Regional Municipality of Halton

Sustainable Halton Water and Wastewater Master Plan

VOLUME 2 – Project File

October 2011

Halton REGION

AECOM

Water

Regional Municipality of Halton

Volume II – Project File

Prepared by:

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Project Number:

60114062

Date:

October 7, 2011

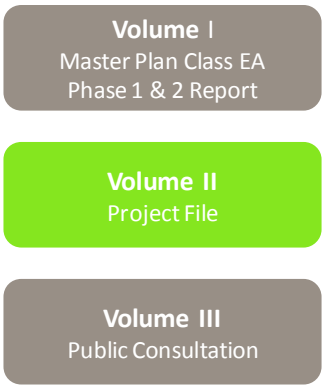
Introduction

Volume II – Project File Outline

The Project File provides project-specific technical background and supporting information for the all Class EA Schedule B projects. The Project File includes evaluation tables and maps for alternative sites and alignments, which were used in developing the preferred locations for water and wastewater infrastructure.

The Project File is the second of three volumes that comprises the Master Plan documentation, as shown in the figure on the right.

Volume II in Context of the Overall Master Plan Documentation



Volume II has been organized into two sections and is organized as follows:

Water

The Water section of Volume II contains the water technical background information and site/alignment evaluations critical in the development of the Water and Wastewater Master Servicing Plan. Included for the projects is the following information, where applicable:

- Project Tracking Sheet
- Evaluation Matrix
- Alternative Solutions Map
- Preferred Solution Map
- Watermain Profile Drawings
- Detailed Site Map

Wastewater

The Wastewater section of Volume II contains the wastewater technical background information and site/alignment evaluations critical in the development of the Water and Wastewater Master Servicing Plan. Included for the projects is the following information, where applicable:

- Project Tracking Sheet
- Evaluation Matrix
- Alternative Solutions Map
- Preferred Solution Map
- Sewer Profile Drawings
- Flow Calculation Spreadsheet

WATER

PROJECT IPFS NUMBER	DESCRIPTION
5061/6693/6696/6697	Zone 4 Reservoir Expansion near Trafalgar Road, this site also encompasses the Zone 5 BPS and the Zone 6 BPS
6367	120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2)
6601/6670	Beaufort Reservoir and Pumping Station Expansion (Zone B4)
6606/6607/6654/6655/6608	750 mm WWM on Trafalgar Road north (Zone G6L)
6614	600 mm WM on Adamson St from 10th Sideroad to Guelph St and on Guelph St from Adamson St to 10th Sideroad (Zone G6L)
6640/6688/6689/6690	400/600 mm WM on Trafalgar Road south (Zone M5L)
6661	900 mm Second Feedermain to Davis Road Booster Pumping Station (Zone O1)
6663	400 mm WM from 9th Line on easement to Bristol Circle (Zone O3)
6665	400 mm WM between Tyandaga Reservoir and Beaufort Reservoir (Zone B4)
6686	Bulk Water Stations on New Sites
6694	10 ML Zone G6L Storage at 22nd Sideroad
6701	Kitchen Zone O3 Pumping Station expansion by 80 ML/d
6863	Waterdown Road Pumping Station Expansion (Zones B2, B3A & B5A)

WASTEWATER

PROJECT IPFS NUMBER	DESCRIPTION
6570	24 MLD WWPS at 10 Sideroad/9th Line (275 L/s)
6572/6573/6574	1050 mm WWM crossing Highway 401 on Trafalgar Road
6589	3.6 ML/d WWPS on 10th Sideroad in Georgetown Southeast (42 L/s)
6555	17 ML/d WWPS on Tremaine Rd (200 L/s)
6571	104 ML/d WWPS on Trafalgar Rd/ Britannia Rd (1200 L/s)
6584	156 ML/d WWPS at Lower Base Line and 4th Line (1805 L/s)
6541	Deep Trunk Sewer on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP

Sustainable Halton Capital Program

IPFS ID: 5061/6693/6696/6697

Project Description: Zone 4 Reservoir Expansion near Trafalgar Road, this site also encompasses the Zone 5 BPS and the Zone 6 BPS

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	5061, 6697, 6696, 6693
Prepared/Updated By:	AECOM		

Project Name/Description:

30 ML Reservoir, near Trafalgar Road and No.5 Siderd (Zone M4). Site also encompasses projects IPFS # 6696 (Zone 5 BPS), IPFS # 6693 (Zone 6 BPS), and IPFS # 6697 (Zone 4 Reservoir Expansion).

Project Need:

The Zone M4L Reservoir is required to meet future storage requirements for Zone M4L. The phase 1 storage requirement is for 30 ML with a further phase 2 expansion of 20 ML. The preferred site is located 350 m south of No. 5 Sideroad on the west side of Trafalgar Road. The new facility will meet future growth needs within 2031 and is also a strategic site for servicing areas to the north and east in the long term. The project is classified as Schedule B because new lands will need to be acquired and site alternatives have been evaluated.

The site will also include future Zone 4 reservoir expansion and Zone 5 and Zone 6 pumping stations. Zone 5 BPS will supplement Halton Hills Highway 401 booster Employment corridor and Milton Zone 5. The Zone 6 BPS is required to service the new lake based Georgetown Service Area.

Evaluation:

Storage sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. An elevated tank was not considered feasible in this case, as the storage requirement far exceeded a typical tank volume. The alternative reservoir sites considered in the evaluation were all relatively in close proximity to one another.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:

• Environmental/Natural Heritage: Site is not within any Niagara Escarpment or other environmentally sensitive area. Site is adjacent to Conservation Halton Regulation Limit Area.
• Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
• Transport: The site fronts an existing road right-of-way (Trafalgar Road).
• Size of site: Preferred alternative is sufficient in size to house multiple phases of reservoir and pumping station expansion
• Long Term Servicing: There is sufficient land available for facility expansions to meet long term servicing requirements.
• Technical: Site is at optimal ground elevation for Zone 4 service area

Selection of Preferred Servicing Alternative:

Six (6) alternative storage sites were evaluated as follows:

• Alternative 1 – Site located on the northeast corner of Trafalgar Rd and 5 Side Rd.
• Alternative 2 – Site located 650 m north of 5 Side Rd on the east side of Trafalgar Rd.
• Alternative 3 – Site located 350 m south of 5 Side Rd on the west side of Trafalgar Rd.
• Alternative 4 – Site located south of elementary school, east of Trafalgar Rd and approximately 150 m south of 5 Side Rd.
• Alternative 5 – Site located north of 5 Side Rd, approx. 510 m west of Trafalgar Rd and east of Sixth Line.
• Alternative 6 – Site located approx. 750 m north of 5 Side Rd, on the west side of Trafalgar Rd.

Alternative 3 was selected as the preferred site for the future Zone 4 Reservoir and Pumping Station because the site is located on optimum ground elevation for constructability and operational efficiency, it will not impact environmentally designated lands and does not require Conservation Authority Permits. It is close to the preferred feedermain alignment and sufficient in size.

Z4 Res (Alt #6)
Area=5.38 Ha

Z4 Res (Alt #2)
Area=5.14 Ha

Z4 Res (Alt #1)
Area=5.24 Ha

Z4 Res (Alt #5)
Area=6.77 Ha

Z4 Res (Alt #4)
Area=4.15 Ha

Z4 Res (Alt #3)
Area=5 Ha

Sixth Line
Eighth Line
No 5 Sideroad
Trafalgar Rd
Hornby Rd

255
265
245
235
225
215
205

Legend

- Theoretical Size of Reservoir Cell
- Alternative Property Limit
- Parcel Fabric
- Conservation Halton - Regulation Limit
- Contour (10m intervals)
- Streams

Halton Region

Sustainable Halton
Water and Wastewater Master Plan

Alternative Zone 4 Res and Zone 5/Zone 6 BPS Sites Project 5061/6697/6696/6693

AECOM

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Sep 27, 2011
File: 60114062-385-W

Z4 Res (Alt #6)
Area=5.38 Ha

Z4 Res (Alt #2)
Area=5.14 Ha

Z4 Res (Alt #5)
Area=6.77 Ha

Z4 Res (Alt #1)
Area=5.24 Ha

Z4 Res (Alt #4)
Area=4.15 Ha

Z4 Res (Alt #3)
Area=5 Ha

Tratalgar Rd

No.5 Siderd

Legend

- Theoretical Size of Reservoir Cell
- Alternative Property Limit
- Parcel Fabric
- Conservation Halton - Regulation Limit
- Contour (1m intervals)
- Streams

Halton REGION

Sustainable Halton
Water and Wastewater Master Plan

Alternative Zone 4 Res and Zone 5/Zone 6 BPS Sites Project 5061/6697/6696/6693

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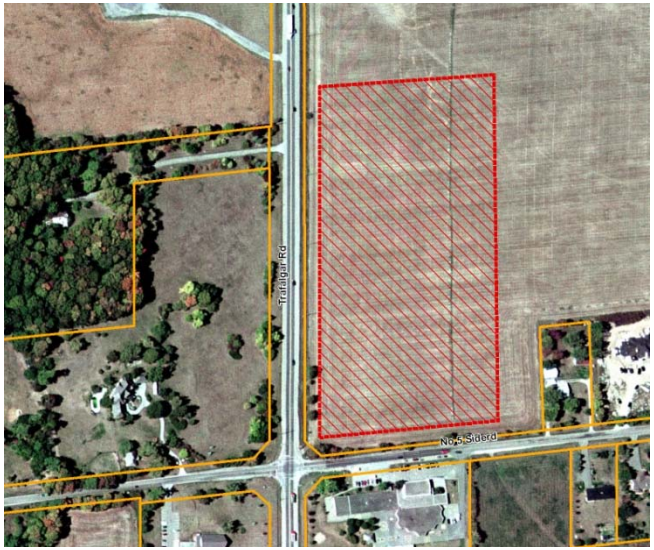
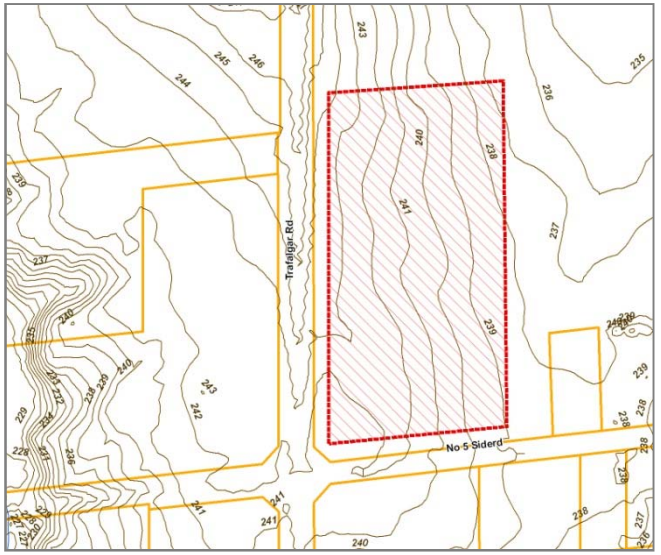
Sep 27, 2011
File: 60114062-392-W

Alternative Storage Facility Site #1

(Northeast corner of Trafalgar Rd and 5 Side Rd)



Plan View

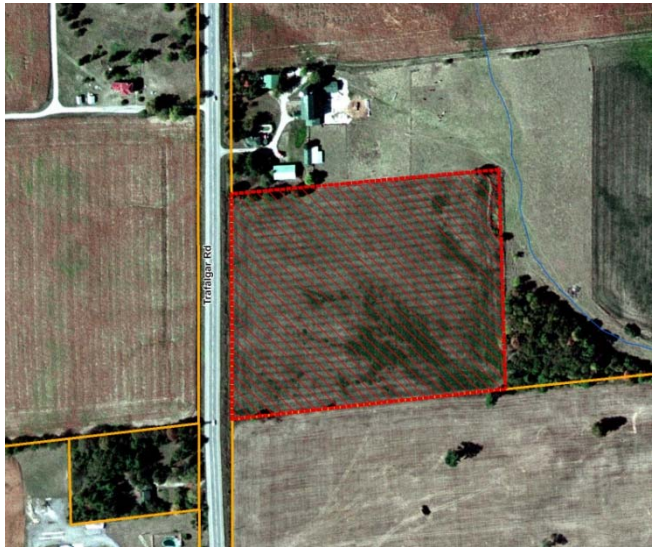


Elevation Contours

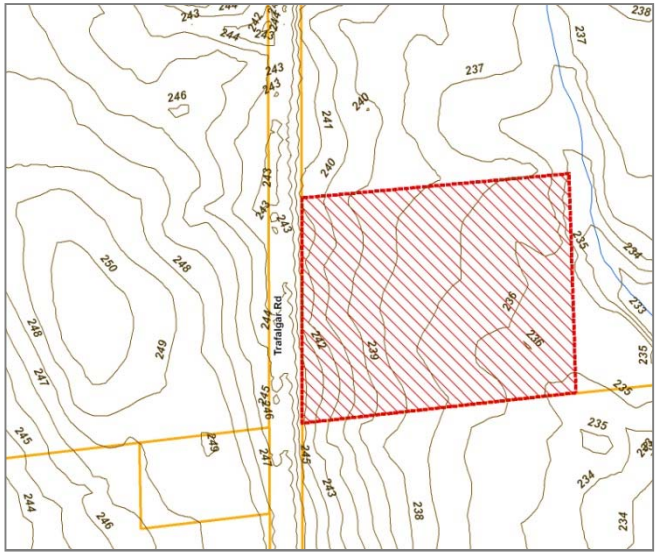
Profile (Street) View – Corner of Trafalgar Rd and 5 Side Rd

Alternative Storage Facility Site #2

(650 m north of 5 Side Rd, on the east side of Trafalgar Rd)



Plan View

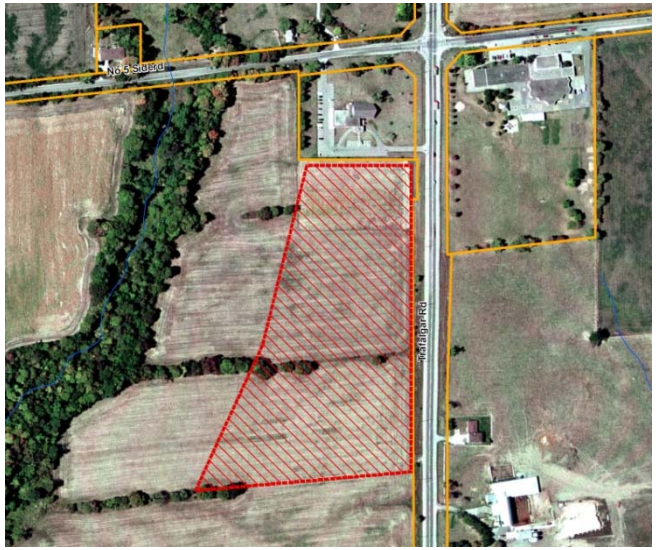


Elevation Contours

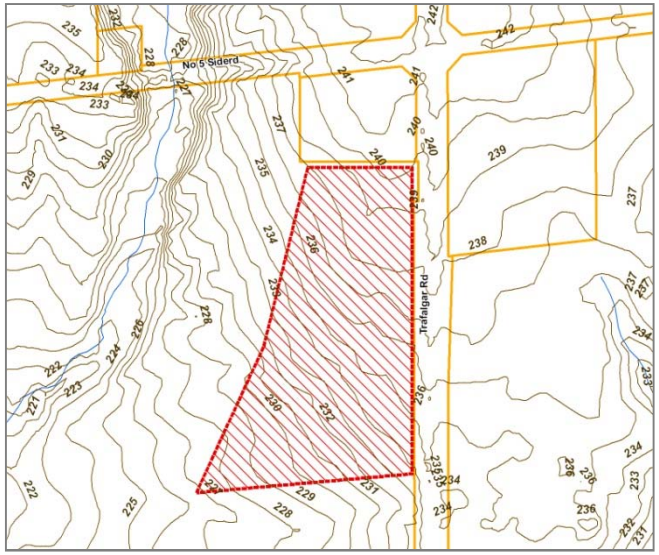
Profile (Street) View – East side of Trafalgar Rd

Alternative Storage Facility Site #3

(South of 5 Side Rd, on the west side of Trafalgar Rd)



Plan View

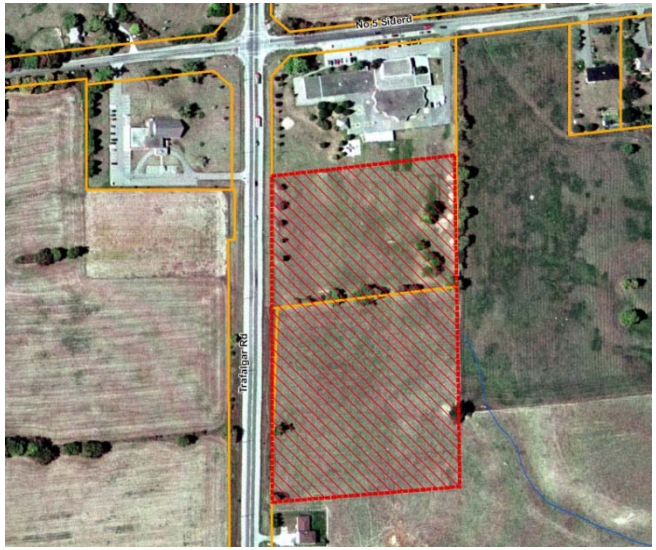


Elevation Contours

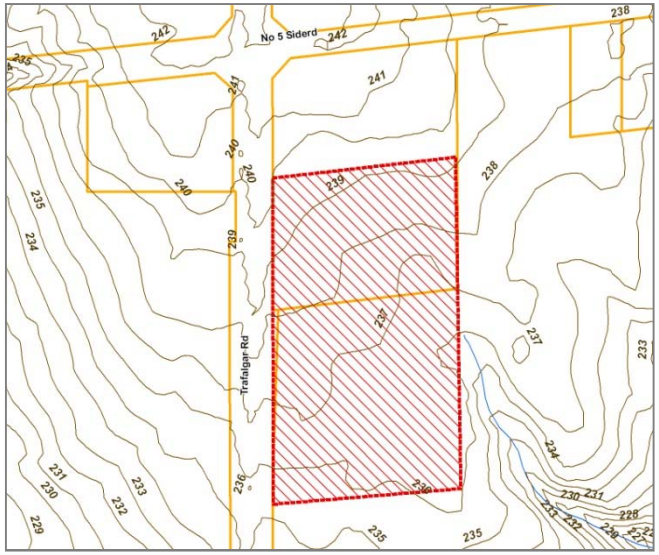
Profile (Street) View – West side of Trafalgar Rd

Alternative Storage Facility Site #4

(South of 5 Side Rd, on the east side of Trafalgar Rd)



Plan View

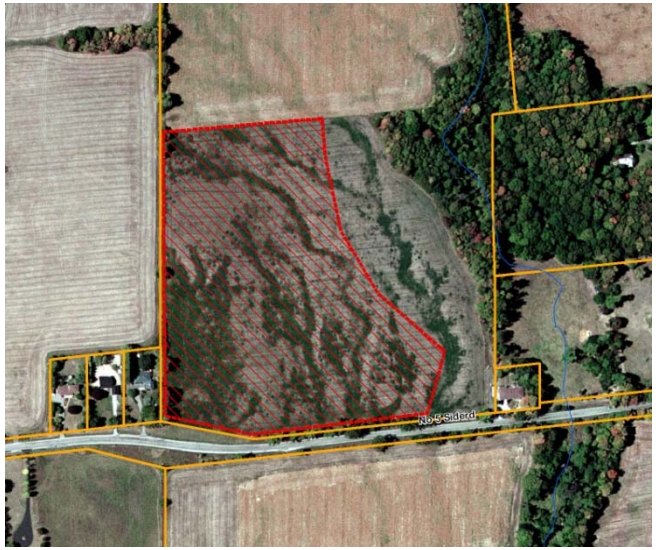


Elevation Contours

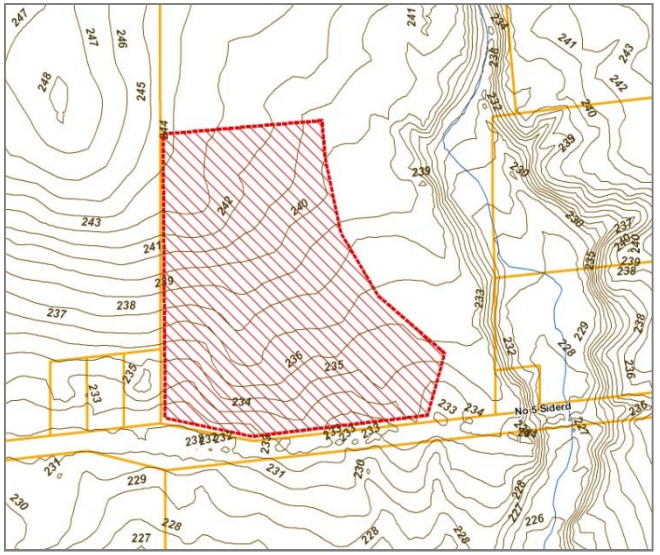
Profile (Street) View – Looking southeast from Trafalgar Rd

Alternative Storage Facility Site #5

(North of 5 Side Rd, on the west side of Trafalgar Rd)



