	\$ 1,118,000	A+	2012-2016
6657	400 mm WM on Tremaine Rd from 1,000 m south of Britannia Rd to 2,200 m south of Britannia Rd (Zone M4)	MIL	WM	\$ 2,022,000	A+	2022-2026
6658	400 mm WM on Tremaine Rd from Britannia Rd to 1,000 m south of Britannia Rd (Zone M4)	MIL	WM	\$ 1,375,000	A+	2022-2026
6659	400 mm WM on new road alignment from Tremaine Rd to approximately 360 m west (Zone M4)	MIL	WM	\$ 437,000	A+	2022-2026
6660	400 mm WM on Tremaine Rd from Louis St Laurent to Britannia Rd West (Zone M4)	MIL	WM	\$ 1,718,000	A+	2012-2016
6664	Relining of Walkers Line Well Feedermain with 150mm pipe within existing easement from West Appleby Line to Surge Tank (Zone M5L)	MIL	WM	\$ 216,000	A+	2012-2016
6666	750 mm WM on James Snow Parkway from Burnhamthorpe Rd W to Lower Base Line W (Zone M4)	MIL	WM	\$ 8,136,000	A+	2027-2031
6667	Lake Based Servicing Transfer (Zone M5L)	MIL	WM	\$ 3,165,000	A+	2012-2016
6675	Kelso WPP Residual Management Study & optimization (Zone M5G)	MIL	WPP	\$ 4,000,000	A	2012-2016
6688	400 mm WM on Trafalgar Rd from Steeles Avenue to Hwy 401 (Zone M5L)	MIL	WM	\$ 374,000	B	2017-2021
6689	400 mm WM on Trafalgar Rd Hwy 401 Crossing (Zone M5L)	MIL	WM	\$ 2,826,000	B	2012-2016
6690	400 mm WM on Trafalgar Rd from Hwy 401 to Main St Extension (Zone M5L)	MIL	WM	\$ 1,196,000	B	2017-2021
6691	400 mm WM on Main St extension from Trafalgar Rd (Zone M5L)	MIL	WM	\$ 1,887,000	A+	2017-2021
6692	400 mm WM on Main St extension from 5th Line to approximately 2,100 m east (Zone M5L)	MIL	WM	\$ 3,964,000	A+	2017-2021
6698	10 ML storage expansion at Zone M5L Reservoir	MIL	RES.	\$ 10,356,000	A	2022-2026
6719	300 mm WM on Main St. from Ontario St. to Easement, on Easement from Main St. to Nipissing Rd and on Nipissing Rd from Easement to 251 Nipissing Rd.	MIL	WM	\$ 2,335,000	A+	2017-2021
6720	300 mm WM on Childs Drive from Ontario Street North to Robertson Crescent (Eastern entrance)	MIL	WM	\$ 1,716,000	A+	2017-2021
6721	300 mm WM on Ontario Street North from Main Street East to Parkway Drive East	MIL	WM	\$ 1,787,000	A+	2017-2021
6722	300 mm WM on Woodward Avenue between Martin Steet and Ontario Street North	MIL	WM	\$ 1,919,000	A+	2022-2026
6723	400 mm WM on Bronte St between Main Street West and Barton Street	MIL	WM	\$ 1,134,000	A+	2022-2026
6724	300 mm WM on Main Street East East between James Street and Martin Street	MIL	WM	\$ 538,000	A+	2022-2026
6725	300 mm WM on Laurier Avenue between Bronte Street and Commercial Street	MIL	WM	\$ 2,278,000	A+	2022-2026
Subtotal Milton				\$ 164,877,000		
Halton Hills - Acton						
5716	Upgrade piping between Prospect Park Wells and WPP (Zone A9G)	HHACT	WPP	\$ 377,000	A+	2012-2016
5717	Prospect Park WPP Expansion from 2.3 to 3.5 ML/d (Zone A9G)	HHACT	WPP	\$ 3,513,000	C	2012-2016
5718	Acton Reservoir Expansion from 4.5 to 7.0 ML (Construction) (Zone A9G)	HHACT	RES	\$ 3,017,000	A	2012-2016
6437	Acton Well Field Development and Treatment (Zone A9G)	HHACT	WPP	\$ 1,543,000	C	2012-2016
6439	Prospect Park Well Field Upgrades (Zone A9G)	HHACT	WPP	\$ 807,000	C	2012-2016
6590	Acton Supply Standby Well (Zone A9G)	HHACT	WPP	\$ 1,625,000	C	2017-2021
6597	300 mm WM on Reg Rd 25 from new well connection to 640 m North of Wallace St (Zone A9G)	HHACT	WM	\$ 1,069,000	A+	2012-2016
6598	300 mm WM from New Well to Reg Rd 25 (Zone A9G)	HHACT	WM	\$ 444,000	C	2012-2016

Attachment 1 - Water Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
6600	300 mm WM on Reg Rd 25 from new well connection to No. 32 Siderd and on No. 32 Siderd from Reg Rd 25 to 3rd Line Reservoir (Zone A9G)	HHACT	WM	\$ 1,684,000	A+	2022-2026
6604	150mm WM on 3rd Line from 3rd Line Reservoir to No. 32 Siderd and on No. 32 Siderd from 3rd Line to 950 m easterly (Zone A9G)	HHACT	WM	\$ 721,000	A+	2022-2026
6668	Centralized Treatment at 3rd line Reservoir Class EA Study (Zone A9G)	HHACT	Study	\$ 150,000	C	2017-2021
6676	Acton Artificial Recharge Study	HHACT	Study	\$ 500,000	C	2012-2016
6677	Acton Artificial Recharge Capital Works	HHACT	WPP	\$ 6,300,000	C	2012-2016
6695	Centralized Treatment at 3rd line Reservoir (Zone A9G)	HHACT	WPP	\$ 1,541,000	C	2022-2026
Subtotal Halton Hills - Acton				\$ 23,291,000		
Halton Hills - Georgetown						
97	Lindsay Court Well Field Expansion Class EA Study	HHGEO	Study	\$ 350,000	B	2012-2016
4985	1200 mm WM on Trafalgar Rd from Britannia Rd to new Zone 4 Reservoir (Zone M4)	HHGEO	WM	\$ 59,566,000	A+	2012-2016
5061	30 ML Reservoir, near Trafalgar Road and No.5 Siderd (Zone M4)	HHGEO	RES.	\$ 32,440,000	B	2012-2016
5757	Cedarvale Capture Zone Assessment	HHGEO	Study	\$ 300,000	N/A	2012-2016
6440	Cedarvale Well Field Upgrades (Zone G6G)	HHGEO	WPP	\$ 1,375,000	C	2012-2016
6603	400 mm WM on 8th Line from 10th Siderd to existing 400 mm (Zone G6L)	HHGEO	WM	\$ 1,623,000	A+	2017-2021
6606	750 mm WM on Trafalgar from the new Zone 4 Reservoir to approximately 1,650 m north (Zone G6L)	HHGEO	WM	\$ 3,126,000	B	2017-2021
6607	750 mm WM on Trafalgar Rd from 1,650 m north of Zone 4 Reservoir to No 10 Siderd (Zone G6L)	HHGEO	WM	\$ 3,510,000	B	2017-2021
6608	750 mm WM on Trafalgar from 15th Siderd to 22nd Siderd Lake Based Reservoir (Zone G6L)	HHGEO	WM	\$ 12,170,000	B	2017-2021
6609	400 mm WM on 17th Siderd from Trafalgar Rd to Main St (Zone G6L)	HHGEO	WM	\$ 1,744,000	A+	2017-2021
6610	600 mm WM on 10th Siderd from Trafalgar Rd to 8th Line (Zone G6L)	HHGEO	WM	\$ 2,540,000	A+	2017-2021
6611	600 mm WM on No 10 Siderd from 8th Line to 9th Line (Zone G6L)	HHGEO	WM	\$ 2,584,000	A+	2017-2021
6612	600 mm WM on No 10 Siderd from 9th Line to 10th Line (Zone G6L)	HHGEO	WM	\$ 3,049,000	A+	2022-2026
6613	600 mm WM on No 10 Siderd from 10th Line to Adamson St S (Zone G6L)	HHGEO	WM	\$ 1,502,000	A+	2022-2026
6614	600 mm WM on Adamson St from 10th Siderd to Guelph St and on Guelph St from Adamson St to 10th Siderd (Zone G6L)	HHGEO	WM	\$ 2,489,000	B	2022-2026
6615	600 mm WM on No 10 Siderd from Guelph St to Bovaird Dr (Region of Peel) (Zone G6L)	HHGEO	WM	\$ 1,843,000	A+	2022-2026
6654	750 mm WM on Trafalgar Rd from 10th Siderd to approximately 1,700 m north of 10th Siderd (Zone G6L)	HHGEO	WM	\$ 3,763,000	A+	2017-2021
6655	750 mm WM on Trafalgar from 1,700 m north of 10th Siderd to 15th Siderd (Zone G6L)	HHGEO	WM	\$ 3,375,000	A+	2017-2021
6678	Georgetown Artificial Recharge Study	HHGEO	Study	\$ 500,000	C	2012-2016
6679	Georgetown Artificial Recharge Capital Works	HHGEO	WPP	\$ 29,600,000	C	2012-2016
6693	20 ML/d Zone G6L pumping station at Zone 4 Reservoir	HHGEO	P.S.	\$ 9,000,000	B	2017-2021
6694	10 ML Zone G6L Storage at 22nd Siderd	HHGEO	RES.	\$ 10,905,000	B	2017-2021
6696	20 ML/d Zone M5L pumping station at Zone M4L Reservoir	HHGEO	P.S.	\$ 2,000,000	B	2017-2021
6697	20 ML storage expansion at Zone M4 Reservoir	HHGEO	RES.	\$ 20,712,000	A	2017-2021
6732	300 mm replacement on Easement from Rosetta Street to Victoria Street	HHGEO	WM	\$ 507,000	A+	2027-2031
6733	300 mm replacement on Cross Street from Guelph Street to Main Street	HHGEO	WM	\$ 200,000	A+	2027-2031