Plan View



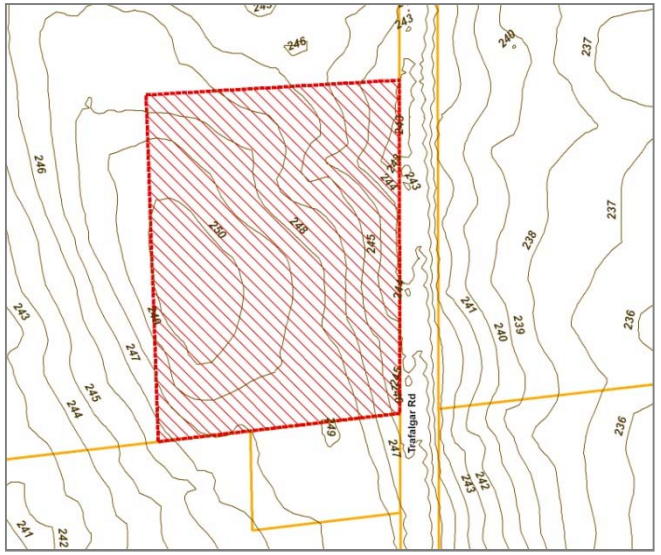
Elevation Contours

Profile (Street) View – Looking northeast from 5 Side Rd

Alternative Storage Facility Site #6

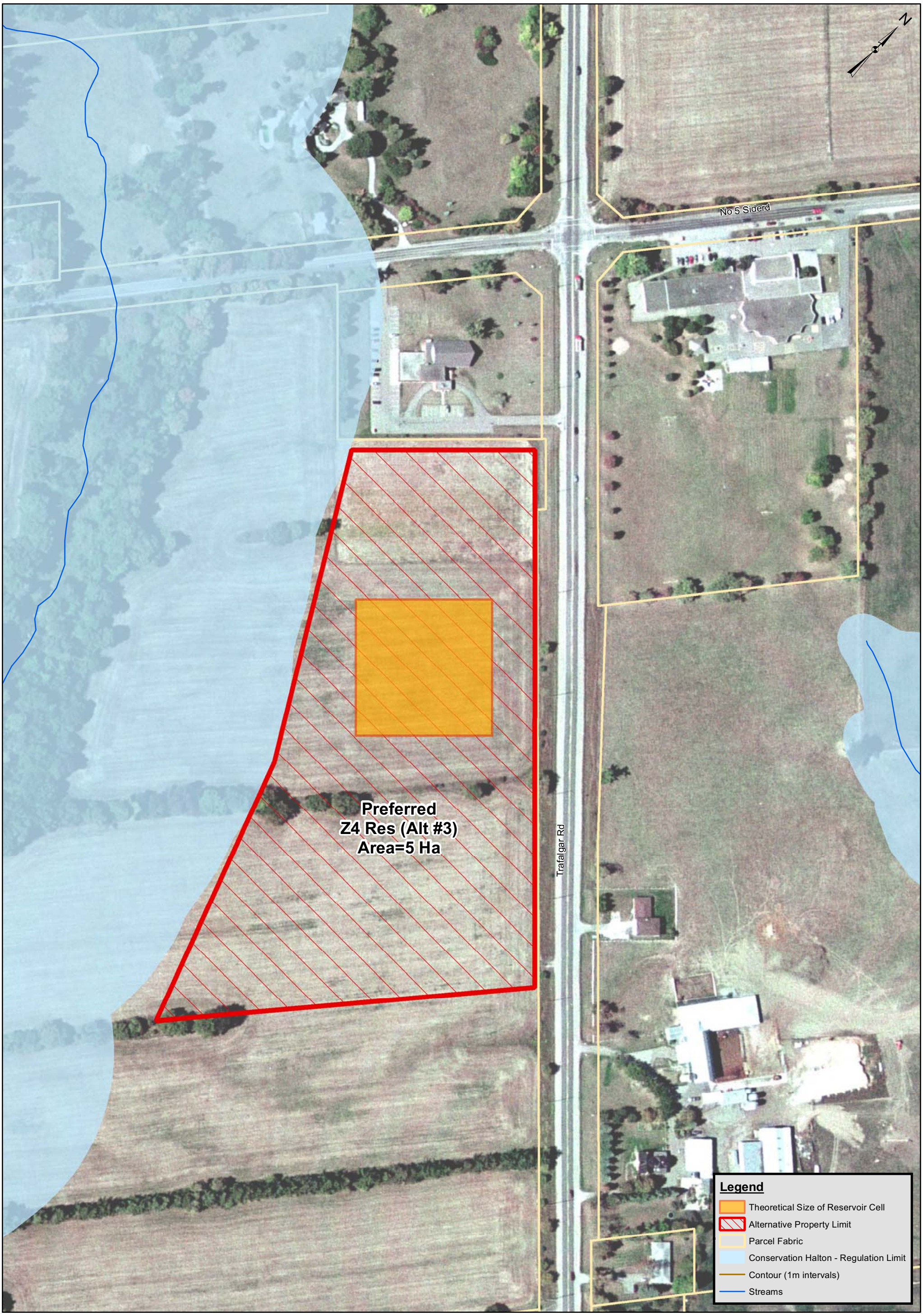
(North of 5 Side Rd, on the west side of Trafalgar Rd)

Plan View



Elevation Contours

Profile (Street) View – West side of Trafalgar Rd



Halton REGION

Sustainable Halton
Water and Wastewater Master Plan

Preferred Zone 4 Res and Zone 5/Zone 6 BPS Site
Project 5061/6697/6696/6693

AECOM

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Sep 28, 2011
File: 60114062-393-W

Project No. 5061/6697/6696/6693 - Zone 4 Reservoir and Zone 5/Zone 6 Booster Pumping Station

Project No. 5061/6697/6696/6693 - Zone 4 Reservoir and Zone 5/Zone 6 Booster Pumping Station Alternative Sites						
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**	**Alternative 6**
Description	Reservoir located on the northeast corner of Trafalgar Rd and 5 Side Rd. Site will also accommodate future Zone 5 and Zone 6 pumping station.	Reservoir located 650 m north of 5 Side Rd on the east side of Trafalgar Rd. Site will also accommodate future Zone 5 and Zone 6 pumping station.	Reservoir located 350 m south of 5 Side Rd on the west side of Trafalgar Rd. Site will also accommodate future Zone 5 and Zone 6 pumping station.	Reservoir located south of elementary school, east of Trafalgar Rd and approximately 150 m south of 5 Side Rd. Site will also accommodate future Zone 5 and Zone 6 pumping station.	Reservoir located north of 5 Side Rd, approximately 510 m west of Trafalgar Rd and east of Sixth Line. Site will also accommodate future Zone 5 and Zone 6 pumping station.	Reservoir located approximately 750 m north of 5 Side Rd, on the west side of Trafalgar Rd. Site will also accommodate future Zone 5 and Zone 6 pumping station.
Environmental	Land is currently comprised of (Prime) agricultural lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is not adjacent to any Regionally Significant Wetlands or creeks. Site does not require Conservation Halton Conservation Permit	Land is currently comprised of (Prime) agricultural lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is adjacent to Regionally Significant Wetlands and close to a tributary of Middle Sixteen Mile Creek (permanent coldwater). Part of the site lies within the Conservation Halton Conservation Authority Regulation Limit. Site constrained by Conservation Halton Regulation Limit	Land is currently comprised of (Prime) agricultural lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is adjacent to Greenlands, Regionally Significant Wetlands, and woodlands within the Conservation Halton Conservation Authority Regulation Limit. Site is close to a tributary of Middle Sixteen Mile Creek (permanent warm water). Site does not require Conservation Halton Conservation Permit	Current land is comprised of school field (Halton District School Board) and (Prime) agricultural lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is adjacent to Conservation Halton Conservation Authority Regulation Limit and is close to a tributary of Middle Sixteen Mile Creek (permanent warm water). Site does not require Conservation Halton Conservation Permit	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is adjacent to Greenlands, Regionally Significant Wetlands, and woodlands within the Conservation Halton Conservation Authority Regulation Limit. Site is close to a tributary of Middle Sixteen Mile Creek (permanent warm water). Site does not require Conservation Halton Conservation Permit Differing from all other alternatives this alternative requires 3 extra watermain crossings of environmental features. Watermain crossings will require Conservation Permit	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site. Site is not adjacent to any Regionally Significant Wetlands or woodlands. Site is more than 200 m away from the nearest creek. Site does not require Conservation Halton Conservation Permit
Technical	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m. Location ground level is 238-244 m, slightly higher than required. Higher ground elevation. All alterntatives with locations adjacent to Trafalgar Road are considered equal in regards to project lengths (Zone 4 / Zone 6 combinations will add to same length) Site is close to watermain alignment on Trafalgar Road no extra multiple feedermain lenghts required Greenfield Construction. Low potential for conflict with utilities. Good access to Trafalgar Rd.	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m Location ground level is 236-241 m, slightly higher than required. Higher ground elevation. All alterntatives with locations adjacent to Trafalgar Road are considered equal in regards to project lengths (Zone 4 / Zone 6 combinations will add to same length) Site is close to watermain alignment on Trafalgar Road no extra multiple feedermain lenghts required Greenfield Construction. Low potential for conflict with utilities Good access to Trafalgar Rd.	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m. Location ground level is 228-239 m, which is within the range of the required ground elevation. Optimal ground elevation All alterntatives with locations adjacent to Trafalgar Road are considered equal in regards to project lengths (Zone 4 / Zone 6 combinations will add to same length) Site is close to watermain alignment on Trafalgar Road no extra multiple feedermain lenghts required Greenfield Construction. Low potential for conflict with utilities. Good access to Trafalgar Rd.	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m. Location ground level is 236-239 m, which is slightly higher than required. Higher ground elevation. All alterntatives with locations adjacent to Trafalgar Road are considered equal in regards to project lengths (Zone 4 / Zone 6 combinations will add to same length) Site is close to watermain alignment on Trafalgar Road no extra multiple feedermain lenghts required Greenfield Construction. Low potential for conflict with utilities. Good access to Trafalgar Rd.	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m. Location ground level is 234-243 m, which meets ground level requirements. Land slopes up away from 5 Side Rd. Site will require some regrading to meet operational requirements. Alternative requires extra length of combined Zone 4 / Zone 6 feedermains as site is not adjacent to Trafalgar Road Greenfield Construction. Low potential for conflict with utilities. Feedermain construction would require creek crossing along 5 Side Rd west of Trafalgar Rd.	Top water level requirement is 236 m. Ground elevation requirement is 233-234 m. Location ground level is 244-250 m, which is significantly higher than required. Land slopes up away from Trafalgar Rd. Highest ground elevation All alterntatives with locations adjacent to Trafalgar Road are considered equal in regards to project lengths (Zone 4 / Zone 6 combinations will add to same length) Site is close to watermain alignment on Trafalgar Road no extra multiple feedermain lenghts required Greenfield Construction. Low potential for conflict with utilities. Good access to Trafalgar Rd.
Socio / Cultural	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along Trafalgar Rd during construction. Potential for some traffic disturbance/disruption to school buses along 5 Side Rd during construction. Site is opposite an elementary school to the south and is close to residential farms and properties. There is potential for some minimial visual impact as site is located on a corner. Low potential for impact on nearby landowners, as construction will be confined to property limits. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along Trafalgar Rd during construction. Several residential farms surround the site. Minimal visual impact as reservoir will be in-ground. Low potential for impact on nearby landowners, as construction will be confined to property limits. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along Trafalgar Rd during construction. Several residential farms surround the site. The site is directly south of the Hillcrest United Church, located at the intersection of Trafalgar Rd and 5 Side Rd. Minimal visual impact is anticipated as reservoir will be in-ground. Low potential for impact on nearby landowners, as construction will be confined to property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located partially on school property and partially on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along Trafalgar Rd during construction. The site is bordered by Pineview Public School to the north, by a residence to the south, by a residential farm to the east, and by Trafalgar Rd to the west. Minimal visual impact is anticipated as reservoir will be in-ground. High potential for impact on adjacent school during school hours, as construction will partially take place on school field. Construction during normal working hours may cause noise disturbances to school children and staff. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along 5 Side Rd during construction. Several residential farms surround the site, with a few residences to the southwest. Minimal visual impact is anticipated as reservoir will be in-ground. Low potential for impact on nearby landowners, as construction will be confined to property limits. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along Trafalgar Rd during construction. Several residential farms surround the site. Minimal visual impact is anticipated as reservoir will be in-ground. Low potential for impact on nearby landowners, as construction will be confined to property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.
Financial	Reservoir construction cost slightly higher due to moderate regrading to meet elevation requirements Feedermain construction same as other alternatives with the exception of Alt 5 which is higher.	Reservoir construction higher due to regrading to meet elevation requrements. Feedermain construction same as other alternatives with the exception of Alt 5 which is higher.	Reservoir construction lowest due to minimal regrading requirements Feedermain construction same as other alternatives with the exception of Alt 5 which is higher.	Reservoir construction cost slightly higher due to moderate regrading to meet elevation requirements Feedermain construction same as other alternatives with the exception of Alt 5 which is higher.	Reservoir construction cost slightly higher due to moderate regrading to meet elevation requirements Greater feedermain distance/cost plus cost of creek crossings as more complex construction techniques will be required.	Reservoir construction higher due to regrading to meet elevation requrements. Feedermain construction same as other alternatives with the exception of Alt 5 which is higher.
Legal / Jurisdictional	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Site could support approximately 5.2 ha.	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Site could support approximately 5.1 ha.	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Site could support approximately 5.0 ha.	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Coordination with Halton District School Board and farm land owner will be required for acquisition of land. Site could support approximately 4.1 ha.	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Site could support approximately 6.7 ha.	Need land supply to meet phased expansion needs. Property acquisition approximately 5 ha required. Site could support 5.3 ha.
Overall Score	**Moderate**	**Low**	**High**	**Moderate**	**Low**	**Low**

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	5061
Prepared/Updated By:	AECOM		

Project Description:

30 ML Reservoir, near Trafalgar Road and No.5 Siderd (Zone M4). Site also encompasses projects IPFS # 6696 (Zone 5 BPS), IPFS # 6693 (Zone 6 BPS), and IPFS # 6697 (Zone 4 Reservoir Expansion).

Scope of Work:

New 30 ML Zone 4 Reservoir required to meet storage requirements for Milton Zone 4 and supplement Oakville Zone 4 needs. The site will also include future Zone 4 reservoir expansion and Zone 5 and Zone 6 pumping stations. Zone 5 BPS will supplement Halton Hills Highway 401 booster Employment corridor and Milton Zone 5. The Zone 6 BPS is required to service the new lake based Georgetown Service Area.

Project Justification:

Watermain distribution network upgrade required to provide fire demands, balancing and emergency supply for servicing growth areas in Zone 4 Milton and Zone 4 North Oakville.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

- Schedule B requirements were satisfied through the 2008 Water and Wastewater Master Plan, further site refinement and evaluation has been satisfied under the Sustainable Halton Master Plan

Triggers Affecting Project Need:

Projected growth in Milton and North Oakville.

Project Timing:

In Service:	2016	Design:	2012
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

Land acquisition required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2008)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	Site outside CH Reg Limit
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6693
Prepared/Updated By:	AECOM		

Project Description:

20 ML/d Zone G6L pumping station at Zone 4 Reservoir

Scope of Work:

The new Zone 6 booster pumping station constructed at the new Zone 4 reservoir site (Project #5061). Site evaluation undertaken as group under Project# 5061. Pumping station structure to be constructed to also house future Zone 5 pumps.

Project Justification:

Watermain distribution network upgrade required to service future growth areas in the south of Georgetown (Zone G6L). This project will boost flow north to the new Georgetown lakebased service area via project # 6606 and 6607.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Georgetown

Project Timing:

In Service:	2020	Design:	2017
Class EA:	B	Construction:	2018

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

Land acquisition included in Project #5061, New 30 ML Zone 4 Reservoir, near Trafalgar Road and No.5 Sideroad

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6696
Prepared/Updated By:	AECOM		

Project Description:

20 ML/d Zone M5L pumping station at Zone M4L Reservoir

Scope of Work:

The new 20 ML/d Zone 5 pumping station, at the new Zone 4 Reservoir site (project #5061). Project includes installation of Zone 5 pumps, pumping station structure built earlier with G6L pumping station. Site evaluation undertaken as one site under project 5061. Land acquired to cover Zone 4 reservoir, future reservoir expansion, Zone 5 and Zone 6 pumping stations.

Project Justification:

Watermain distribution network upgrade is required to supplement future growth areas in Hwy 401 Employment Corridor and north east Milton (Zone M5L). Pumping station will also provide security of supply to the Milton Zone 5 Service Area.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Hwy 401 Employment Corridor and north east Milton.

Project Timing:

In Service:	2024	Design:	2021
Class EA:	B	Construction:	2022

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

Land acquired under project # 5061, New 30 ML Zone 4 Reservoir

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6697
Prepared/Updated By:	AECOM		

Project Description:

20 ML storage expansion at Zone M4 Resevoir

Scope of Work:

The expansion of the future Zone 4 Storage by 20 ML, to be installed as part of the water distribution network upgrade. It is required to supplement the future growth areas in the south of Milton (Zone M4L)

Project Justification:

The new storage is to be installed as part of the water distribution network upgrade, it is required to service a future growth areas in Zone M4 (south Milton).

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule A Pre-approved Project

Triggers Affecting Project Need:

Projected population growth south of Milton.

Project Timing:

In Service:	2023	Design:	2020
Class EA:	A	Construction:	2021

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

Land previously acquired under project 5061, New 30 ML Zone 4 Reservoir, near Trafalgar Road and No.5 Siderd

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources		X	
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Circulation:	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6367

Project Description: 120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Alternatives Evaluation Table
4. Preferred Solution on Map
5. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6367
Prepared/Updated By:	AECOM		

Project Name/Description:

New 120 ML/d Burloak Zone B2 Pumping Station, Phase 1, 50 ML/d (Zone 2 B2)

Project Need:

Watermain distribution network upgrade required to service future growth area. This facility is required to meet the servicing needs for the 2031 service areas. This facility is also critical for the long term mature state strategy for post 2031 growth. The facility will be constructed to support the ultimate capacity. This project will be constructed in order to pump water from the Zone 1 system to Zone B2.

The purpose of this station is to:
1. Provide security of supply and growth capacity in Zone B2
2. Provide security of supply and growth capacity in Zone O2
3. Augment supply to the Appleby Reservoir at which point it will be pumped to Zones B3 and O3 (West to East transfer from Burlington to Oakville along Dundas Street)

Evaluation:

Project was previously satisfied under the 2008 Master Plan. Further site refinement was undertaken under the Sustainable Halton 2011 Master Plan. Alternative sites for the Pumping Station were evaluated based on the proximity to existing trunk infrastructure, existing land use, size of available land, and ease of land acquisition.

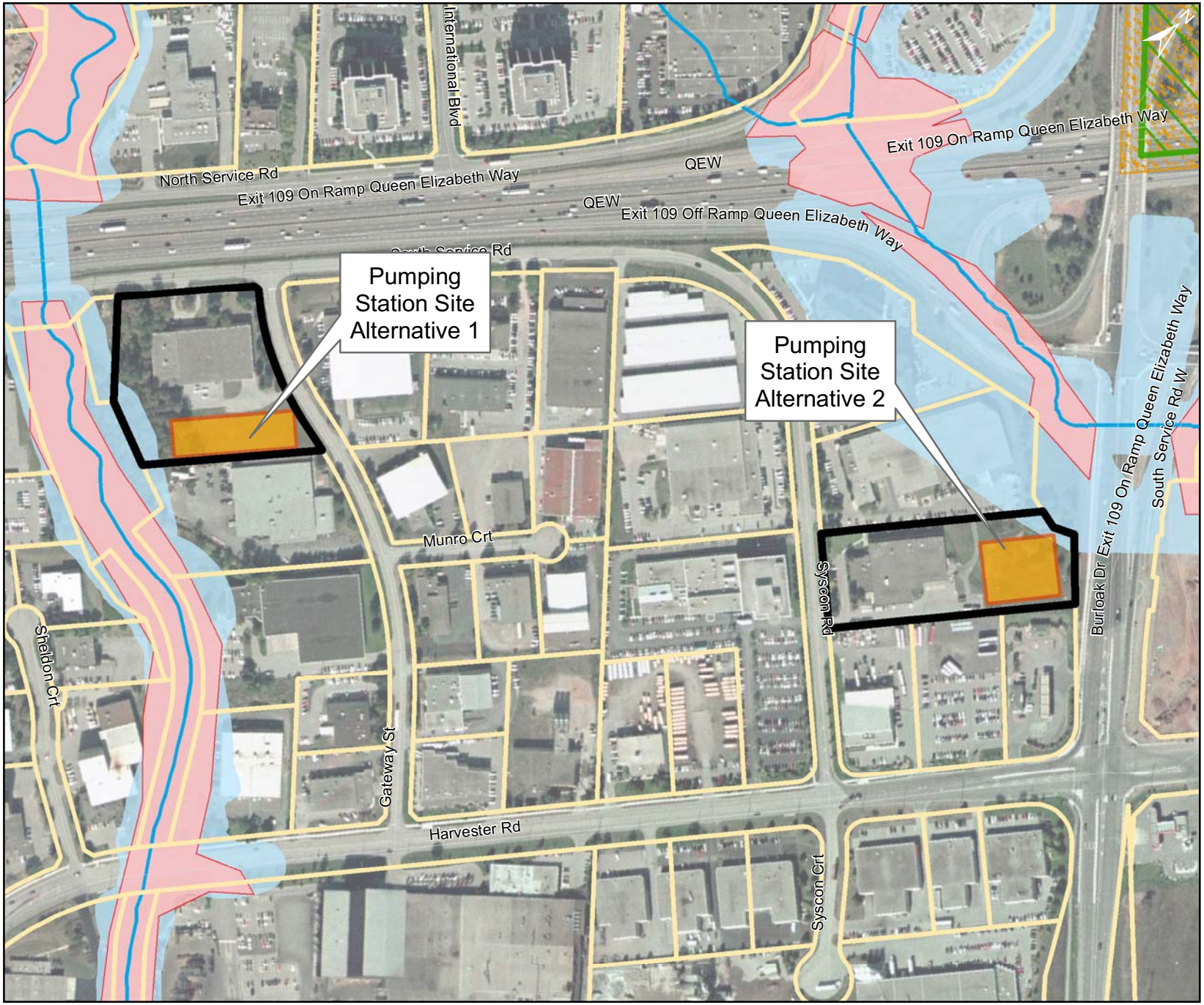
Special Consideration and MNR Screening:

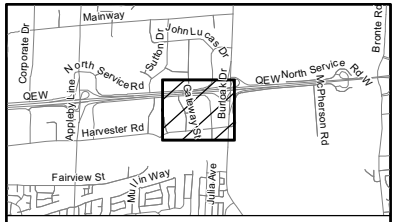
There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site is not within any environmental designated lands.
- Cultural/Heritage: Site is within General Employment lands and is not within any cultural/heritage designated lands.
- Transport: Not applicable.
- Bridge Crossing: Not applicable.
- Long Term Servicing: Site could accomodate future expansion
- MNR Screening: Not applicable (no identified endangered species on site).