6734	300 mm in Trafalgar Road between Thompson Drive and Stewartown Rd	HHGEO	WM	\$ 426,000	A+	2027-2031
6735	300 mm replacement on Guelph Street between Mountainview Rd North and Sinclair Ave	HHGEO	WM	\$ 1,424,000	A+	2017-2021
Subtotal Halton Hills - Georgetown				\$ 212,623,000		
Halton Hills - 401 Corridor						
6641	400 mm WM in the 401 growth corridor north of Steeles Ave parallel to Hornby Rd (Zone M5L)	HH401	WM	\$ 1,084,000	A+	2017-2021
6642	400 mm WM in the 401 growth corridor north of Steeles from Hornby Rd to Trafalgar Rd (Zone M5L)	HH401	WM	\$ 1,693,000	A+	2017-2021
6643	400 mm WM in the 401 growth corridor north of Steeles from Trafalgar Rd to approximately 400m east of 8th Line (Zone M5L)	HH401	WM	\$ 2,469,000	A+	2017-2021
6644	400 mm WM in the 401 growth corridor from Steeles Ave to approximately 300 m north (Zone M5L)	HH401	WM	\$ 1,067,000	A+	2017-2021
6645	400 mm WM in the 401 growth corridor north of Steeles Ave. from 1,000 m west of 9th Line to 900 m east of 9th Line (Zone M5L)	HH401	WM	\$ 1,806,000	A+	2022-2026
6646	400 mm WM in the 401 growth corridor from Steeles Ave to approximately 330 m north (Zone M5L)	HH401	WM	\$ 1,038,000	A+	2022-2026
6647	400 mm WM in the 401 growth corridor north of Steeles Ave. from 600 m west of 10th Line to 1,000 m east of 10th Line (Zone M5L)	HH401	WM	\$ 1,998,000	A+	2022-2026
6648	400 mm WM in the 401 growth corridor from Steeles Ave to 340 m north (Zone M5L)	HH401	WM	\$ 1,414,000	A+	2022-2026
Subtotal Halton Hills - 401 Corridor				\$ 12,569,000		
Subtotal Halton Hills				\$ 248,483,000		

Attachment 1 - Water Capital Program

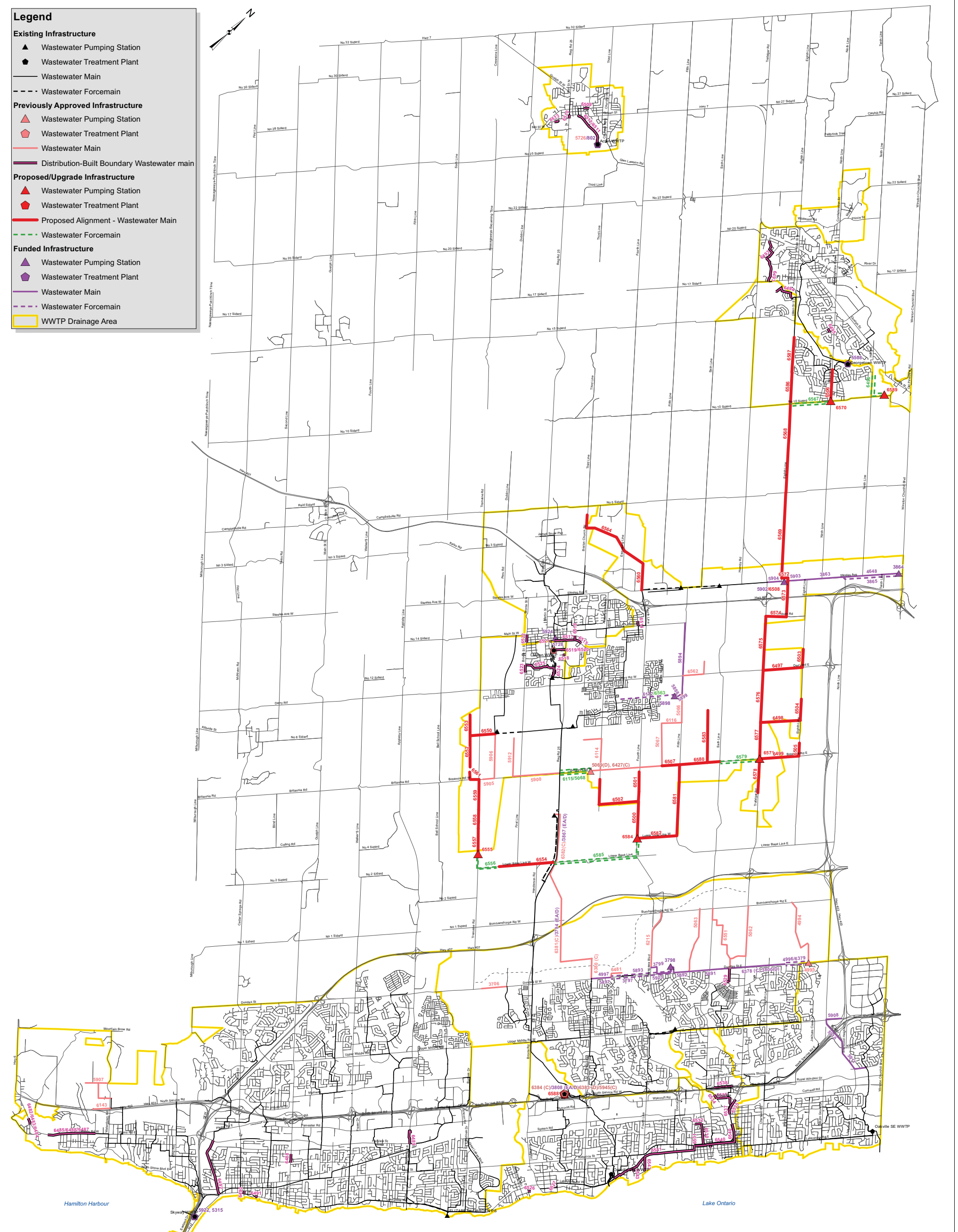
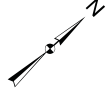
Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
Region-Wide						
4950	SCADA Master Plan Review for Water Purification Plants and Distribution Systems	REG	Study	\$ 200,000	N/A	2012-2016
5725	Water Servicing Master Plan Update	REG	Study	\$ 1,715,000	N/A	2012-2016
5917	SCADA System Network Architecture Improvement Program (REG)	REG	Study	\$ 150,000	N/A	2012-2016
5918	Electrical Utility Meter Monitoring Installation Program (SCADA) (REG)	REG	Study	\$ 190,000	N/A	2012-2016
6189	Water Supply Capacity Annual Monitoring Report	REG	Study	\$ 450,000	N/A	2012-2021
6190	Water Distribution System Analysis	REG	Study	\$ 2,200,000	N/A	2012-2031
6685	Bulk Water Stations on Existing Sites	REG	P.S.	\$ 1,868,000	A	2012-2016
6686	Bulk Water Stations on New Sites	REG	P.S.	\$ 3,267,000	B	2012-2016
Subtotal Region-Wide				\$ 10,040,000		
TOTAL				\$ 952,593,000		

ATTACHMENT 2

PREFERRED WASTEWATER SERVICING STRATEGY MAP

WASTEWATER CAPITAL PROGRAM TABLE

- Legend**
- Existing Infrastructure**
- ▲ Wastewater Pumping Station
 - Wastewater Treatment Plant
 - Wastewater Main
 - - - Wastewater Forcemain
- Previously Approved Infrastructure**
- ▲ Wastewater Pumping Station
 - Wastewater Treatment Plant
 - Wastewater Main
 - Distribution-Built Boundary Wastewater main
- Proposed/Upgrade Infrastructure**
- ▲ Wastewater Pumping Station
 - Wastewater Treatment Plant
 - Proposed Alignment - Wastewater Main
 - - - Wastewater Forcemain
- Funded Infrastructure**
- ▲ Wastewater Pumping Station
 - Wastewater Treatment Plant
 - Wastewater Main
 - - - Wastewater Forcemain
 - WWTP Drainage Area



Attachment 2 - Wastewater Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
Oakville						
3706	600 mm WWM crossing Dundas St and 600mm WWM on Dundas St from 900m west of Colonel William Parkway to Colonel William Parkway	OAK	WWM	\$ 4,005,000	A+	2012-2016
4994	600 mm WWM on new North Oakville road from Burnhamthorpe Rd to Dundas Street	OAK	WWM	\$ 5,880,000	A+	2012-2016
4995	New 37 ML/d WWPS on Dundas St E approximately 550m west of Ninth Line (428 L/s)	OAK	WWPS	\$ 6,935,000	B (Satisfied through 2008 MP)	2012-2016
5062	600 mm WWM on new North Oakville road from Burnhamthorpe Rd West to Dundas Street	OAK	WWM	\$ 2,579,000	A+	2012-2016
5063	525 mm WWM on new North Oakville road from Burnhamthorpe Rd West to Dundas Street	OAK	WWM	\$ 2,087,000	A+	2012-2016
5095	Mid Halton WWTP Odour Control Studies (OAK) - \$87,000/year for 20 years	OAK	STUDY	\$ 1,740,000	N/A	2012-2031
5945	Mid-Halton new effluent sewer/outfall - Construction	OAK	WWTP	\$ 90,000,000	3808 (EA/D), EA Completed	2012-2016
6215	600 mm WWM on Neyagawa Blvd from Burnhamthorpe Rd to new internal North Oakville road, north of Dundas St	OAK	WWM	\$ 4,000,000	A+	2012-2016
6380	2400 mm WWM on new 3rd Line from 700 m north of Dundas St to Dundas St - Construction	OAK	WWM	\$ 7,632,000	3794 (EA/D), EA Completed	2012-2016
6381	2400 mm WWM on new road alignment from Lower Base Line to 3rd Line (700 m north of Dundas St) - Construction	OAK	WWM	\$ 49,923,000	3794 (EA/D), EA Completed	2012-2016
6383	Mid Halton WWTP Phase 4/5 expansion from 75 ML/d to 125 ML/d (OAK) - Construction	OAK	WWTP	\$ 120,000,000	3808 (EA/D), EA Completed	2012-2016
6384	Mid Halton North Pumping Station Expansion - Construction	OAK	WWPS	\$ 13,500,000	3808 (EA/D), EA Completed	2012-2016
6481	450 mm WWM on internal road parallel to Dundas St from west of 16 Mile Creek Bridge to 190 m east of Proudfoot Trail	OAK	WWM	\$ 296,000	A+	2012-2016
6546	Construction of approx 100 m of new local sewer to eliminate Shepherd Rd WWPS sewer sized adequately to accommodate 2031 flows of approximately 21.2 L/s	OAK	WWPS	\$ 400,000	A+	2027-2031
6551	525 mm WWM on new North Oakville road from Burnhamthorpe Rd to Project #5062	OAK	WWM	\$ 1,519,000	A+	2012-2016
6588	Mid-Halton WWTP expansion from 125 ML/d to 175 ML/d	OAK	WWTP	\$ 93,304,000	C	2012-2016
6526	450 mm WWM on service Rd for West River WWPS from West River Street to WWPS	OAK	WWM	\$ 141,000	A+	2017-2021
6527	450 mm WWM on service road to Marine Drive WWPS from Marine Drive	OAK	WWM	\$ 27,000	A+	2017-2021
6528	31.9 L/s upgrade of West River WWPS	OAK	WWPS	\$ 467,000	A+	2012-2016
6529	375 mm WWM on Oak Park from Dundas Street East to Central Park then along Central Park to Georgian Drive	OAK	WWM	\$ 838,000	A+	2012-2016
6530	300 mm WWM on Kerr Street between Forster Park and Rebecca Street	OAK	WWM	\$ 864,000	A+	2017-2021
6531	250 mm WWM on Chisholm/Rebecca Street between Forsyth Street and Chisholm Street on Rebecca Street and on Chisholm Street between Rebecca Street and 45 m north of Lakeshore Rd West	OAK	WWM	\$ 218,000	A+	2022-2026
6532	525 mm WWM on Stewart Street between Felan Drive and Kerr Street	OAK	WWM	\$ 360,000	A+	2027-2031
6534	375 mm WWM on Lyons Lane between Cross Ave and due north up Lyons Lane 150 m	OAK	WWM	\$ 206,000	A+	2022-2026
6535	450 mm WWM on Trafalgar Rd between 10 m north of Inglehart Street North and over Cornwall Rd and railway to connect to Cross Ave	OAK	WWM	\$ 1,191,000	A+	2022-2026
6536	525 mm WWM on Cross Avenue between Argus Rd and Lyons Lane	OAK	WWM	\$ 1,902,000	A+	2022-2026