Selection of Preferred Servicing Alternative:

Two (2) alternative sites for the pumping station were evaluated as follows:
- Alternative 1 – Site located on the west side of Gateway Street, north of Harvester Road and south of South Service Road in Burlington.
- Alternative 2 – Site located west of Burloak Drive, north of Harvester Road and south of the QEW.

Alternative 2 was selected as the preferred site, just west of Burloak Drive and south of the QEW. The site is not an within an environmentally sensitive area. Acquisition of property will require existing land parcel to be severed. This site is in closer proximity to existing feedermain on Burloak Drive.





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Future Feedermain (SH MP Projects)
- Property Limit
- Proposed Pumping Station Site
- Parcel Fabric

Environmental Features
- Greenbelt
- ESA
- ANSI
- Greenland - A
- Greenland - B
- Regional Wetlands
- Provincial Wetlands
- Escarpment Natural Area
- Escarpment Rural Area
- Escarpment Protected Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 35 70 140 Meters

Halton Region
Sustainable Halton

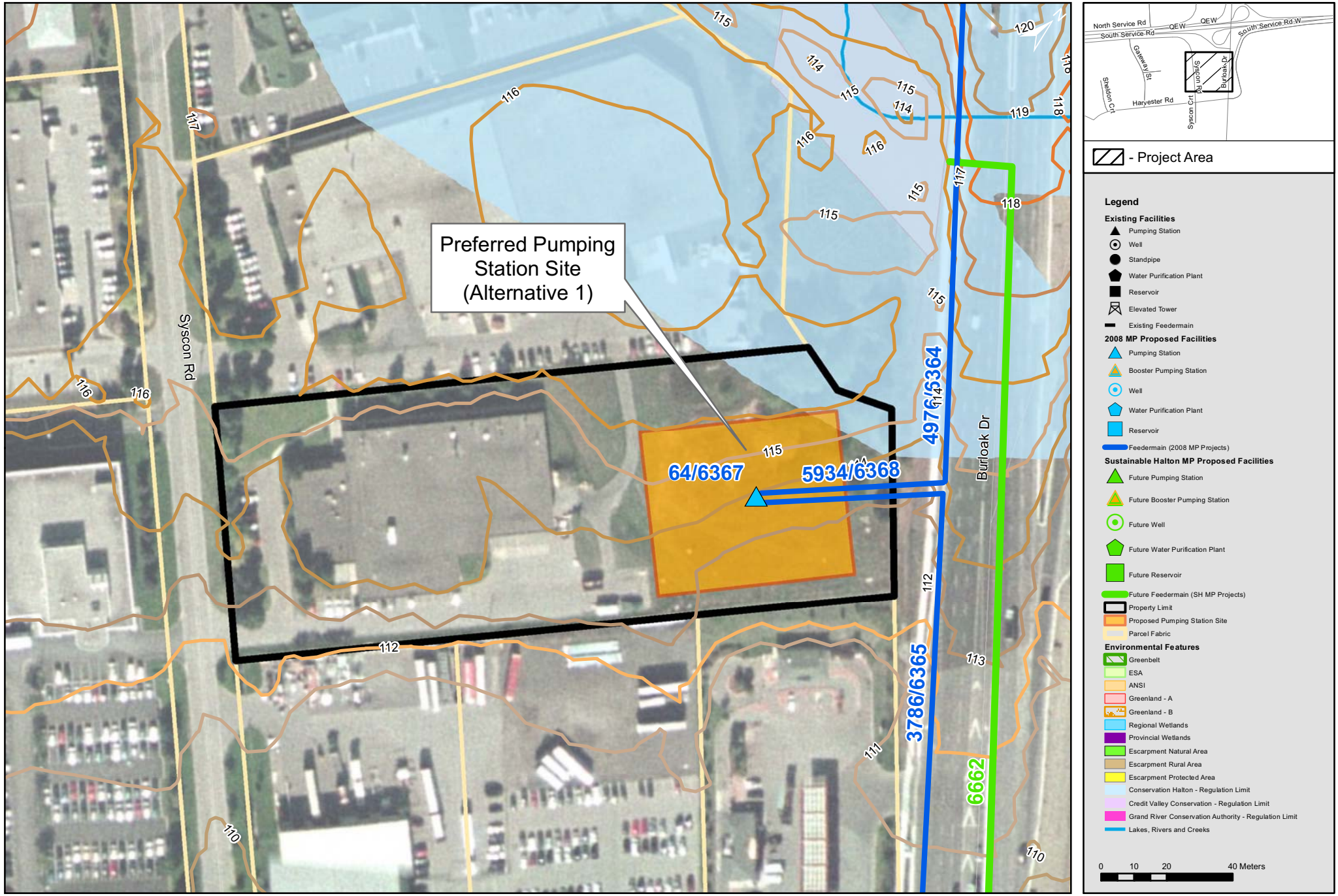
Project 64/6367 - Water Servicing
Alternative Burloak (B-2) Pumping Station Site

AECOM

Sep 29, 2011
1:4,500
60114062-395-W

Project No. 6367 - Burloak Pumping Station

Project No. 6367 - Burloak (Zone 2) Pumping Station		
Alternatives	**Alternative 1**	**Alternative 2**
Description	Construction of 120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2). Site is located on the west side of Gateway Street, north of Harvester Road and south of South Service Road in Burlington.	Construction of 120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2). Site is located west of Burloak Drive, north of Harvester Road and south of the QEW.
Environmental	Site is currently within Business Corridor designated lands. Site is adjacent to Business Corridor and General Employment designated lands. Site is adjacent to Conservation Halton Regulation Limit and Greenland-A designated lands. Existing parcel borders a tributary of Sheldon Creek (permanent). Site is adjacent to environmentally sensitive/significant areas.	Site is currently within General Employment designated lands. Site is adjacent to Business Corridor and General Employment designated lands. Site is adjacent to Conservation Halton Regulation Limit. No watercourses on site.
Technical	No access issues identified. Potential for conflict with utilities, as construction within existing urban area.	No access issues identified. Potential for conflict with utilities, as construction within existing urban area. Closer connection to existing feedermain.
Socio / Cultural	Potential traffic disruptions/disturbance along Gateway Street during construction. Site is adjacent to Employment designated lands. Potential adverse impacts to nearby landowners/businesses. Construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust and pollution will be controlled through construction contract obligations.	Potential for traffic disruptions/disturbance along Burloak Drive (major road) during construction. Site is adjacent to Employment designated lands. Potential adverse impacts to nearby landowners/businesses. Construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.
Financial	Site further away from the watermain alignment increased cost over alternative 2	Site closer to the watermain alignment lower cost over alternative 2
Legal / Jurisdictional	Land acquisition required. Approximately 0.3 ha available on property. Land parcel would have to be severed, as there is an existing building on the property. Implementation risk due to limited property availability.	Land acquisition required. Approximately 0.3 ha available on property. Land parcel would have to be severed, as there is an existing building on the property. Implementation risk due to limited property availability. Anticipated that land acquisition will be possible.
Overall Score	**Moderate**	**High**



Halton REGION
Sustainable Halton

Project 64/6367 - Water Servicing
Preferred Burloak (B-2) Pumping Station Site

AECOM

Sep 29, 2011
1:1,500
60114062-386-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6367
Prepared/Updated By:	AECOM		

Project Description:

120 ML/d Burloak Pumping Station Construction, Phase 1, 50 MLD (Zone B2)

Scope of Work:

120 ML/d Burloak Pumping Station (Zone 2). (1157 l/s). The station will be constructed to house future 120 ML/d pumping capacity with Phase 1 installation set at 50 ML/d.

Project Justification:

Watermain distribution network upgrade required to service future growth area. This facility is required to meet the servicing needs for the 2031 service areas. This facility is also critical for the long term mature state strategy for post 2031 growth. The facility will be constructed to support the ultimate capacity. This project will be constructed in order to pump water from the Zone 1 system to Zone B2.

The purpose of this station is to:
1. Provide security of supply and growth capacity in Zone B2
2. Provide security of supply and growth capacity in Zone O2
3. Augment supply to the Appleby Reservoir at which point it will be pumped to Zones B3 and O3 (West to East transfer from Burlington to Oakville along Dundas Street)

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B satisfied under 2008 MP further site refinement undertaken under SH 2011 MP

Triggers Affecting Project Need:

Projected growth in Oakville, Milton, and Georgetown.

Project Timing:

In Service:	2018	Design:	2013
Class EA:	B	Construction:	2016

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

This project has an oversizing portion cost. This facility is required to meet the servicing needs for the 2031 service areas. This facility is also critical for the long term mature state strategy for post 2031 growth. The facility will be constructed to support the ultimate capacity. However, 50 MLD of the 120 MLD future capacity will be installed within the 2031 period.

Property Requirements:

Site acquisition required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	2008 MP (Site refinement through SH 2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6601/6670

Project Description: Beaufort Reservoir and Pumping Station Expansion (Zone B4)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6601, 6670
Prepared/Updated By:	AECOM		

Project Name/Description:

Beaufort (Zone B4) Reservoir and (Zone B5) Pumping Station expansion in Burlington.

Project Need:

The expansion to the existing Beaufort (Zone B4) Reservoir and (Zone B5) Pumping Station is required to meet operational requirements in Burlington. The addition of a new cell would add 2.5 ML of storage capacity and is intended to improve the security of supply. A new site is required since the existing site cannot accomodate an expansion.

Evaluation:

Alternative sites for the Reservoir and Pumping Station were evaluated based on the proximity to the existing site, technical suitability, and existing land use.

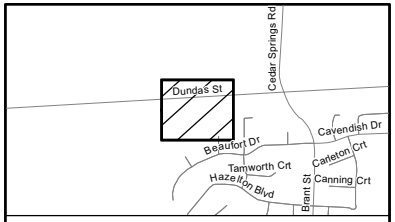
Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Reservoir expansion sites are within or adjacent designated lands and within the Greenbelt.
• Cultural/Heritage: No significant cultural/heritage impacts anticipated.
• Transport: N/A.
• Bridge Crossing: N/A.
• Long Term Servicing: N/A (trigger is operational).

Selection of Preferred Servicing Alternative:

Three (3) alternative storage sites were evaluated as follows:
• Alternative 1 – Offsite, adjacent to a existing site, house currently on potential site
• Alternative 2 – Offsite, adjacent to City-owned lands and residential area
• Alternative 3 – Offsite, within city-owned lands off Dundas Street.

Alternative 1 was selected as the preferred site for the future Zone 4 Reservoir and Pumping Station expansion. The preferred site is located outside and adjacent to the existing site. The project has been classified as Schedule “B” because it is considered an expansion to an existing facility and it requires the acquisition of new land. Project will require early consultation with NEC and approval of NEC Development Permit for expansion of existing use.



- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Property Limit
- Parcel Fabric

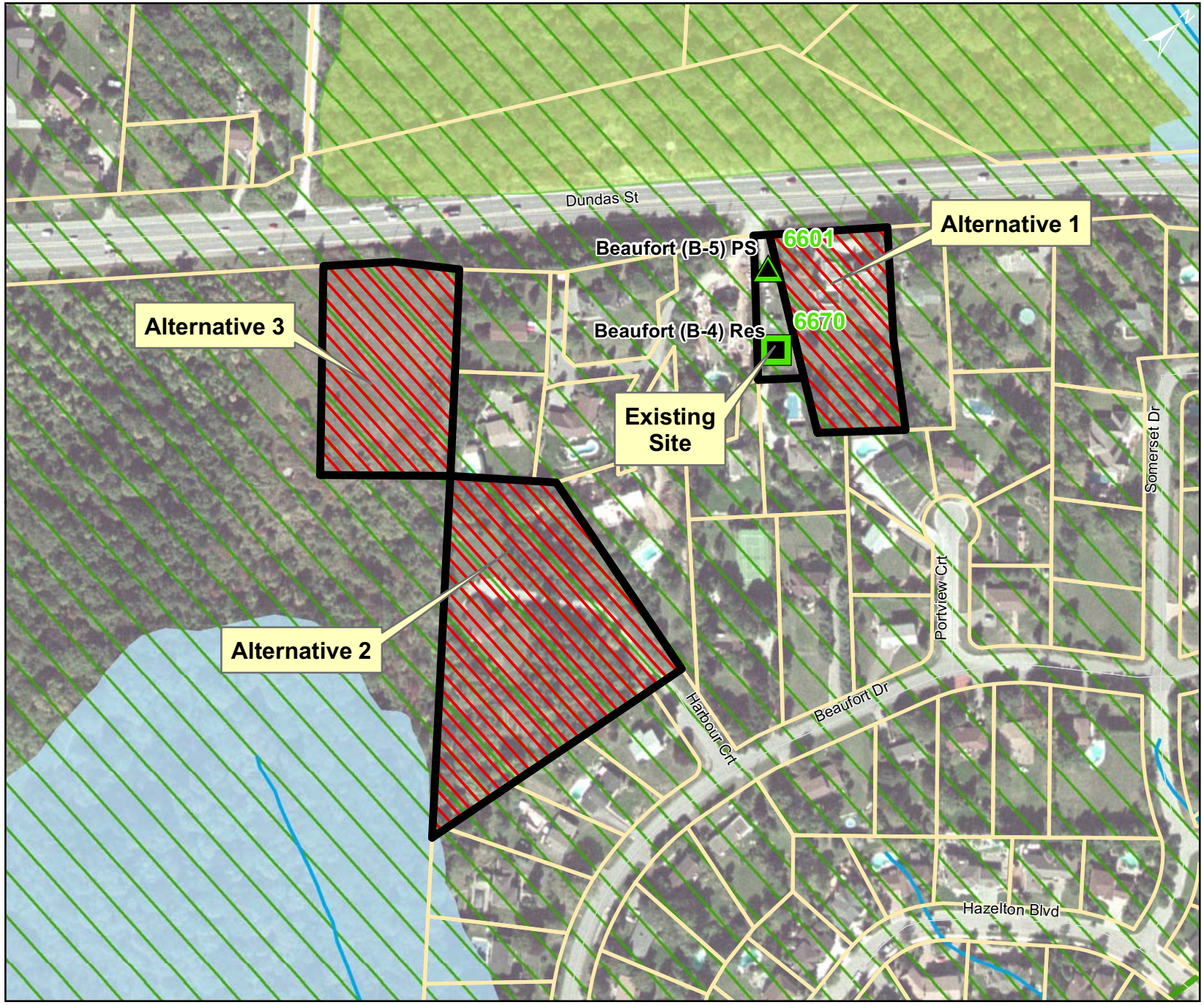
0 12.5 25 50 Meters

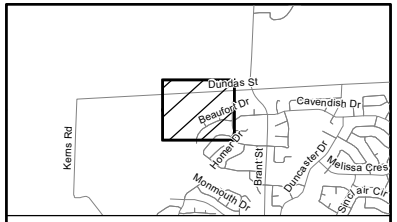
Halton Region
Sustainable Halton

Project 6670/6601 - Water Servicing
Existing Beaufort Zone 4 Reservoir and Zone 5 Booster Pumping Station

AECOM

03 Oct 2011
1:1,500
60114062-243-W





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Property Limit
- Potential Future Site
- Parcel Fabric

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 25 50 100 Meters

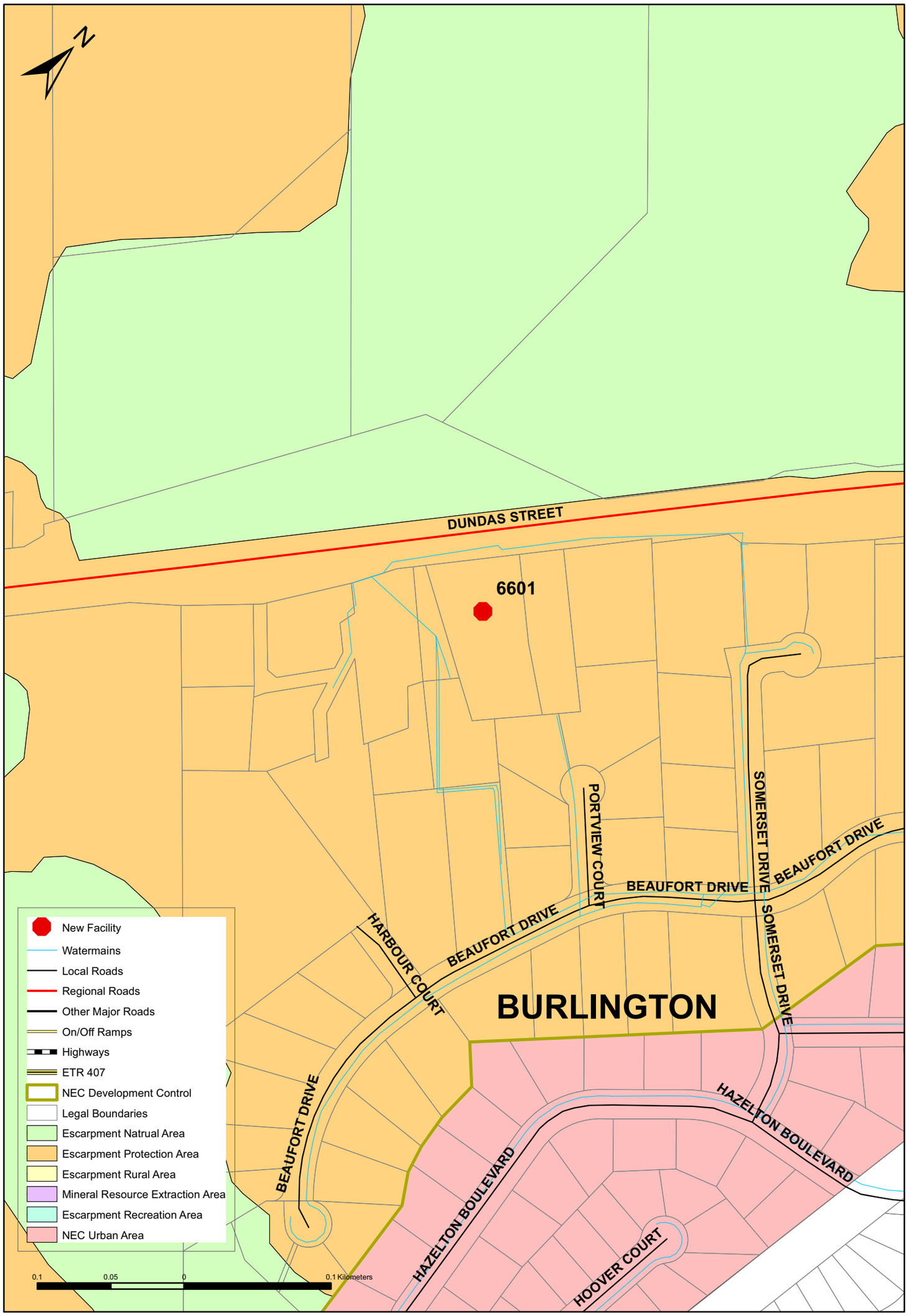
Halton Region
Sustainable Halton

Project 6670 - Water Servicing
Alternative Beaufort Zone 4 Reservoir and Zone 5 BPS Expansion Sites

AECOM

28 Sep 2011
1:3,000
60114062-396-W

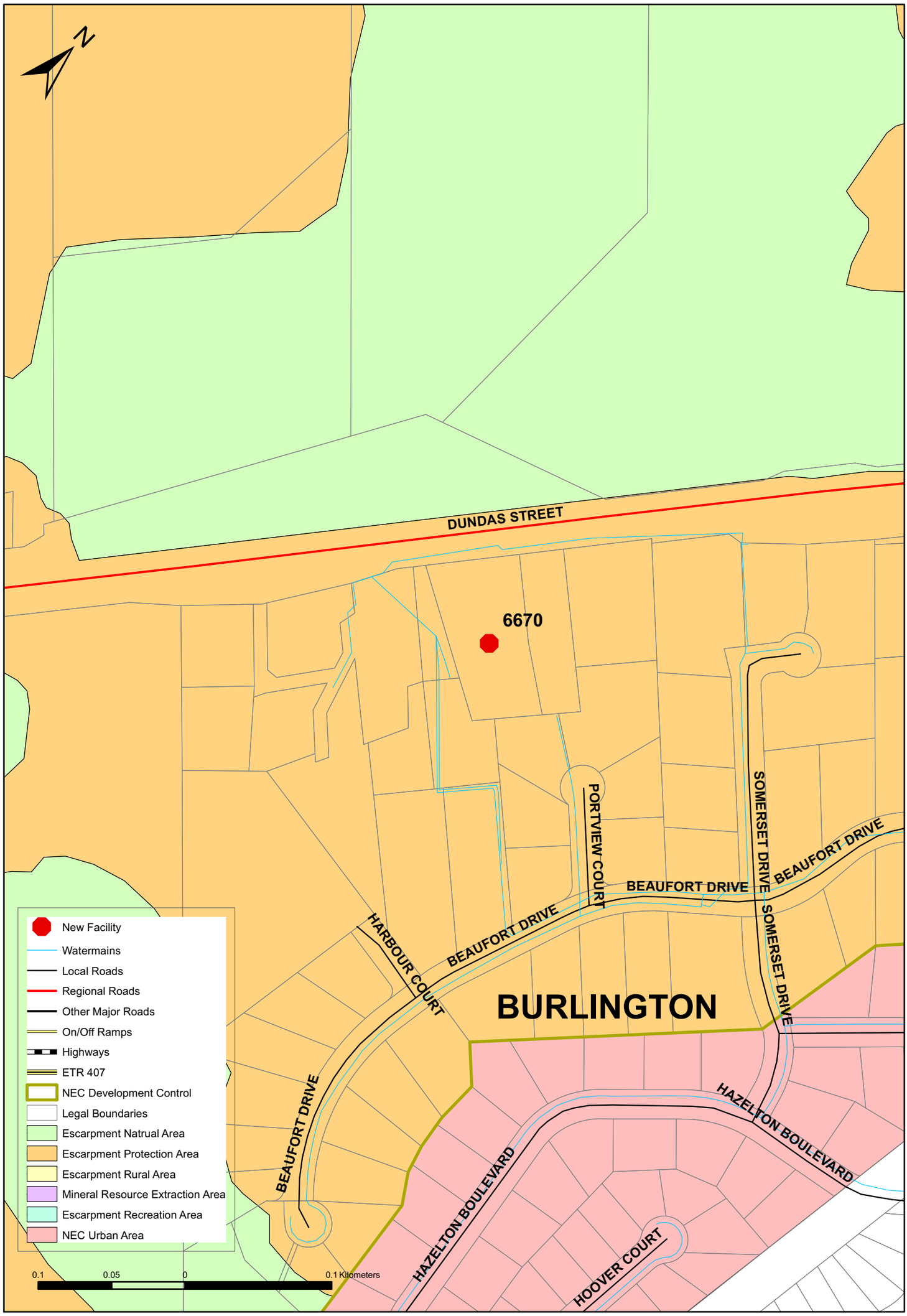
Niagara Escarpment Commission Mapping
Water Projects



ID 6601: 7.8 ML/d Expansion at Beaufort Pumping Station (new site)

Sustainable Halton Master Plan 2011

Niagara Escarpment Commission Mapping
Water Projects



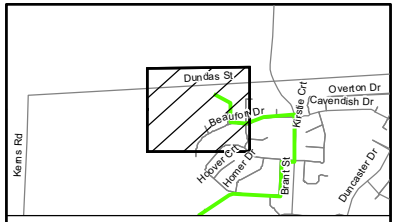
Halton REGION

ID 6670: 2.5 ML Storage Expansion at Beaufort Reservoir (new site)

Sustainable Halton Master Plan 2011

Project No. 6601/6670 - Beaufort PS & Reservoir Expansion

Project No. 6670 - Beaufort Pumping Station and Reservoir expansion, new cell to be added (2.5 ML)			
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	Beaufort Reservoir expansion, additional cell to be added on property located at 1322 Dundas St, adjacent to existing reservoir site	Beaufort Reservoir expansion, additional cell to be added on property located at 1311 Harbour Crt., southwest of existing site	Beaufort Reservoir expansion, additional cell to be added on property located at 1200 Dundas St, west of existing site
Environmental	Site is located on residential land within NEC Protected lands	Site is located on residential land within NEC Protected lands	Site is located on residential land within NEC Protected lands Site is located on a portion of open space, while the rest of the parcel is currently comprised of green space
Technical	Approximate ground level: 233 m Will provide firm capacity, fire supply, and system redundancy Optimum ground elevation for constructability and operational efficiency High potential for conflict with utilities Site is currently vacant with easy access off Dundas Street Closest proximity to existing reservoir	Approximate ground level: 233 m Will provide firm capacity, fire supply, and system redundancy Optimum ground elevation for constructability and operational efficiency Some potential for conflict with utilities	Approximate ground level: 252 - 257 m Will provide firm capacity, fire supply, and system redundancy Higher ground elevation than required Low potential for conflict with utilities
Socio / Cultural	Reservoir expansion located on NEC Protected lands, within a residential area Heritage property located adjacent to potential site Property at 1312 Dundas St along Dundas has been indentified and listed in Burlington's Heritage Resource Inventory Additional mitigative actions will be taken to ensure the protection of Heritage Resource properties identified along the construction route Potential for moderate impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for minimal traffic disruptions / disturbance expected along Dundas St during construction	Reservoir expansion located on NEC Protected lands, within a residential area Heritage property located adjacent to potential site Property at 1312 Dundas St along Dundas has been indentified and listed in Burlington's Heritage Resource Inventory Additional mitigative actions will be taken to ensure the protection of Heritage Resource properties identified along the construction route Potential for moderate impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for minimal traffic disruptions / disturbance expected along Dundas St during construction	Currently open space wtihin NEC Protected area Heritage property located adjacent to potential site Property at 1245 Dundas St has been indentified and listed in Burlington's Heritage Resource Inventory Additional mitigative actions will be taken to ensure the protection of Heritage Resource properties identified along the construction route Potential for moderate impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for minimal traffic disruptions / disturbance expected along Dundas St during construction
Financial	Lowest Cost due to proximity to existing site	Estimated cost: $6.7 million	Estimated cost: $6.7 million
Legal / Jurisdictional	Land acquisition required for residential property adjacent to existing site located at 1322 Dundas St Approvals/ permits required by: Niagara Escarpment Commission Potential implementation risk due to land acquisition issues	Land acquisition required for residential property located at 1312 Dundas St Approvals required by: Niagara Escarpment Commission Potential implementation risk due to land acquisition issues	Land acquisition required for part of parcel located at 1200 Dundas St (currently owned by City of Burlington) Approvals required by: Niagara Escarpment Commission Potential implementation risk due to land acquisition issues
Overall Score	**High**	**Moderate**	**Low**



- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Lakes Rivers and Creeks
- ANSI
- ESA
- Greenbelt
- Greenland
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area

40 20 0 40 Meters

Halton Region
Sustainable Halton

Project 6670 - Water Servicing
Preferred Beaufort (Zone B4)
Reservoir Expansion Site

AECOM

August 2011
1:3,000
60114062-324-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	N/A
Version Number:	2	IPFS:	6601
Prepared/Updated By:	AECOM		

Project Description:

7.8 ML/d expansion at Beaufort Pumping Station (new site) (Zone B5)

Scope of Work:

7.8 ML/d expansion at Beaufort Pumping Station (Zone B5). Existing station and site are constrained. Following on alternative sites evaluation a preferred site adjacent to the existing site has been chosen to enable expansion. The new pump station is to provide firm capacity for max hour demands (Zone B5) as well as 90L/s fire flows.

Project Justification:

Pump station to be installed as part of the water distribution network upgrade, it is required to service existing service area and future infill growth areas in the north of Burlington (Zone B5). The existing Zone B5 Pump Station is incapable of providing 90 L/s firm capacity fire demand.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

There are currently operational and site constraints at the existing pumping station. This project is required to alleviate these constraints and support continued supply to customers. Service area will also experience new infill growth which this project will support.

Project Timing:

In Service:	2016	Design:	2013
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

There is a benefit to existing portion cost. There are currently operational constraints and site constraints at the existing pumping station. This project is required to alleviate these constraints and support continued supply to existing customers and support future demands. Demand percentage based on existing Burlington service area.

Property Requirements:

Additional Land Required - Cost included in new reservoir site (Project # 6670)

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Req consultation with NEC/ NEC Development Permit. Expansion of existing use. Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	N/A
Version Number:	2	IPFS:	6670
Prepared/Updated By:	AECOM		

Project Description:

2.5 ML storage expansion at Beaufort Reservoir Expansion (new site) (Zone B4)

Scope of Work:

Beaufort Reservoir Expansion with a new 2.5 ML/d cell to be added. Existing reservoir and pumping station site is constrained. Following on alternatives site evaluation, a preferred site adjacent to the existing site has been chosen to enable expansion.

Project Justification:

The new storage is to be installed as part of the water distribution network upgrade at the Beaufort Reservoir Expansion. It is required to service a future growth areas in the north of Burlington (Zone B5 and Zone B4). There is currently only one cell, second cell required to provide security of supply and operational flexibility to meet existing demand. Project is required to provide additional storage for existing service area and support infill growth in north Burlington (Zone B5 and Zone B4).

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Existing constraint and infill growth

Project Timing:

In Service:	2016	Design:	2013
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

There is a benefit to existing portion cost. There is currently only one cell, a second cell is required to provide security of supply and operational flexibility to meet existing demand. This project is required to provide additional storage to support servicing to existing users as well as to support future demands. Demand percentage based on Burlington service area.

Property Requirements:

Land acquisition required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Req consultation with NEC/ NEC Development Permit. Expansion of existing use. Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)

Sustainable Halton Capital Program

IPFS ID: 6606/6607/6654/6655/6608

Project Description: 750 mm WWM on Trafalgar Road north (Zone G6L)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
4. Alternatives Evaluation Table
5. Preferred Solution on Map
6. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	5-Aug-11	Project Number:	Overview
Version Number:	1	IPFS:	6606, 6607, 6654, 6608
Prepared/Updated By:	AECOM		

Project Name/Description:

New 750 mm Zone G6L feedermain to Georgetown.

Project Need:

The Zone G6L feedermain is required to meet future growth demands in the new lake-based Georgetown service area. Groundwater supply is constrained with insufficient supply to meet Georgetown growth which triggers the need for a lake-based service area

Evaluation:

Consideration of TMP projects was also undertaken to take advantage of construction synergies, therefore alternatives that followed existing or future planned road were considered more favourable. Alignments with the least number of environmental crossing were also considered more favourable. Alternative alignments were also evaluated based on minimizing crossings, optimizing transmission capacity, and minimizing capital and O&M costs.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignment minimizes the number of environmental designated area crossings.
• Cultural/Heritage: No significant impacts anticipated.
• Transport: Alignment follows and is contingent on the planned road widening proposed in the Transportation Master Plan. Timing of construction will be coordinated with planned road work.
• Bridge Crossing: No bridge crossings are involved.
• Long Term Servicing: Alignment is strategically located.

Selection of Preferred Servicing Alternative:

Three (3) alternative feedermain alignments were considered as follows:
• Alternative 1 – Direct route northwesterly along **Hwy 7 / Trafalgar Rd** to future Zone G6L storage facility.
• Alternative 2 – Northeasterly along No. 5 Sideroad to **Eighth Line**, northwesterly along Eighth Line to south of No. 15 Sideroad, southwesterly along No. 15 Sideroad, connecting northwesterly along Hwy 7 / Trafalgar Rd to future Zone G6L storage facility.
• Alternative 3 – Northeasterly along No. 5 Sideroad to **Ninth Line**, northwesterly along Ninth Line to No. 10 Sideroad, southwesterly along No. 10 Sideroad to Eighth Line, northwesterly along Eighth Line to south of No. 15 Sideroad, southwesterly along No. 15 Sideroad, connecting northwesterly along Hwy 7 / Trafalgar Rd to future Zone G6L storage facility.

Alternative 1 was selected as the preferred alignment for the future Zone G6L Feedermain to the future Zone G6L Reservoir located at No. 22 Sideroad and Highway 7 in Georgetown. This alignment is the most direct route, and therefore has the least head losses and is the lowest cost option. The alignment also minimizes the number of creek crossings and will be coordinated with future road widening. The project has been classified as Schedule "B" because it is considered an expansion to an existing distribution system.

22nd Sideroad Res
Lindsay Ct. PS
Moore Park PS
Lindsay Court Well
Princess Anne Well
Cedarvale Well #2
Georgetown WPP
Cedarvale Well
Cedarvale Well #4
Todd Rd Tower
Norval Standpipe
6608
6609
6655
6654
6603
6610
6611
6612
6613
6614/6615
6607
6606
6640
6642
6643
6644
6645
6647
6648
6646
6641
6689
6690
Alt 1
Alt 2
Alt 3
Fifth Line
Sixth Line
Eighth Line
Tenth Line
Ninth Line
Mountainview Rd N
Mountainview Rd S
Main St N
Main St S
Confederation St
Main St
Maple Ave
River Dr
Guelph St
Hall Rd
Adamson St N
Trafalgar Rd
Hornby Rd
Steeles Ave
Winston Churchill Blvd
Hwy 7
Hwy 401
Hwy 407
Exit Highway 401 Off Ramp Highway 407
Wildwood Rd
Prince St
No 22 Siderd
No 20 Siderd
No 17 Siderd
No 15 Siderd
No 10 Siderd
No 5 Siderd

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain
- Greenbelt
- Greenland
- Niagara Escarpment
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

Halton Region

Sustainable Halton
Water and Wastewater Master Plan

Project 6606/6607/6608/6654/6655
Georgetown Water Servicing
Zone 6 Feedermain Alignment Alternatives

AECOM

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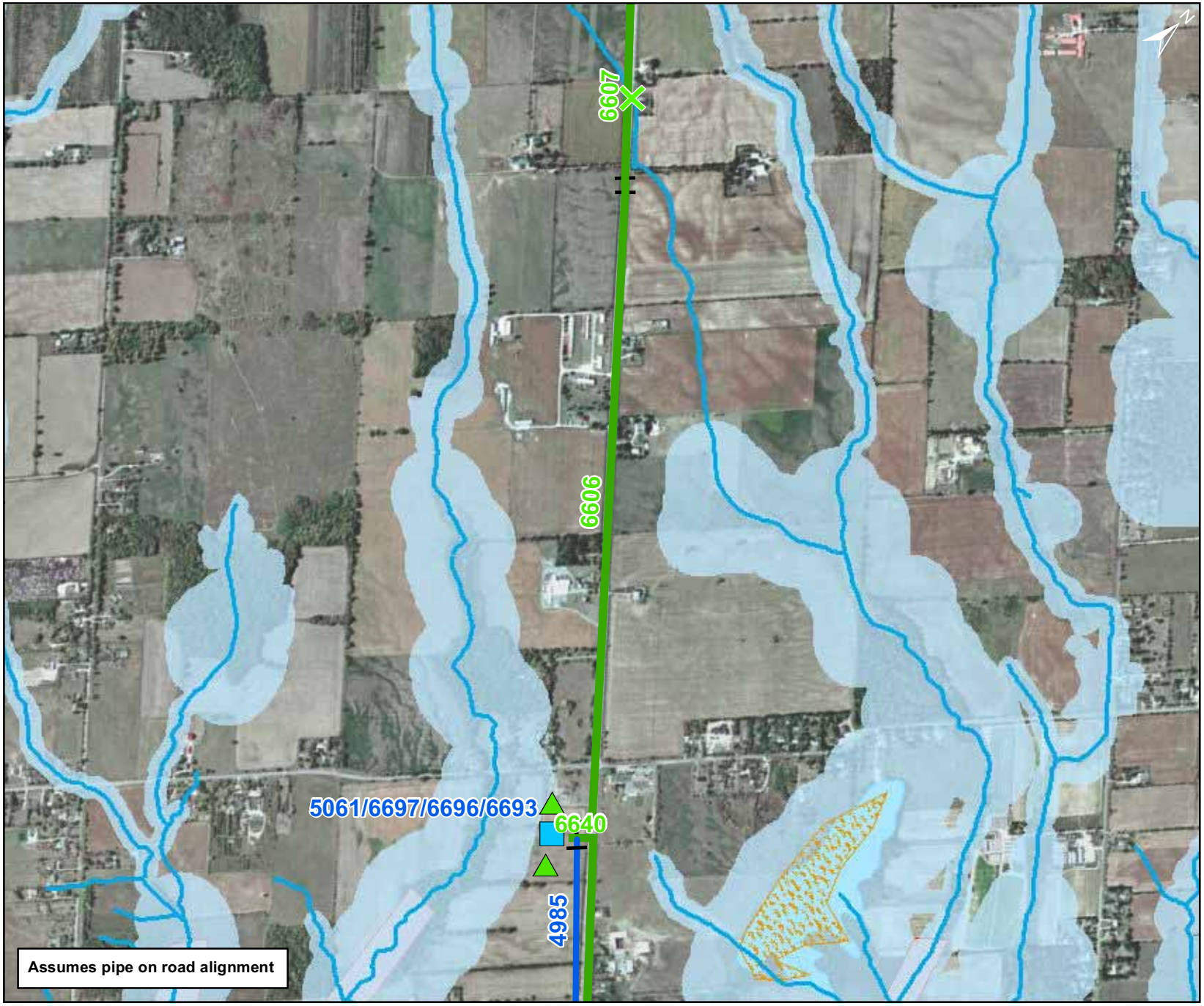
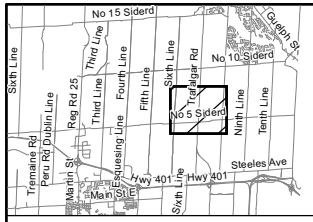
Sep 30, 2011
File: 60114062-176-W





- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

Special Engineering Difficulties (SED's)
- Envi
- MajorEnvi
- MajorRoad
- Rail
- Road
- Lakes, Rivers and Creeks

520 260 0 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6606
Preferred Zone 6 Feedermain Alignment

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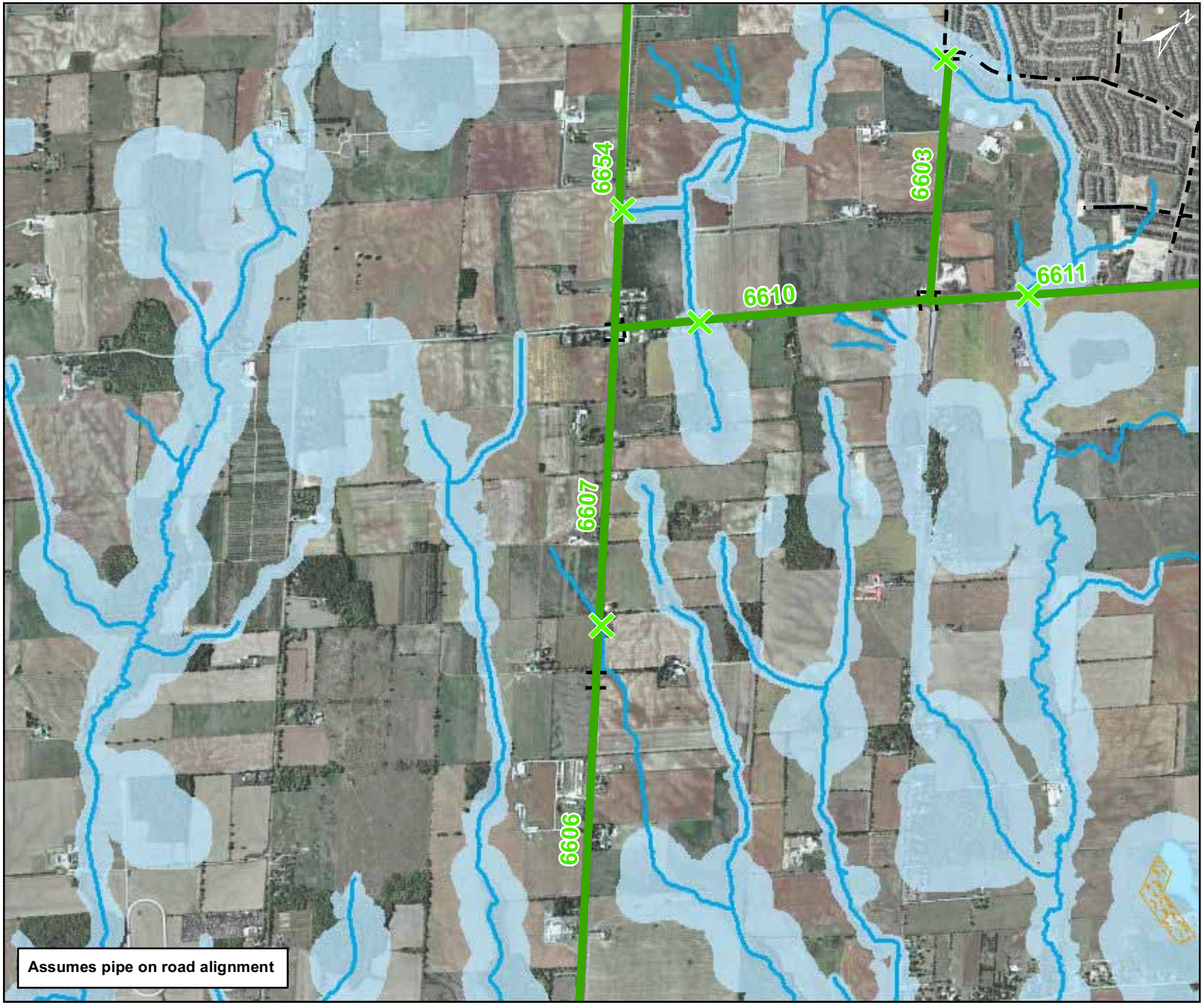
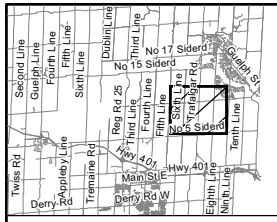




- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

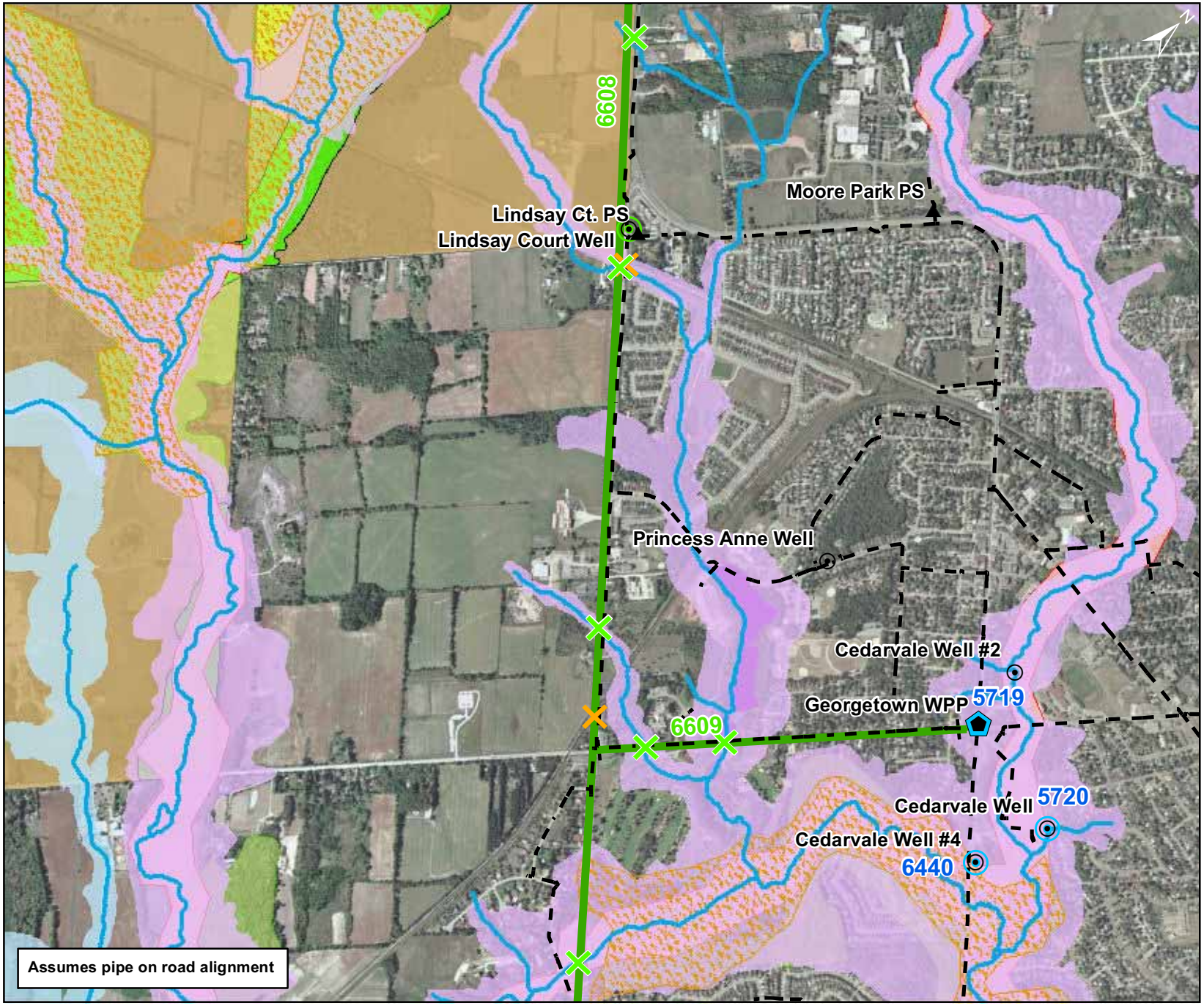
Special Engineering Difficulties (SED's)
- Envi
- MajorEnvi
- MajorRoad
- Rail
- Road
- Lakes, Rivers and Creeks

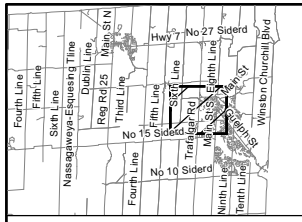
810 405 0 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6607
Preferred Zone 6 Feedermain Alignment

AECOM





- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

Special Engineering Difficulties (SED's)
- Envi
- MajorEnvi
- MajorRoad
- Rail
- Road
- Lakes, Rivers and Creeks

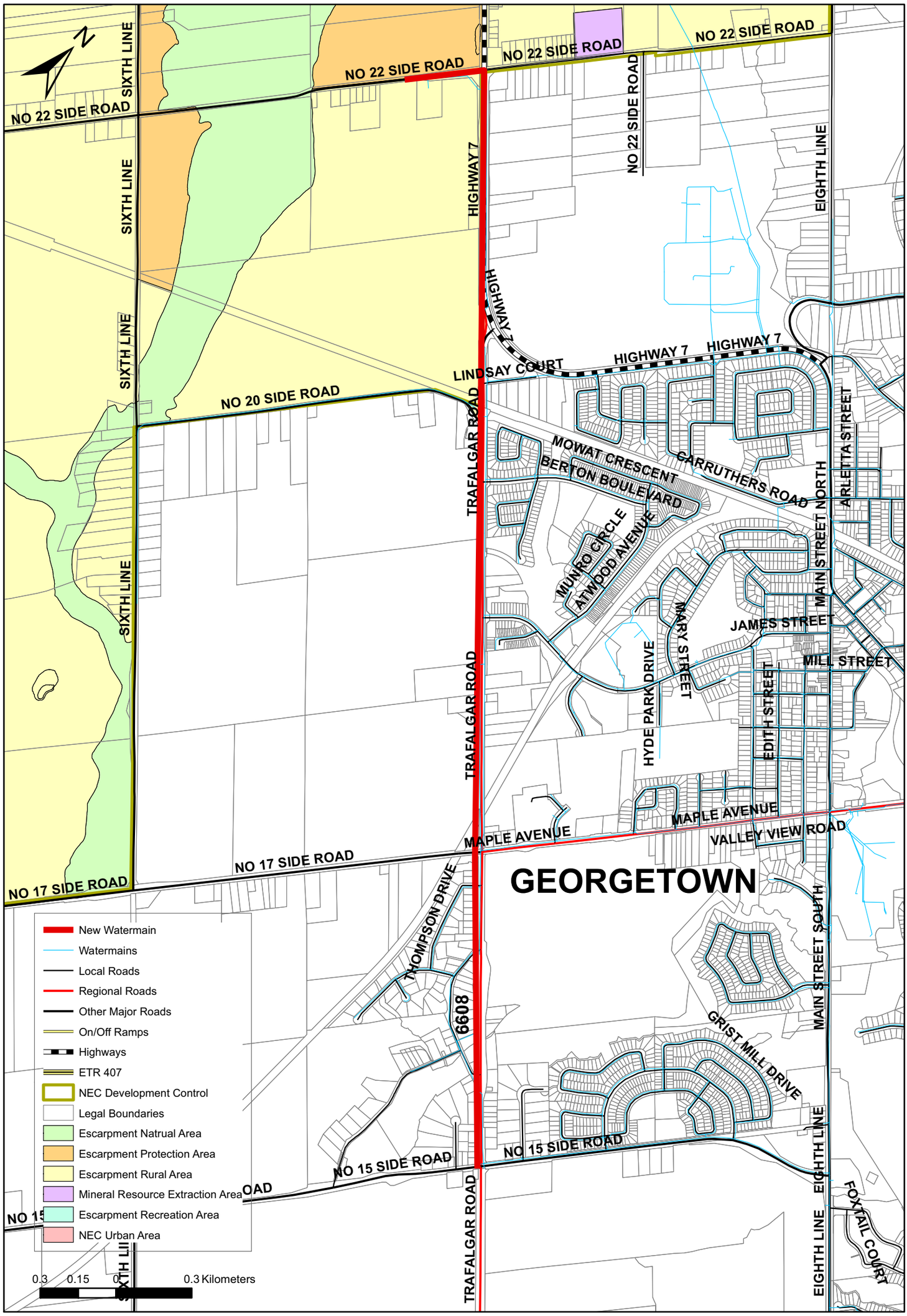
690 345 0 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6608
Preferred Zone 6 Feedermain Alignment

AECOM

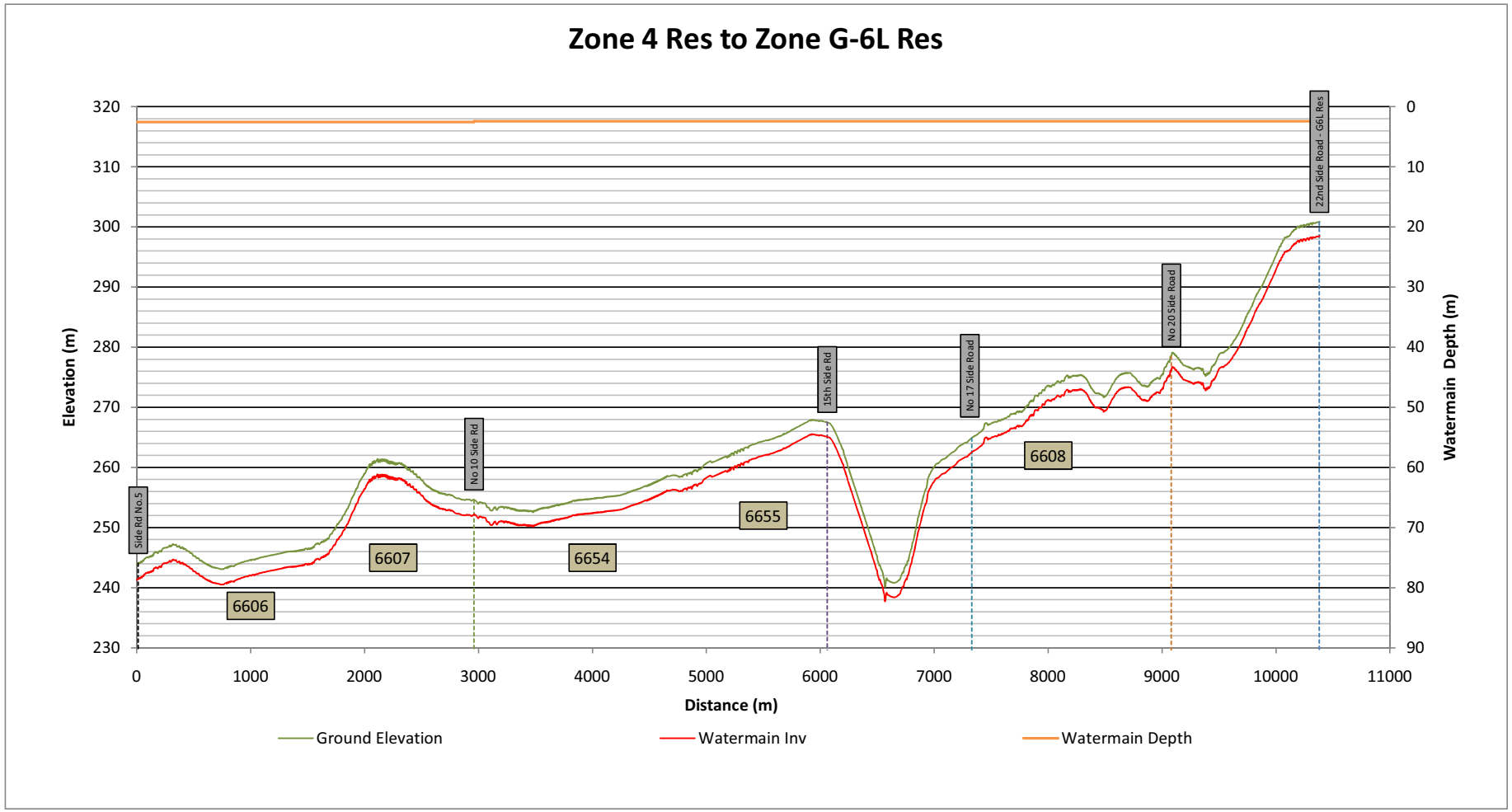
Niagara Escarpment Commission Mapping
Water Projects



ID 6608: 750mm WM on Trafalgar from 15th Side Rd to 22nd Side Rd Lake Based Reservoir

Halton REGION

Sustainable Halton Master Plan 2011


Zone 4 Res to Zone G-6L Res
Elevation (m)
Watermain Depth (m)
Distance (m)
320
310
300
290
280
270
260
250
240
230
0
10
20
30
40
50
60
70
80
90
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
Side Rd No.5
No.10 Side Rd
15th Side Rd
No.17 Side Road
No.20 Side Road
22nd Side Road - G6L Res
6606
6607
6654
6655
6608
Ground Elevation
Watermain Inv
Watermain Depth

Project No . 6606, 6607, 6654, 6655, 6608
Georgetown Feedermain to Future Zone 6 Storage Facility

Project No. 6606, 6607, 6654, 6655, 6608 Georgetown Feedermain to Future Zone 6 Storage Facility, Alternative Alignments			
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	Alignment along Trafalgar Road to future Zone 6 storage facility Direct route northwesterly to future Zone 6 storage facility (along Hwy 7 / Trafalgar Rd) South Halton system interconnection along Trafalgar Road	Alignment along 8th Line to future Zone 6 storage facility Northeasterly to Eighth Line, northwesterly along Eighth Line to south of No. 15 Sideroad, southwesterly along No. 15 Sideroad to Hwy 7 / Trafalgar Rd, and northwesterly along Hwy 7 / Trafalgar Rd to future Zone 6 storage facility South Halton system interconnection along Trafalgar Road	Alignment along 9th Line to future Zone 6 storage facility Northeasterly to Ninth Line, northwesterly along Ninth Line to No. 10 Sideroad, southwesterly along No. 10 Sideroad to Eighth Line, northwesterly along Eighth Line to south of No. 15 Sideroad, southwesterly along No. 15 Sideroad to Hwy 7 / Trafalgar Rd, and northwesterly along Hwy 7 / Trafalgar Rd to future Zone 6 storage facility South Halton system interconnection along Trafalgar Road
Environmental	Alignment minimizes number of environmental crossings Greenfield construction Adjacent to Greenbelt and Halton Natural Heritage Area lands, and Hornby Swamp Wetland Complex One (1) Middle 16 Mile Creek Crossing (permanent coldwater) Construction within existing ROW, northern section of alignment common with all three alternatives. Section of northern alignment within NEC Rural Designation but within existing ROW Lowest number of stream crossings Minimal environmental impacts are anticipated, and potential impacts to be mitigated by appropriate construction techniques	Alignment route to cross Halton Natural Heritage Area designated lands Greenfield construction Portion of alignment along No 5 Sideroad to facility is adjacent to Hornby Swamp Wetland Complex Three (3) Middle 16 Mile Creek Crossings (permanent coldwater) Construction within existing ROW, northern section of alignment common with all three alternatives. Section of northern alignment within NEC Rural Designation but within existing ROW Moderate number of stream crossings Potential for environmental impacts, potential impacts to be mitigated by appropriate construction techniques	Alignment to avoid environmentally sensitive designated areas, but is adjacent to Greenbelt and Halton Natural Heritage Area lands Greenfield construction Portion of alignment along 9th Line towards No 5 Sideroad is adjacent to East Oakville Swamp Three (3) Middle 16 Mile Creek Crossings (permanent coldwater) and one (1) East 16 Mile Creek Crossing (permanent coldwater) Construction within existing ROW, northern section of alignment common with all three alternatives. Section of northern alignment within NEC Rural Designation but within existing ROW Greatest number of stream crossings Greatest potential for environmental impacts, potential impacts to be mitigated by appropriate construction techniques
Technical	Low potential for conflict with utilities Shortest and most direct route, thereby minimizing head losses and residence time in the pipe. Feedermain is estimated to be approximately 2.93 km in length (shortest route). Creek crossings will require trenchless method of construction in order to minimize adverse environmental impacts Shortest feedermain length, with the least number of stream crossings therefore construction will be easier Optimal route for constructability and operational efficiency Phasing dependant on road reconstruction programs, ideally to be coordinated with road reconstruction, however must be in service by 2021	Low potential for conflict with utilities Medium length route. Feedermain is estimated to be approximately 4.51 km in length (over 150% longer than Alternative A). Creek crossings will require trenchless method of construction in order to minimize adverse environmental impacts Medium feedermain length, with about several creek crossings which will make construction more complex then Alternative 1	Low potential for conflict with utilities Longest route with five potential bends, therefore higher head losses and residence time in the pipe. Feedermain is estimated to be approximately 2.93 km in length (over 200% longer than Alternative A). Creek crossings will require trenchless method of construction in order to minimize adverse environmental impacts Longest feedermain length, with the highest number of creek crossings, therefore construction will be more complex than Alternative 1 and Alternative 2.
Socio / Cultural	Surrounding land is currently comprised of (Prime) Agricultural Lands Traffic disruptions and disturbance expected along Trafalgar Road during construction, although timing of construction to be coordinated with road improvements to reduce impacts. Less impact than Alternatives 2 and 3 due to shorter feedermain length and coordination with Highway improvements Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Surrounding land is currently comprised of (Prime) Agricultural Lands Potential for traffic disruptions and disturbance expected along 8th Line and No. 5 Sideroad during construction, as Trafalgar Road highway improvements happening at same time which increase traffic flow Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Surrounding land is currently comprised of (Prime) Agricultural Lands Potential for traffic disruptions and disturbance expected along 8th Line and No. 5 Sideroad during construction, as Trafalgar Road highway improvements happening at same time which increase traffic flow Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control
Financial	Shortest and most direct route to facility, less environmental crossings required - lowest feedermain construction costs	Medium length route to facility, greater number of environmental crossings required - moderate feedermain construction costs	Longest and least direct route to facility, greatest number of environmental crossings required -highest feedermain construction costs
Legal / Jurisdictional	Construction entirely along existing road right-of-way (Trafalgar Rd). Lowest number of creek crossings and Conservation Permits required	Construction entirely along existing road right-of-way (No. 5 Side Rd, Eighth Line, Trafalgar Rd). Greater number of creek crossings and Conservation Permits required	Construction entirely along existing road right-of-way (No. 5 Side Rd, Ninth Line, Trafalgar Rd). Greatest number of creek crossings and Conservation Permits required
Overall Score	**High**	**Moderate**	**Low**

22nd Sideroad Res
Lindsay Ct. PS
Moore Park PS
Lindsay Court Well
Princess Anne Well
Cedarvale Well #2
Georgetown WPP
Cedarvale Well
Cedarvale Well #4
Todd Rd Tower
Norval Standpipe
6608
6609
6655
6654
6603
6610
6611
6612
6613
6614/6615
6607
6606
6640
6642
6643
6644
6645
6646
6647
6648
6641
6689
6690
Hwy 7
Fifth Line
Sixth Line
Eighth Line
Ninth Line
Tenth Line
Confederation St
Main St
Main St N
Main St S
Wildwood Rd
Prince St
Maple Ave
River Dr
Mountainview Rd N
Mountainview Rd S
Guelph St
Hall Rd
Adamson St N
Trafalgar Rd
Hornby Rd
Steeles Ave
Hwy 401
Hwy 407
Exit Highway 401 Off Ramp Highway 407
Winston Churchill Blvd
No 22 Siderd
No 20 Siderd
No 17 Siderd
No 15 Siderd
No 10 Siderd
No 5 Siderd

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain
- Greenbelt
- Greenland
- Niagara Escarpment
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

Halton Region

Sustainable Halton
Water and Wastewater Master Plan

Project 6606/6607/6608/6654/6655
Georgetown Water Servicing
Zone 6 Feedermain Preferred Alignment

AECOM

1:40,000
Oct 03, 2011
File: 60114062-159-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6606
Prepared/Updated By:	AECOM		

Project Description:

750 mm WM on Trafalgar from the new Zone 4 Reservoir to approximately 1,650 m north (Zone G6L)

Scope of Work:

New 750 mm Zone G6L WM on Trafalgar from the new Zone 4 Reservoir to approximately 1650 m north. This project is required to convey flow northwards from the 30 ML Reservoir and Zone 6 booster pumping station, near Trafalgar Road and No.5 Siderd (Project # 5061, Zone M4) to tie in with project # 6607. Watermain to be constructed within the existing road right of way.

Project Justification:

Watermain distribution network upgrade required to service future growth area in Georgetown.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Georgetown

Project Timing:

In Service:	2021	Design:	2018
Class EA:	B	Construction:	2019

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Project is section of Zone 6 Feedermain alignment. Other sections include projects IPFS # 6607, 6654, 6655 and 6608.