6537	675 mm WWM on Trafalgar Rd between Spruce Street until 60 m north of Cornwall Rd where it follows the side road crossing the railway line and through the Go Transit Stn car Park and heads due west and north up Argus Rd for 60 m	OAK	WWM	\$ 3,276,000	A+	2022-2026
6538	Upgraded gravity sewer within UGC on North Service Rd from Truman Ave to east of Pearson Dr	OAK	WWM	\$ 472,000	A+	2012-2016
6540	Twin 900 mm WWM on Trafalgar Rd and Randall Street/Rebecca Street from Lawson Street to Wilson Street	OAK	WWM	\$ 8,574,000	A+	2012-2016
6541	Deep Trunk Sewer on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP	OAK	WWM	\$ 45,502,000	B	2012-2016
6542	Decommissioning of 5 WWPSs	OAK	WWPS	\$ 500,000	A+	2012-2016
6543	Gravity Sewers from Decommissioned WWPS's to New Deep Trunk	OAK	WWM	\$ 1,311,000	A+	2012-2016
6544	6 L/s upgrade of Bronte Yacht Club WWPS	OAK	WWPS	\$ 87,000	A+	2012-2016
Subtotal Oakville				\$ 469,736,000		
Burlington						
5907	300 mm WWM North Aldershot Servicing	BURL	WWM	\$ 4,268,000	Being Satisfied Under Separate Planning Study	2012-2016
6143	300mm WWM on North Service Rd from 440m east of Waterdown Rd to 360m north of North Service Rd - Part of 5907	BURL	WWM	\$ 500,000	A+	2012-2016
6545	41 L/s upgrade of Junction Street WWPS	BURL	WWPS	\$ 598,000	A+	2012-2016
6547	23 L/s upgrade of Grandview Avenue WWPS	BURL	WWPS	\$ 335,000	A+	2012-2016
6482	300 mm WWM on Plains Rd West from Grand View heading due north west	BURL	WWM	\$ 128,000	A+	2012-2016
6483	325 mm WWM on Plains Rd West from Grand View heading due north west	BURL	WWM	\$ 82,000	A+	2012-2016
6484	375 mm WWM on Plains Rd West from Grand View heading due north west	BURL	WWM	\$ 91,000	A+	2012-2016
6485	375 mm WWM on Plains Rd West between Howard Rd and entrance to Spring Gardens	BURL	WWM	\$ 588,000	A+	2017-2021
6486	200 mm WWM on Plains Rd West between Howard Rd and entrance to Spring Gardens	BURL	WWM	\$ 61,000	A+	2017-2021
6487	525 mm WWM on Plains Rd West between Howard Rd and entrance to Spring Gardens	BURL	WWM	\$ 2,287,000	A+	2017-2021
6488	250 mm WWM on Guelph Line between Woodward and 120m south of Prospect Street	BURL	WWM	\$ 331,000	A+	2017-2021
6489	450 mm WWM on Appleby Line between Fairview Street and 151 m south of Harvester Rd	BURL	WWM	\$ 1,445,000	A+	2017-2021

Attachment 2 - Wastewater Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
6490	300 mm WWM on Pearl Street between Old Lakeshore Rd and Pine Street	BURL	WWM	\$ 195,000	A+	2017-2021
6491	525 mm WWM on Lakshore Rd between Old Lakeshore Rd entrance and Torrance Street	BURL	WWM	\$ 133,000	A+	2017-2021
6492	825 mm WWM on Maple Avenue East Between Lakeshore Rd and Fairview Street	BURL	WWM	\$ 6,136,000	A+	2017-2021
Subtotal Burlington				\$ 17,178,000		
Milton						
5066	750 mm WWM on Fifth Line from new BPII WWPS (IPFS #5898) to Louis St Laurent Ave	MIL	WWM	\$ 1,721,000	A+	2012-2016
5067	900 mm WWM on James Snow Parkway from Louis St Laurent Ave to Britannia Rd and 1200 mm WWM on Britannia Rd from Louis St Laurent Ave to Britannia Rd /Thompson Rd WWPS	MIL	WWM	\$ 38,053,000	A+	2012-2016
5068	3 x 450 mm WWFM from new WWPS (IPFS #5069) to 300 m east of R.R. 25 (Incl. portion of WWFM under 16 Mile Creek) - Design	MIL	WWFM	\$ 704,000	B (Satisfied through 2008 MP)	2012-2016
5069	New 86 ML/d WWPS on Britannia Rd between 3rd Line and 16 Mile Creek (1000 L/s) - Design	MIL	WWPS	\$ 1,633,000	B (Satisfied through 2008 MP)	2012-2016
5900	675 mm WWM on Britannia Rd from 275 m west of Bronte Rd to 300 m west of Regional Rd 25	MIL	WWM	\$ 2,272,000	A+	2012-2016