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

- 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6607
Prepared/Updated By:	AECOM		

Project Description:

750 mm WM on Trafalgar Rd from 1,650 m north of Zone 4 Reservoir to No 10 Siderd (Zone G6L)

Scope of Work:

New 750 mm Zone G6L WM on Trafalgar Rd from Project 6606 to No. 10 Siderd. This project will require one (1) environmental crossing over Middle Sixteen Creek. This project is required to convey flow northwards from the 30 ML Zone 4 Reservoir and Zone 6 booster pumping station, near Trafalgar Road and No.5 Siderd. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies. Construction within existing road right of way.

Project Justification:

Watermain distribution network upgrade required to service future growth area in Georgetown.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Georgetown.

Project Timing:

In Service:	2021	Design:	2018
Class EA:	B	Construction:	2019

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Conservation Halton
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Project is section of Zone 6 Feedermain alignment. Other sections include projects IPFS # 6606, 6654, 6655 and 6608.

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 09 2011	Project Number:	N/A
Version Number:	2	IPFS:	6654
Prepared/Updated By:	AECOM		

Project Description:

750 mm WM on Trafalgar Rd from 10th Siderd to approximately 1,700 m north of 10th Siderd (Zone G6L)

Scope of Work:

The new Zone G6L 600 mm watermain will be constructed on Trafalgar from 10th Side Rd to approximately 1700 m north of 10th Side Rd. The project will require one (1) environmental crossing of an unnamed tributary of East Sixteen Mile Creek. It will tie in with project #'s 6655 and 6607. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies.

Project Justification:

Watermain distribution network upgrade required to service future growth area in the south of Georgetown.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule A+

Triggers Affecting Project Need:

Projected growth to the south of Georgetown.

Project Timing:

In Service:	2023	Design:	2021
Class EA:	A+	Construction:	2022

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Consultation Halton
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Project is section of Zone 6 Feedermain alignment. Other sections include projects IPFS # 6606, 6607, 6608 and 6655.

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

- 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	N/A
Version Number:	2	IPFS:	6655
Prepared/Updated By:	AECOM		

Project Description:

750 mm WM on Trafalgar from 1,700 m north of 10th Siderd to 15th Siderd (Zone G6L)

Scope of Work:

New 600 mm Zone M5L WM on Trafalgar from 1700 m north of Siderd to 15th Siderd (Zone G6L) to the new Georgetown Reservoir on 22nd Siderd. The project will require one (1) environmental crossing: One (1) crossing of East Sixteen Mile Creek. Watermain to be constructed within existing road right of way. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies. Alignment on 22nd Siderd within Credit Valley Designated Lands but within road right of way.

Project Justification:

Watermain distribution network upgrade required to service future growth areas in new Georgetown lakebased service area.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule A+

Triggers Affecting Project Need:

Projected growth in Georgetown.

Project Timing:

In Service:	2023	Design:	2021
Class EA:	A+	Construction:	2022

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Credit Valley Conservation
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Project is section of Zone 6 Feedermain alignment. Other sections include projects IPFS # 6606, 6607, 6608, and 6654

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6608
Prepared/Updated By:	AECOM		

Project Description:

750 mm WM on Trafalgar from 15th Siderd to 22nd Siderd Lake Based Reservoir (Zone G6L)

Scope of Work:

New 750 mm Zone G6L WM on Trafalgar from 15th Side Rd. to the new Georgetown Reservoir on 22nd Siderd. The project will require three (3) environmental crossings: One (1) crossing of Black Creek and two (2) crossings of unknown tributaries of Black Creek. WM to be constructed within existing road right of way. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies. Alignment on 22nd Siderd within NEC and Conservation Halton Rural Designated Lands but will lie within the road right of way.

Project Justification:

Watermain distribution network upgrade required to service future growth area in new Georgetown lakebased service area.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Georgetown.

Project Timing:

In Service:	2024	Design:	2021
Class EA:	B	Construction:	2022

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Req consult NEC - Alignment within NEC limits Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		CVC Permits required
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Project is section of Zone 6 Feedermain alignment. Other sections include projects IPFS # 6606, 6607, 6654 and 6655.

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6614

Project Description: 600 mm WM on Adamson St from 10th Siderd to Guelph St and on Guelph St from Adamson St to 10th Siderd (Zone G6L)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Alternatives Evaluation Table
4. Preferred Solution on Map
5. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6614
Prepared/Updated By:	AECOM		

Project Name/Description:

New 600 mm watermain on Adamson Street from 10th Sideroad to Guelph Street and on Guelph Street from Adamson Street to 10th Sideroad.

Project Need:

Watermain distribution network upgrade required to service future growth area in Georgetown. This project will convey flow eastwards from project # 6613 to tie in with project # 6615. This project will supply the Georgetown lakebased future growth area (G6L), but it will also act as a section of the potential future Peel Interregional connection, which will provide the system with an interim supply solution/redundancy for the RMOH system.

Evaluation:

Alternative alignments were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. Alternatives for the watermain crossing along No. 10 Sideroad and across the Credit River, were aligned as: i) fully along the existing road right of way, ii) partially along a future easement, and iii) fully along a future easement.

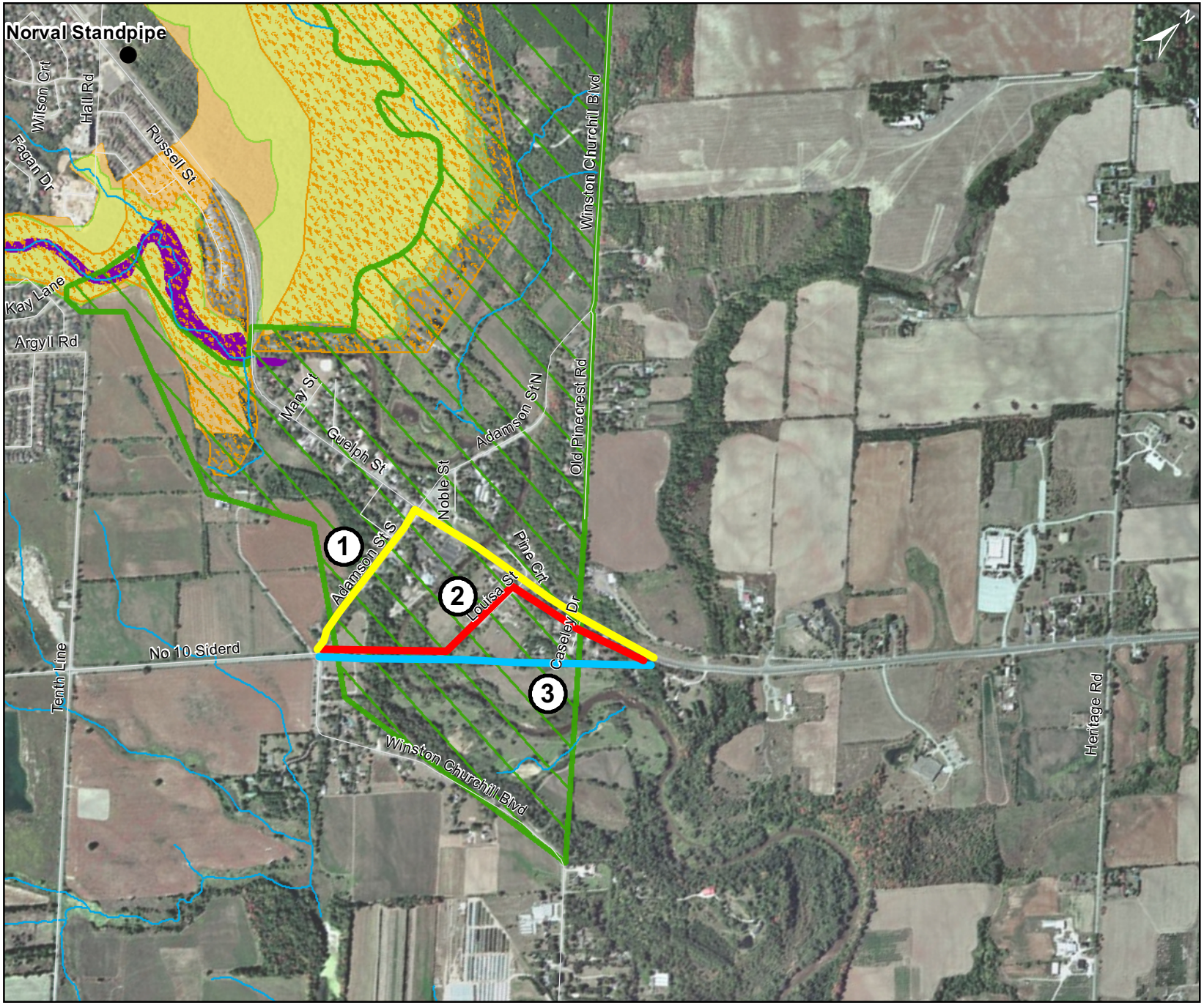
Special Consideration and MNR Screening:

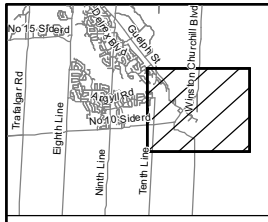
There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignment crosses lands within the Greenbelt and the Credit River with the Credit Valley Conservation Regulation Limit however minimizes crossing length.
• Cultural/Heritage: Not applicable.
• Transport: Watermain alignment coordinates with potential road proposed in the Transportation Master Plan.
• Bridge Crossing: Not applicable.
• Long Term Servicing: Not applicable.
• MNR Screening: Alignment does not cross any ESAs or ANSIs, however it is located approximately 500 m away from the nearest ESA and ANSI.

Selection of Preferred Servicing Alternative:

Three (3) watermain alignments were evaluated as follows:
• Alternative 1 – Watermain from east of Old Pinecrest Road, following Guelph Street and Adamson Street South to No. 10 Sideroad.
• Alternative 2 – Watermain following Guelph Street, Louisa Street, along future easement through Greenbelt lands, and across Credit River to No. 10 Sideroad.
• Alternative 3 – Watermain from east of Old Pinecrest Road, along future easement through Greenbelt lands, and across Credit River to No. 10 Sideroad.

Alternative 1 was selected as the preferred alignment for the future Zone G5L watermain because it followed existing road rights of way throughout and minimizes the crossing of natural features.





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Lakes Rivers and Creeks
- ANSI
- ESA
- Greenland
- Greenbelt
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area

220 110 0 220 Meters

Halton Region
Sustainable Halton

Project 6614 – 750mm Zone G6L Watermain from Heritage Rd to Adamson Street South
Alternative Watermain Alignments

AECOM
August 2011
1:15,000
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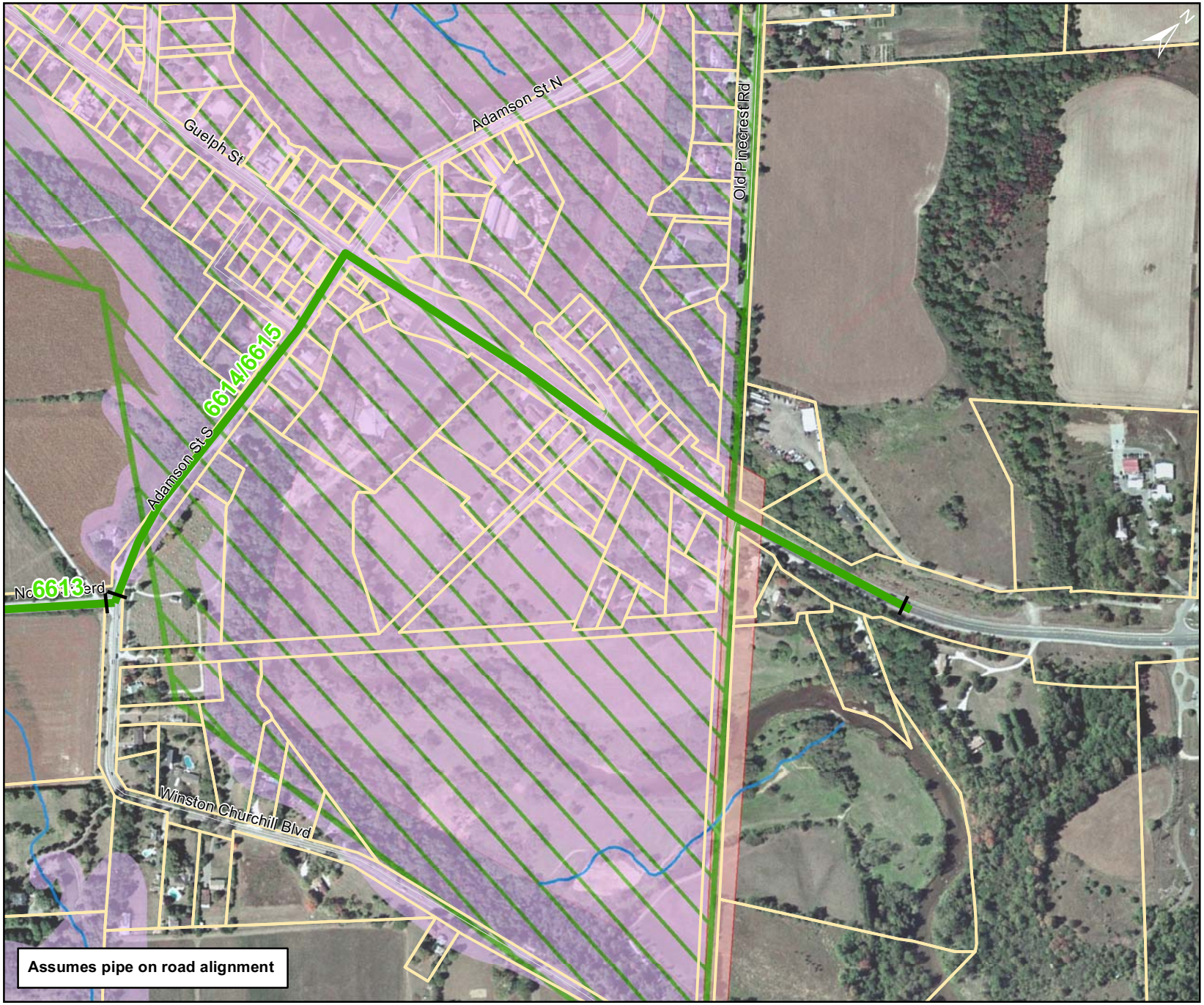
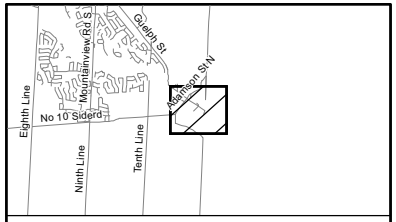




- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Proposed Water Facilities
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Feedermain (2008 MP Projects)

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Parcel Fabric
- Lakes, Rivers and Creeks

210 105 0 Meters

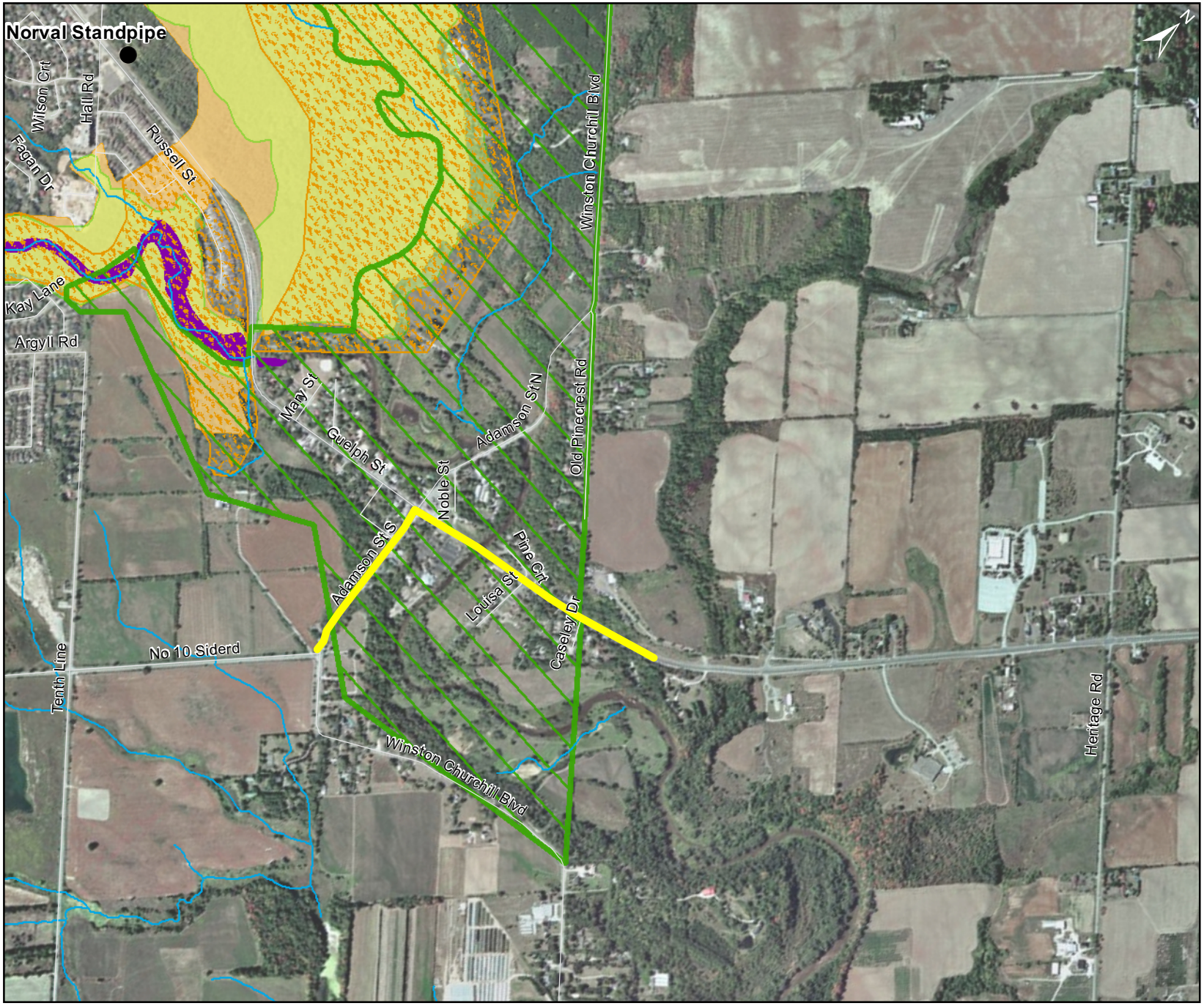
Halton Region
Sustainable Halton

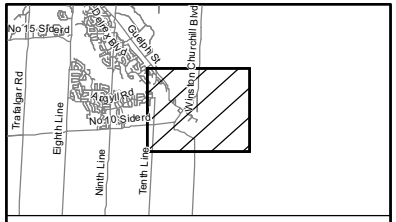
Halton Water Servicing
IPFS ID: 6614/6615

AECOM

Project No. 6614 - 750 mm Watermain on Adamson Street

Project No. 6614 - New 750 mm watermain on Adamson St			
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	New 700m WM along Bovaird Dr. west/ Guelph St., west to Adamson St., Adamson/Winston Churchill Blvd to No.10 Sideroad	New 750m WM along Bovaird Dr. west/Guelph St. to end of Louisa St. and west across Adamson St. south	New 750m WM on Adamson St. from Bovaird Dr. West across Greenbelt lands to No. 10 Sideroad
Environmental	Land is currently comprised of (Prime) Agricultural Lands, and within Greenbelt Protected Countryside designated lands within the Natural Heritage System Watermain alignment through Greenbelt Protected Countryside Alignment exclusively along existing road right of way Adjacent to wooded areas along the Credit River Low potential for impact to environmental features One (1) major Credit River crossing along Guelph St	Land is currently comprised of (Prime) Agricultural Lands, and within Greenbelt Protected Countryside designated lands within the Natural Heritage System Watermain alignment through Greenbelt Protected Countryside Alignment partially along existing road right of way Alignment crosses through wooded areas along the Credit River Higher potential for impact to environmental features One (1) major Credit River crossing	Land is currently comprised of (Prime) Agricultural Lands, and within Greenbelt Protected Countryside designated lands within the Natural Heritage System Watermain alignment through Greenbelt Protected Countryside Alignment requires easements throughout Alignment crosses through wooded areas along the Credit River Highest potential for impact to environmental features One (1) major Credit River crossing
Technical	Construction along existing road right of way Potential for conflict with utilities Longest watermain length but shortest environmental crossings Use of trenchless technology for water crossing	Some Greenfield Construction Some potential for conflict with utilities Moderate watermain length and moderate length of environmental crossings Use of trenchless technology for water crossing	Greenfield Construction Low potential for conflict with utilities Shortest watermain length but longest environmental crossings Use of trenchless technology for water crossing
Socio / Cultural	Watermain is to be located adjacent to some residential areas along Guelph St. and Adamson St., within the Hamlet of Norval Minimal traffic disruptions / disturbance expected to residents along Bovaird Dr west. and Adamson St. during construction Moderate traffic disruptions / disturbance expected along Guelph St. during construction. Temporary impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.	Watermain is to be located adjacent to residential areas within the Hamlet of Norval Traffic disruptions / disturbance expected to residents along Bovaird Dr. west and Louisa St. during construction Temporary minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.	Watermain is to be located adjacent to residential areas within the Hamlet of Norval Minimal traffic disruptions / disturbance expected along Bovaird Dr. west Temporary minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.
Financial	Longest watermain distance, shortest environmental crossings, no easements required - lowest cost	Moderate watermain distance, moderate environmental crossings, easement required - higher costs	Shortest watermain distance, longest environmental crossings, longer easement required - highest costs
Legal / Jurisdictional	Approvals / permits required by: CVC for water crossing	Approvals / permits required by: CVC for water crossing	Approvals / permits required by: CVC for water crossing
Overall Score	**High**	**Medium**	**Low**





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Preferred Watermain Alignment
- Lakes Rivers and Creeks
- ANSI
- ESA
- Greenland
- Greenbelt
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area

220 110 0 220 Meters

Halton Region
Sustainable Halton

Project 6614 – 750mm Zone G6L Watermain from Heritage Rd to Adamson Street South Preferred Watermain Alignment

AECOM
August 2011
1:15,000
60114062-257-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6614
Prepared/Updated By:	AECOM		

Project Description:

600 mm WM on Adamson St from 10th Siderd to Guelph St and on Guelph St from Adamson St to 10th Siderd (Zone G6L)

Scope of Work:

The new 600 mm WM on Adamson St from 10th Side Road to Guelph St and on Guelph St from Adamson St to 10th Side Rd. The project will require one (1) Credit River crossing. This project will tie in with the potential future Peel interregional connection. WM to be constructed within existing road right of way. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies.