5905	375 mm WWM on Britannia Rd from east of Tremaine Rd to Project #5906 on new South Milton road alignment	MIL	WWM	\$ 535,000	A+	2012-2016
5906	600 mm WWM on new Milton South road alignment from Britannia Rd to Tremaine Rd WWPS	MIL	WWM	\$ 2,015,000	A+	2012-2016
5912	200 - 375 mm WWM on new Milton Phase 3 road alignment south to Britannia Rd	MIL	WWM	\$ 922,000	A+	2012-2016
6114	450 mm WWM on new road from west of Thompson Rd to Thompson Rd and 525 mm WWM on Thompson Rd from north of Britannia Rd to Britannia Rd	MIL	WWM	\$ 1,602,000	A+	2012-2016
6115	3 x 450 mm WWFM from new WWPS (IPFS #5069) to 300 m east of R.R. 25 (Incl. portion of WWFM under 16 Mile Creek) - Construction	MIL	WWFM	\$ 6,121,000	B (Satisfied through 2008 MP)	2012-2016
6116	750 mm WWM on Louis St Laurent from 5th Line to James Snow Pkwy	MIL	WWM	\$ 3,067,000	A+	2012-2016
6382	2100mm WWM on Regional Rd 25 from Boyne WWPS to Lower Base Line - Construction	MIL	WWM	\$ 14,755,000	3867 (EA/D), EA Completed	2012-2016
6427	New 86 ML/d WWPS on Britannia Rd between 3rd Line and 16 Mile Creek (1000 L/s) - Construction	MIL	WWPS	\$ 14,193,000	B	2012-2016
6497	300 mm WWM on Derry Rd from 8th Line to Trafalgar Rd	MIL	WWM	\$ 828,000	A+	2017-2021
6498	450 mm WWM on new road from 8th Line to Trafalgar Rd	MIL	WWM	\$ 1,544,000	A+	2017-2021
6499	300 mm WWM on Britannia Rd from 8th Line to Trafalgar/ Britannia WWPS	MIL	WWM	\$ 1,074,000	A+	2017-2021
6500	600 mm WWM on 4th Line from new road to Lower Base Line WWPS	MIL	WWM	\$ 4,332,000	A+	2022-2026
6501	450 mm WWM on 4th Line from south of Britannia Rd to new road	MIL	WWM	\$ 3,481,000	A+	2022-2026
6502	525 mm WWM on Thompson Rd and new internal road from south of Britannia to 4th Line	MIL	WWM	\$ 2,357,000	A+	2022-2026
6503	300 mm WWM on 8th Line from north of Derry Rd to Derry Rd	MIL	WWM	\$ 502,000	A+	2022-2026
6504	450 mm WWM on 8th Line from north of new road to new road	MIL	WWM	\$ 808,000	A+	2022-2026
6505	300 mm WWM on 8th Line from north of Britannia Rd to Britannia Rd	MIL	WWM	\$ 397,000	A+	2022-2026
6507	1200 mm WWM on Britannia Rd to 5th Line to James Snow Pkwy	MIL	WWM	\$ 3,138,000	A+	2017-2021
6508	Decommissioning of HH WWPS #3, connection to new 8th Line trunk sewer	MIL	WWPS	\$ 500,000	A+	2017-2021
6550	525 mm WWM on Louis St Laurent Extension from Tremaine Rd to Tremaine Rd WWPS	MIL	WWM	\$ 1,430,000	A+	2012-2016
6552	375 mm WWM on new road alignment in Milton Education Village from from 950 m south of Louis St Laurent extension to Louis St Laurent extension	MIL	WWM	\$ 2,918,000	A+	2017-2021
6553	450 mm WWM on new road in Milton Education Village from 800m north of Louis St Laurent extension to Louis St Laurent extension and on Louis St Laurent extension from 340m west of Tremaine Rd to Tremaine Rd	MIL	WWM	\$ 844,000	A+	2017-2021
6554	600 mm WWM on Lower Base Line from WWFM discharge approx 650 m west of 1st Line to Regional Rd 25	MIL	WWM	\$ 7,118,000	A+	2022-2026
6555	17 ML/d WWPS on Tremaine Rd (200 L/s)	MIL	WWPS	\$ 6,476,000	B	2022-2026
6556	Twinned 300 mm WWFM from Tremaine WWPS to Lower Base Line, approx 650 m west of 1st Line	MIL	WWFM	\$ 2,568,000	A+	2022-2026
6557	600 mm WWM on Tremaine Rd from approximately 880 m north of South Tremaine Rd WWPS to South Tremaine Rd WWPS	MIL	WWM	\$ 3,310,000	A+	2022-2026
6558	525 mm WWM on Tremaine Rd from approx 1500m north of South Tremaine WWPS to approx 880 m north of South Tremaine WWPS	MIL	WWM	\$ 2,700,000	A+	2022-2026
6559	450 mm WWM on Tremaine Rd from Britannia Rd to 1700 m south of Britannia Rd	MIL	WWM	\$ 4,154,000	A+	2022-2026
6560	525 mm WWM on James Snow Pkwy and new road alignment from Steeles Ave to Esquesing Line	MIL	WWM	\$ 1,931,000	A+	2017-2021
6561	375 mm WWM on new road and Britannia Rd from Milton Education Village to Tremaine Rd	MIL	WWM	\$ 488,000	A+	2022-2026
6562	450 mm WWM on new road from 440 m north of Derry Rd to Derry Rd and 525 mm WWM on Derry Rd from 725 m east of 5th Line to 5th Line	MIL	WWM	\$ 1,117,000	A+	2012-2016
6563	Decommissioning of temporary FM (IPFS #6112)	MIL	WWFM	\$ 1,000,000	A+	2012-2016
6564	525 mm WWM on new alignment from Esquesing Line to 3rd Line	MIL	WWM	\$ 2,953,000	A+	2017-2021
6571	104 ML/d WWPS on Trafalgar Rd/ Britannia Rd (1200 L/s)	MIL	WWPS	\$ 18,532,000	B	2017-2021
6573	1050 mm WWM 401 Crossing from Steeles Ave to Auburn Rd	MIL	WWM	\$ 8,499,000	B	2017-2021
6574	1050 mm WWM on Auburn Rd from Hwy 401 crossing easement to Trafalgar Rd	MIL	WWM	\$ 2,923,000	B	2017-2021
6575	1050 mm WWM on Trafalgar Rd from Auburn Rd to Derry Rd	MIL	WWM	\$ 6,623,000	A+	2017-2021
6576	1050 mm WWM on Trafalgar Rd from Derry Rd to Golf Course	MIL	WWM	\$ 4,269,000	A+	2017-2021
6577	1050 mm WWM on Trafalgar Rd from Golf Course to Britannia Rd / Trafalgar Rd WWPS	MIL	WWM	\$ 7,561,000	A+	2017-2021
6578	525 WWM on Trafalgar Rd from south of Britannia Rd to Britannia Rd/ Trafalgar Rd WWPS	MIL	WWM	\$ 4,105,000	A+	2022-2026

Attachment 2 - Wastewater Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
6579	Twinned 750 mm WWFM on Britannia Rd from Trafalgar Rd to 6th Line	MIL	WWFM	\$ 11,288,000	A+	2017-2021
6580	1200 mm WWM on Britannia Rd from 6th Line to 5th Line	MIL	WWM	\$ 7,596,000	A+	2017-2021
6581	1350 mm WWM on 5th Line from Britannia Rd to Lower Base Line	MIL	WWM	\$ 14,663,000	A+	2022-2026
6582	1350 mm WWM on Lower Base Line from 5th Line to 4th Line	MIL	WWM	\$ 9,356,000	A+	2022-2026
6583	525 mm WWM on new road from 1400 m north of Britannia Rd to Britannia Rd	MIL	WWM	\$ 5,356,000	A+	2017-2021
6584	156 ML/d WWPS at Lower Base Line and 4th Line (1805 L/s)	MIL	WWPS	\$ 28,403,000	B	2022-2026
6585	Twinned 900 mm WWFM from Lower Base Line to RR 25	MIL	WWFM	\$ 22,331,000	C	2017-2021
6514	450 mm WWM on Maple Ave between Main Street East and Turner Drive	MIL	WWM	\$ 234,000	A+	2012-2016
6515	300 mm WWM on Childs Drive between Ontario Street South and the south entrance of Satok Crescent	MIL	WWM	\$ 416,000	A+	2017-2021
6516	375 mm WWM on Nipissing Rd between Milton Mall entrance and Childs Drive	MIL	WWM	\$ 207,000	A+	2017-2021
6517	450 mm WWM on Oak Street between Charles Street and Ontario Street South	MIL	WWM	\$ 1,043,000	A+	2012-2016
6518	250 mm WWM on Donald Campbell Avenue between Ontario Street South and Cemetery Rd	MIL	WWM	\$ 90,000	A+	2022-2026
6519	375 mm WWM between 50 m south of Wakefield Rd and the southern tip of Fulton Street	MIL	WWM	\$ 354,000	A+	2022-2026
6520	525 mm WWM between 50 m south of Wakefield Rd and the southern tip of Fulton Street	MIL	WWM	\$ 135,000	A+	2022-2026
6521	750 mm WWM linking Oak Street east to Oak Street West	MIL	WWM	\$ 23,000	A+	2022-2026
6522	250 mm on Bronte Street West between Main Street West and Robert Street	MIL	WWM	\$ 299,000	A+	2027-2031
6523	450 mm WWM on Bronte Street South between Anne Blvd and 67 m north of Laurier Ave entrance	MIL	WWM	\$ 652,000	A+	2027-2031
6524	600 mm WWM on Williams Ave/Commercial Street from southern corner of Williams Ave and south down Commercial Street to Laurier Ave	MIL	WWM	\$ 908,000	A+	2017-2021