Project Justification:

Watermain distribution network upgrade required to service future growth area in Georgetown. This project will convey flow eastwards from project # 6613 to tie in with project # 6615. This project will supply the Georgetown lakebased future growth area (G6L), but it will also act as a section of the potential future Peel Interregional connection, which will provide the system with an interim supply solution/redundancy for the RMOH system.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
- Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

The need for security of supply/redundancy in the RMOH system. Projected growth within Georgetown.

Project Timing:

In Service:	2026	Design:	2024
Class EA:	B	Construction:	2025

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Credit Valley Conservation
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6640/6688/6689/6690

Project Description: 400/600 mm WM on Trafalgar Road south (Zone M5L)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Alternatives Evaluation Table
4. Preferred Solution on Map
5. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6640, 6688, 6689, 6690
Prepared/Updated By:	AECOM		

Project Name/Description:

600 mm / 400 mm WM on Trafalgar Rd from Zone 5 Pumping Station at the Zone 4 Reservoir south to connect with existing and future Zone 5 HH 401 Employment Corridor, future Zone 5 Milton Northeast and existing Milton Zone 5 service area

Project Need:

The watermain supplements Zone 5 demand to service growth in the Hwy 401 Employment Corridor and Milton North East. The watermain will also provide security of supply to the overall Milton Zone 5 service area

Evaluation:

Alternative alignments were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts.

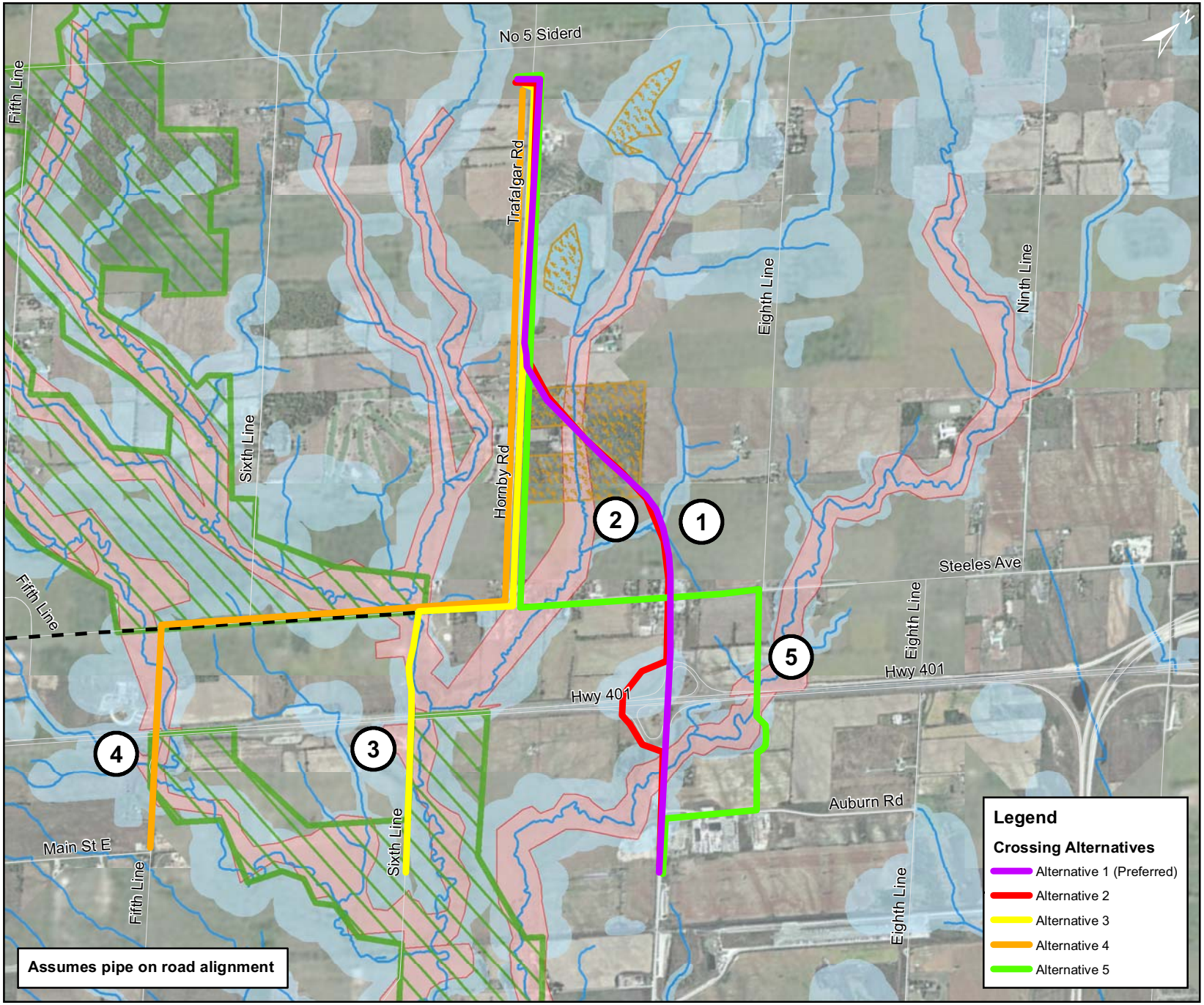
Special Consideration and MNR Screening:

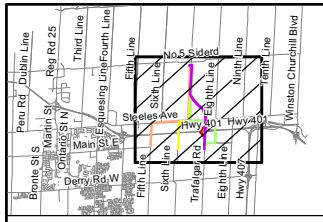
There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignment crosses Sixteen Mile Creek tributary, as well as through and adjacent to Environmentally Significant Area (ESA) and Greenland designated lands. Permit required from Conservation Halton.
• Cultural/Heritage: Not applicable.
• Transport: Encroachment order, as alignment crosses Hwy 401
• Bridge Crossing: Not applicable.
• Long Term Servicing: Feedermain will provide additional security of supply to Zone 5
• MNR Screening: Consultation required re: Endangered Species Act.

Selection of Preferred Servicing Alternative:

Five (5) watermain alignments were considered:
• Alternative 1 – 401 Crossing from Trafalgar Rd Reservoir down to Steeles Ave, south on Trafalgar Rd. to connect to M5L watermain on Main St.
• Alternative 2 – 401 Crossing from Trafalgar Rd Reservoir south to Steeles Ave., across the highway following the ramps, and continuing south to connect to M5L watermain on Main St.
• Alternative 3 – 401 Crossing from Trafalgar Rd Reservoir south on Trafalgar Rd and then running west Steeles Ave, South on Sixth Line to connect to the 750 mm (M5L) watermain on Main St.
• Alternative 4 – 401 Crossing from Trafalgar Rd Reservoir down to Steeles Ave, before running west on Steeles Ave, then due south on Fifth Line to connect to the proposed Main Street extension
• Alternative 5 – 401 Crossing from Trafalgar Rd Reservoir conveying flow south on WW Project # 6 & 7 preferred alignment on 8th Line, and then due west to connect to the 750 mm (M5L) watermain on Main St. and Trafalgar Rd.

Alternative 1 was selected as the preferred alignment. Project should be reviewed with on-going Zone 4 Project # 4985 design. Further opportunity to coordinate with future wastewater crossing but would require project update through future Master Plan review





- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

0 240 480 960 Meters

Halton Region
Sustainable Halton

Halton Water Servicing - 401 Crossing Alternatives
IPFS ID: 6640/6688/6689/6690

AECOM

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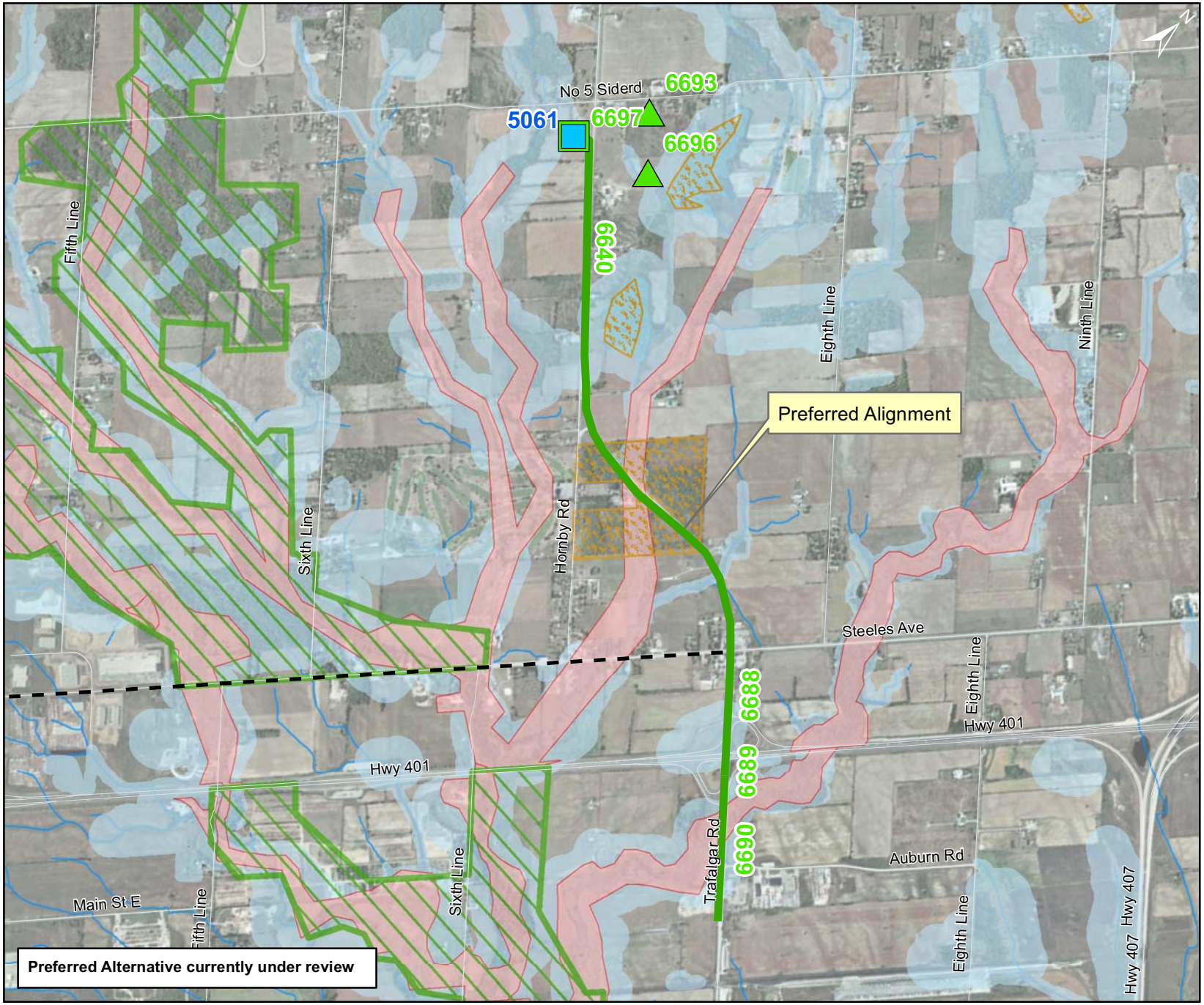
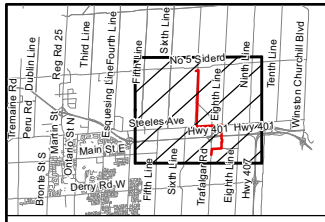
Project No. 6689 - Watermain crossing Hwy 401 Evaluation Table

Project No.6689 - Watermain Crossing Highway 401 Alternative Alignments					
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Description	New 400 mm Zone M5L WM on Trafalgar Rd Hwy 401 Crossing 401 Crossing from Trafalgar Rd Reservoir down to Steeles Ave, south on Trafalgar Rd. to connect to M5L watermain on Main St.	New 400 mm Zone M5L WM on Trafalgar Rd Hwy 401 Crossing 401 Crossing from Trafalgar Rd Reservoir south to Steeles Ave., across the highway following the ramps, and continuing south to connect to M5L watermain on Main St.	New 400 mm Zone M5L WM on Trafalgar Rd Hwy 401 Crossing 401 Crossing from Trafalgar Rd Reservoir south on Trafalgar Rd and then running west Steeles Ave, South on Sixth Line to connect to the 750 mm (M5L) watermain on Main St.	New 400 mm Zone M5L WM on Trafalgar Rd Hwy 401 Crossing 401 Crossing from Trafalgar Rd Reservoir down to Steeles Ave, before running west on Steeles Ave, then due south on Fifth Line to connect to the proposed Main Street extension.	New 400 mm Zone M5L WM on Trafalgar Rd Hwy 401 Crossing 401 Crossing from Trafalgar Rd Reservoir conveying flow south on WW Project # 6 & 7 preferred alignment on 8th Line, and then due west to connect to the 750 mm (M5L) watermain on Main St. and Trafalgar Rd.
Environmental	401/407 employment designated lands and adjacent to Hornby rural cluster area land. Watermain route avoids Greenbelt designated lands, the route predominantly follows existing road alignments. Adjacent to Regional Wetlands at northern portion of route. The alignment crosses the following watercourses: -Four (4) minor tributaries of Mid Sixteen Mile Creek No ANSIs/ESAs on site.	401/407 employment designated lands and adjacent to Hornby rural cluster area land. Watermain route avoids Greenbelt designated lands, the route predominantly follows existing road alignments. Adjacent to Regional Wetlands at northern portion of route. The alignment crosses the following watercourses: -Four (4) minor tributaries of Mid Sixteen Mile Creek No ANSIs/ESAs on site.	401/407 employment designated lands and adjacent to Hornby rural cluster area land. Watermain route through Greenbelt designated lands on the Sixth Line section, however, the route predominantly follows existing road alignments. Adjacent to Regional Wetlands at northern portion of route. The alignment crosses the following watercourses: -Two (2) minor tributaries of Mid Sixteen Mile Creek No ANSIs/ESAs on site.	Avoids the Hornby rural cluster. Watermain route through Greenbelt designated lands on the Steeles Ave. and Main Street section, however, the route predominantly follows existing road alignments. Adjacent to Regional Wetlands at northern portion of route. The alignment crosses the following watercourses: -One (1) major East Sixteen Mile Creek -Five (5) minor tributaries of East Sixteen Mile Creek No ANSIs/ESAs on site.	Avoids the Hornby rural cluster. Watermain route avoids Greenbelt designated lands, the route predominantly follows existing road alignments. Adjacent to Regional Wetlands at northern portion of route. The alignment crosses the following watercourses: -Four (4) minor tributaries of Mid Sixteen Mile Creek No ANSIs/ESAs on site.
Technical	Alignment follows planned road corridors where possible. No access issues - 100% based on current road alignments. Shortest feedermain distance Minimal potential for conflict with utilities in Hornby. Crossings: -Four (4) minor tributaries of Mid Sixteen Mile Creek -Major Hwy 401 crossing at interchange Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Security of supply is maintained with Sixth Line main connection to the proposed Main Street alignment. It may be possible to construct in accordance with the timings given in the Transport Master Plan i.e. the Trafalgar Road widening is scheduled for 2026.	Alignment follows planned road corridors where possible. No access issues - 100% based on current road alignments. Second shortest feedermain distance. Minimal potential for conflict with utilities in Hornby. Crossings: -Four (4) minor tributaries of Mid Sixteen Mile Creek -Major Hwy 401 crossing at interchange Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Security of supply is maintained with Sixth Line main connection to the proposed Main Street alignment. It may be possible to construct in accordance with the timings given in the Transport Master Plan i.e. the Trafalgar Road widening is scheduled for 2026.	Alignment follows planned road corridors where possible. Potential for problems in access to agricultural lands. However, this is alternative is dependent on the outcome of the proposed Milton Main Street extension. Moderate feedermain distance. Minimal potential for conflict with utilities in Hornby. Crossings: -Two (2) minor tributaries of Mid Sixteen Mile Creek -Hwy 401 crossing Tunnelling is the most suitable technique Security of supply is maintained with Sixth Line main connection to the proposed Main Street alignment.	Alignment follows planned road corridors where possible. Potential for problems in access to agricultural lands. However, this is alternative is dependent on the outcome of the proposed Milton Main Street extension. Longest feedermain distance Minimal potential for conflict with utilities in Hornby. Crossings: -One (1) major East Sixteen Mile Creek -Five (5) minor tributaries of East Sixteen Mile -Hwy 401 crossing Tunnelling is the most suitable technique Security of supply is maintained with Sixth Line main connection to the proposed Main Street alignment.	Alignment predominantly follows planned road corridors, however the section that is designed to follow the Project No. 6752/6753 wastewater alignment travels to the east of the Exit 328 interchange. Alignment is approximately 7655 m. Minimal potential for conflict with utilities in Hornby. Crossings: -Four (4) minor tributaries of Mid Sixteen Mile Creek -Hwy 401 crossing at interchange Tunnelling is the most suitable technique Security of supply is maintained with Sixth Line main connection to the proposed Main Street alignment. Further opportunity to coordinate with future wastewater crossing but would require project update through future MP update
Socio / Cultural	Moderate traffic disruptions / disturbance expected along Trafalgar Rd and Steeles Ave during construction. Minimal visual impact is expected to effect the community of Hornby as there are few local residencies within the area. There will be a temporary but minimal impact on nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Hornby may feel a minimal effect on a short term basis. Minimal effect on local farmland.	Moderate traffic disruptions / disturbance expected along Trafalgar Rd and Steeles Ave during construction. Minimal visual impact is expected to effect the community of Hornby as there are few local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Hornby may feel a minimal effect on a short term basis. Minimal effect on local farmland.	Moderate traffic disruptions/disturbance expected along Hornby, Steeles and Trafalgar Rd during construction. No major access issues are anticipated. Minimal visual impact is expected to effect the community of Hornby as there are few local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Hornby may feel a minimal effect on a short term basis. Minimal effect on local farmland.	Moderate traffic disruptions/disturbance expected along Hornby, Steeles and Trafalgar Rd during construction. No major access issues are anticipated. Minimal visual impact is expected to effect the community of Hornby as there are few local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Hornby may feel a minimal effect on a short term basis. Minimal effect on local farmland.	Moderate traffic disruptions / disturbance expected along Trafalgar Rd, Steeles Ave and Auburn Rd during construction. Low visual impact as there are a number of local residencies within the area. Construction will be confined to areas outside residential areas. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. This solution has the most significant effect on nearby agricultural land.
Financial	Shorter feedermain distance than other alternatives. Jack and Bore or Directional drilling would provide a lower cost solution than tunnelling, however expensive tunnelling is required at the highway crossing.	Lower feedermain distance than alternatives 4, and 5. Jack and Bore or Directional drilling would provide a lower cost solution than tunnelling, however expensive tunnelling is required at the highway crossing. Utilizing the ramps may be an issue.	Lower feedermain distance than alternatives 2,4, and 5. Expensive tunnelling required for the highway crossing.	Joint longest feedermain distance Expensive tunnelling required for the highway crossing.	Joint longest feedermain distance The nature of the construction of this alternative means that the timing of all three projects would need to be synchronised and as a result the funding in order to construct all three projects simultaneously requiring a significant initial financial outlay.
Legal / Jurisdictional	Requirement for an MOE Encroachment Order as the pipe is within 395 m of a 400 series Highway MOE Guidelines need to be adhered to. Conservation Halton Permits MTO encroachment permit required for work by Hwy 401	Requirement for an MOE Encroachment Order as the pipe is within 395 m of a 400 series Highway MOE Guidelines need to be adhered to. Conservation Halton Permits MTO encroachment permit required for work by Hwy 401	Requirement for an MOE Encroachment Order as the pipe is within 395 m of a 400 series Highway MOE Guidelines need to be adhered to. Conservation Halton Permits MTO encroachment permit required for work by Hwy 401	Requirement for an MOE Encroachment Order as the pipe is within 395 m of a 400 series Highway MOE Guidelines need to be adhered to. Conservation Halton Permits MTO encroachment permit required for work by Hwy 401	Requirement for an MOE Encroachment Order as the pipe is within 395 m of a 400 series Highway MOE Guidelines need to be adhered to. Conservation Halton Permits MTO encroachment permit required for work by Hwy 401
Overall Score	High	Low	Low	Low	Moderate