6525	750 mm WWM on Anne Blvd between Bronte Street South and down along the length of Meadowbrook Drive and across Bronte Meadows Park to join Williams Ave at southern corner	MIL	WWM	\$ 2,419,000	A+	2022-2026
Subtotal Milton				\$ 303,846,000		
Halton Hills - Acton						
5726	Acton WWTP Expansion to 7 ML/d	HHACT	WWTP	\$ 22,890,000	EA Complete	2012-2016
6509	450 mm WWM on Mill Street between Wilbur Street North and Wallace Street	HHACT	WWM	\$ 262,000	A+	2012-2016
6510	300 mm WWM on Main Street South between Cobblehill Rd and Brock Street	HHACT	WWM	\$ 148,000	A+	2017-2021
6511	600 mm WWM from Elgin Street South along Black Creek alignment to Tanners Drive	HHACT	WWM	\$ 465,000	B (Separate EA Study Required)	2017-2021
6512	525 mm WWM from Elgin Street South along Black Creek alignment to Tanners Drive	HHACT	WWM	\$ 1,594,000	B (Separate EA Study Required)	2022-2026
6513	250 mm WWM on Storey Drive between Kingham and Cobblehill Rd	HHACT	WWM	\$ 196,000	A+	2022-2026
6565	TP Offset Program	HHACT	STUDY	\$ 3,300,000	A+	2012-2016
6566	Black Creek Monitoring Program	HHACT	STUDY	\$ 550,000	A+	2012-2016
Subtotal Halton Hills - Acton				\$ 29,405,000		
Halton Hills - Georgetown						
6493	300 mm WWM on Atwood Ave/Murno Circle and existing sewer alignment from Berton Blvd to Maple Ave	HHGEO	WWM	\$ 2,060,000	A+	2017-2021
6494	300 mm WWM on Arborglen Drive and across North Halton Golf Course towards Maple Ave	HHGEO	WWM	\$ 280,000	B (Separate EA Study Required)	2017-2021
6495	300 mm WWM on Delrex Blvd between Irwin Crescent and the southern entrance to Fauldon Drive	HHGEO	WWM	\$ 140,000	A+	2017-2021
6496	Twinned 250 mm WWFM from Norval WWPS to Argyll Rd	HHGEO	WWFM	\$ 886,000	A+	2022-2026
6506	675 mm WWM on 9th Line from Argyll Rd to 10th Side Rd - Georgetown South Connection	HHGEO	WWM	\$ 3,955,000	A+	2017-2021
6567	Twinned 300 mm WWFM on 10th Side Rd from 9th Ln to 8th Ln	HHGEO	WWFM	\$ 847,000	A+	2017-2021
6568	900 mm WWM on 8th Line from 10th Side Rd to 5th Side Rd	HHGEO	WWM	\$ 5,891,000	A+	2017-2021
6569	900 mm WWM on 8th Line from 5th Side Rd to Steeles Ave	HHGEO	WWM	\$ 5,869,000	A+	2017-2021
6570	24 MLD WWPS at 10 Side Rd/9th Line (275 L/s)	HHGEO	WWPS	\$ 6,795,000	B	2017-2021
6586	750 mm WWM on 8th Line from Argyll Rd to 10th Side Rd	HHGEO	WWM	\$ 1,782,000	A+	2017-2021
6587	600 mm WWM on 8th Line from Miller Rd to Argyll Rd	HHGEO	WWM	\$ 1,420,000	A+	2017-2021
6589	3 ML/d WWPS on 10th Side Rd in Norval (35 L/s)	HHGEO	WWPS	\$ 684,000	B	2022-2026
Subtotal Halton Hills - Georgetown				\$ 30,609,000		
Halton Hills - 401 Corridor						
6572	1050 mm WWM on Steeles Ave from 8th Line to Crossing Easement	HH401	WWM	\$ 1,755,000	B	2017-2021
Subtotal Halton Hills - 401 Corridor				\$ 1,755,000		
Subtotal Halton Hills				\$ 61,769,000		

Attachment 2 - Wastewater Capital Program

Region IPFS ID	Project Description	Municipality	Project Type	Total Estimated Cost (2012\$)	EA Schedule	Project Start Year
Region-Wide						
4810	Long Term Biosolids Management and Implementation Plan	REG	STUDY	\$ 20,780,000	N/A	2012-2016
5729	Halton Wastewater Master Plan (REG) - \$880,000 in 2015, 2020, 2025 and 2030	REG	STUDY	\$ 3,520,000	N/A	2012-2031
6187	Wastewater Treatment Capacity Annual Monitoring Report (REG) - \$45,000/year for 20 years	REG	STUDY	\$ 900,000	N/A	2012-2031
6188	Wastewater Collection System Analysis (REG) - \$110,000/year for 20 years	REG	STUDY	\$ 2,200,000	N/A	2012-2031
Subtotal Region-Wide				\$ 27,400,000		
TOTAL				\$ 879,929,000		