- Project Area

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Feedermain

Future Water Infrastructure
- Water Pumping Station
- Water Booster Pumping Station
- Water Well
- Water Purification Plant
- Water Reservoir
- Future Feedermain (SH MP Projects)

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

0 255 510 1,020 Meters

Halton Region
Sustainable Halton

Halton Water Servicing - Preferred 401 Crossing
IPFS ID: 6640/6688/6689/6690

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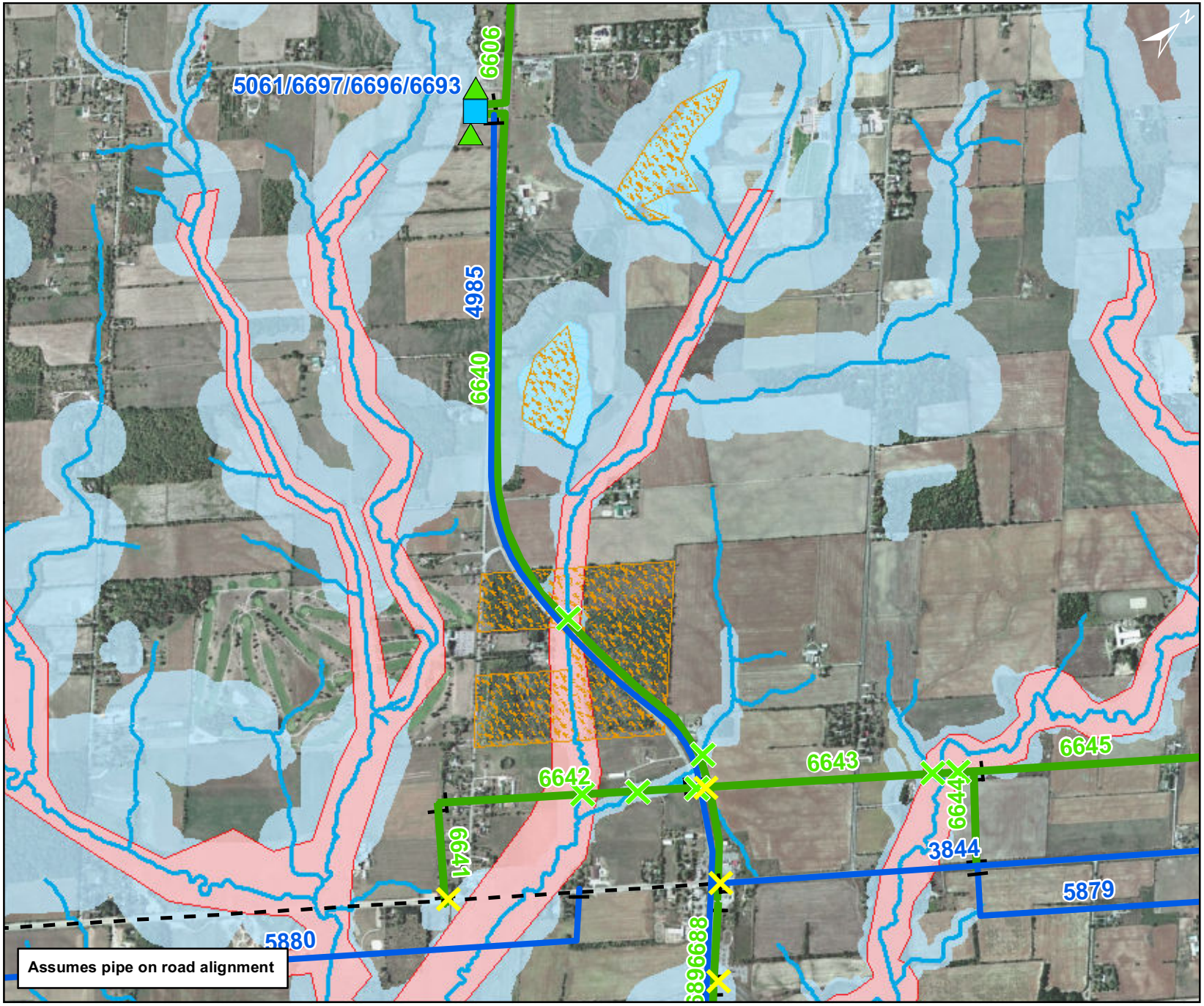

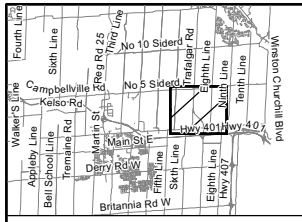

- Project Area

Legend

Existing Water Infrastructure
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- Existing Feedermain

Proposed Water Facilities
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- Feedermain (2008 MP Projects)

Future Water Infrastructure
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Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

Special Engineering Difficulties (SED's)
- Envi
- MajorEnvi
- MajorRoad
- Rail
- Road
- Lakes, Rivers and Creeks

690 345 0 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6640/6688/6689/6690

AECOM

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6640
Prepared/Updated By:	AECOM		

Project Description:

600 mm WM on Trafalgar Rd from Zone 5 Pumping Station at the Zone 4 Reservoir to 600 mm Zone M5L WM on Steeles Avenue (ID 3844) (Zone M5L)

Scope of Work:

This project is a section of the new 600 mm Zone 5 watermain boosted from the Zone 5 pumping station at the Zone 4 Reservoir. The watermain supplements Zone 5 demand to service growth in the Hwy 401 Employment Corridor and Milton North East. The watermain will also provide security of supply to the overall Milton Zone 5 service area. Alternative alignments have been reviewed with Alternative 1 selected. Project should be reviewed with on-going Zone 4 Project # 4985 design. Further opportunity to coordinate with future wastewater crossing but would require project update through future Master Plan review

Project Justification:

Watermain distribution network upgrade required to service future growth area in east Milton.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected population growth to the south of the 401, to the east of the town of Milton.

Project Timing:

In Service:	2023	Design:	2020
Class EA:	B	Construction:	2021

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit	X		
Conservation Permit	X		Req Conservation Halton
Ministry of Transport - Encroachment Order	X		
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6688
Prepared/Updated By:	AECOM		

Project Description:

400 mm WM on Trafalgar Rd from Steeles Avenue to Hwy 401 (Zone M5L)

Scope of Work:

The new 400 mm Zone 5 watermain will be constructed from the Steeles Avenue to Hwy 401. The watermain is one section of the watermain designed to supplement Zone 5 demands along the Hwy 401 Employment corridor, the Zone 5 Milton East growth and will also provide security of supply to the general Milton Zone 5 service area.

Project Justification:

Watermain distribution network upgrade required to service future lakebased growth areas in Hwy 401 corridor and the north east of Milton.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Hwy 401 Employment Lands and Milton North East

Project Timing:

In Service:	2023	Design:	2020
Class EA:	B	Construction:	2021

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Conservation Halton
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6689
Prepared/Updated By:	AECOM		

Project Description:

400 mm WM on Trafalgar Rd Hwy 401 Crossing (Zone M5L)

Scope of Work:

The new 400 mm watermain is one section of the Zone 5 feedermain boosted from the Zone 4 Reservoir to supplement the Hwy 401 Employment Corridor and Milton North East Zone 5. The project will require one (1) major crossing of Highway 401.

Project Justification:

Watermain distribution network upgrade required to service future lakebased growth areas in the Hwy 401 Employment Corridor and Milton North East. Project also provides security of supply for Milton Zone 5 Service Area

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Future lakebased growth in Hwy 401 Employment Corridor and Milton North East.

Project Timing:

In Service:	2016	Design:	2012
Class EA:	B	Construction:	2014

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit		X	
Ministry of Transport - Encroachment Order	X		Hwy 401 Crossing
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	($)
		Staging	_____	(yr)	($)
		Staging	_____	(yr)	($)

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6690
Prepared/Updated By:	AECOM		

Project Description:

400 mm WM on Trafalgar Rd from Hwy 401 to Main St Extension (Zone M5L)

Scope of Work:

New 400 mm WM on Trafalgar Rd from Hwy 401 to Main St Extension (Zone M5L). The project will require one (1) environmental crossing over Sixteen Mile Creek Tributary. This project will tie in with the 401 crossing (project # 6689) and project 6691 - all of these projects convey flow southwards to the north east of Milton lakebased growth areas (Zone M5L) via the Main Street extension. This project will also supplement the Milton Lakebased service area in the north east of Milton. Project is within existing road right of way.

Project Justification:

Watermain distribution network upgrade required to service future lakebased growth areas in the north east of Milton.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Watermain distribution network upgrade required to service future lakebased growth areas in north east Milton.

Project Timing:

In Service:	2023	Design:	2020
Class EA:	B	Construction:	2021

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works
PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP(2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Conservation Halton
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6661

Project Description: 900 mm Second Feedermain to Davis Road Booster Pumping Station (Zone O1)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
4. Alternatives Evaluation Table
5. Preferred Solution on Map
6. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6661
Prepared/Updated By:	AECOM		

Project Name/Description:

900 mm Second Feedermain to Davis Road Booster Pumping Station (Zone O1).

Project Need:

To provide additional supply to meet future demandsin the central Oakville area (Zone O2). This project is required to support water supply under existing conditions as well as future growt in Oakville, Milton and Georgetown. The existing Davis Road Pumping Station firm capacity exceeds the capacity of the existing trunk watermain feeding it. The new feedermain will also provide security of supply.

Evaluation:

Alternative alignments were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. Alternatives for the watermain crossing along No. 10 Sideroad and across the Credit River, were aligned as: i) fully along the existing road right of way, ii) partially along a future easement, and iii) fully along a future easement.

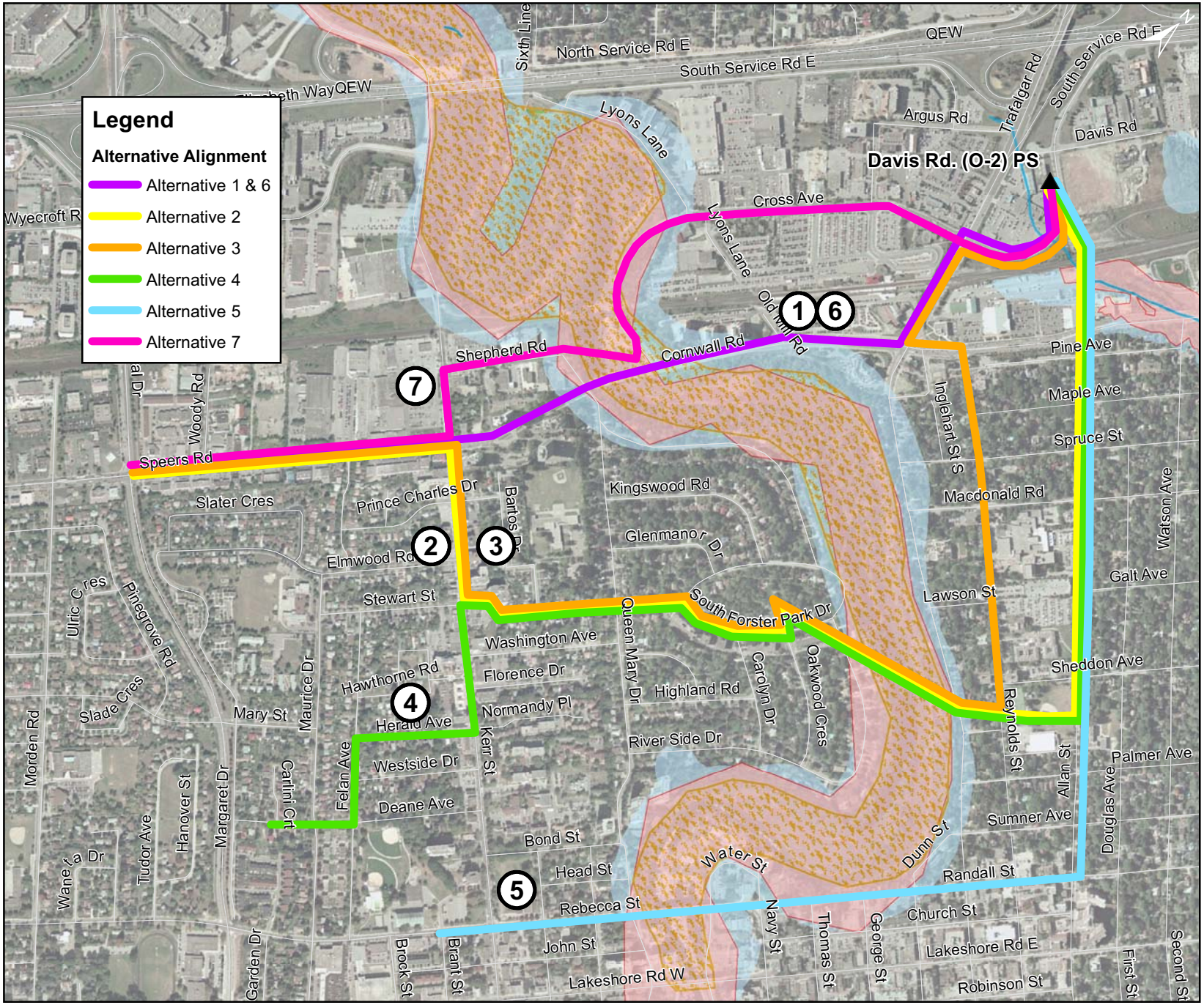
Special Consideration and MNR Screening:

There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignment crosses Sixteen Mile Creek, as well as through and adjacent to Environmentally Significant Area (ESA) and Greenland designated lands. Permit required from Conservation Halton.
• Cultural/Heritage: Not applicable.
• Transport: Encroachment order, as alignment is within 395 m of Hwy 403.
• Bridge Crossing: Not applicable.
• Long Term Servicing: Feedermain will provide additional capacity to accommodate future growth demands in Oakville, Milton and Georgetown.
• MNR Screening: Consultation required re: Endangered Species Act.

Selection of Preferred Servicing Alternative:

Seven (7) watermain alignments were considered:
• Alternative 1 – 900 mm watermain along Speers Road, between Dorval Drive and Davis Rd Booster, watermain attached to existing road bridge over Sixteen Mile Creek.
• Alternative 2 – 900 mm watermain along Speers Avenue, Stuart Street, Kerr Street and Davis Rd Booster. Tunnel Under 16 Mile Creek between Forest Park and Wallace Park.
• Alternative 3 – 900 mm watermain along Rebecca Street and Randal Street. Between Brant Street and Douglas Avenue. Main to be tied to bridge.
• Alternative 4 – 900 mm watermain along Dean Avenue, Stuart Street and Kerr Street. Tunnel Under 16 Mile Creek between Forest Park and Wallace Park.
• Alternative 5 – 900 mm watermain along Speers Road, between Dorval Drive and Davis Rd Booster, watermain attached to existing road bridge over Sixteen Mile Creek.
• Alternative 6 – 900 mm watermain along Speers Road, between Dorval Drive and Davis Rd Booster, tunnel under Sixteen Mile Creek.
• Alternative 7 – 900 mm watermain west along Cross Avenue, west across Oakville owned property, west along Shepherd Road, south on Kerr Street , then west on Speers Road.

Alternative 7 was selected as the preferred alignment for the future Zone O1 watermain. The project will require one major creek crossing by tunnel. Property acquisition will be required for tunnel shaft sites.



Halton Region
Sustainable Halton

Project 6661 - 750mm Watermain
Alternative Alignments

AECOM

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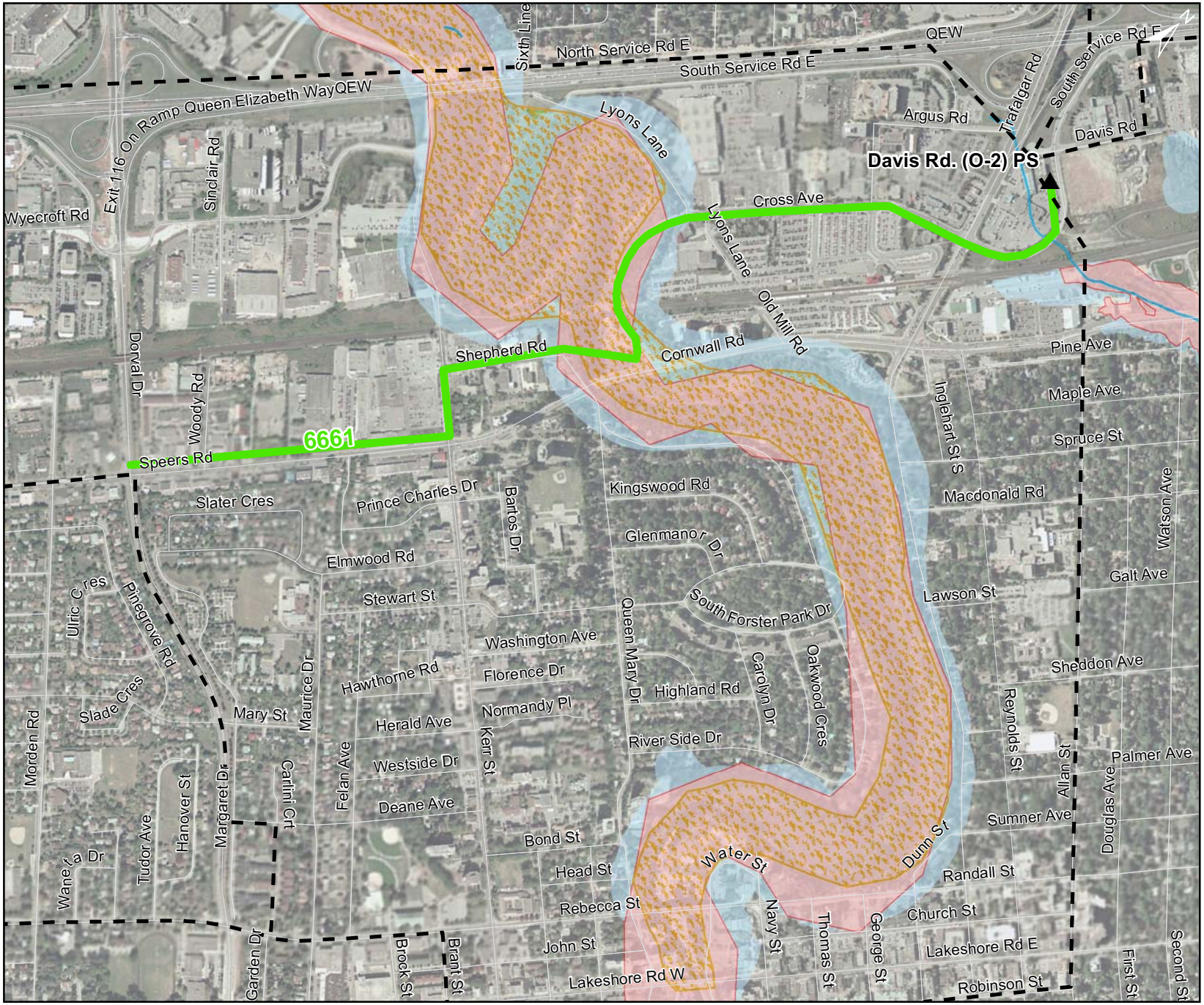
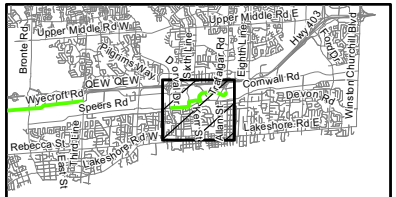
Project No. 6661 - Speers Rd Watermain Alignments

Project No. 6661 - Speers Rd Watermain Alignments							
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**	**Alternative 6**	**Alternative 7**
Description	900 mm watermain along Speers Road, between Dorval Drive and Davis Rd Booster, watermain attached to existing road bridge over Sixteen Mile Creek.	900 mm watermain along Speers Road, south on Kerr Street, east on Stuart St and South Forester Park Dr. Tunnel under Sixteen Mile Creek from Forest Park to Wallace Park, north on Allan Street, tunnel crossing of rail line	900 mm watermain along Speers Road, south on Kerr St, east on Stuart St and South Forester Park Dr. Tunnel under Sixteen Mile Creek from Forest Park to Wallace Park, north on Reynolds St, Trafalgar Rd to Davies Rd PS	900 mm watermain along Dean Av. north on Kerr St., east on Stewart St and South Forester Park Dr. Tunnel under Sixteen Mile Creek from Forest Park to Wallace Park, north on Allan Street, tunnel crossing of rail line	900 mm watermain along Rebecca Street and Randal Street, between Brant Street and Douglas Avenue, watermain is hung from existing bridge to cross Sixteen Mile Creek, north on Allan Street, tunnel crossing of rail line	900 mm watermain along Speers Road, between Dorval Drive and Davis Rd Booster, watermain tunneled under Sixteen Mile Creek.	900 mm watermain west along Cross Avenue, west across Oakville owned property, west along Shepherd Road, south on Kerr Street , then west on Speers Road
Environmental	Construction will occur in Sixteen Mile Creek Watershed Watermain to cross Greenland, and Environmentally Sensitive Area when crossing Sixteen Mile Creek (cold water, permanent) Watermain to cross a tributary of Morrison Creek (permanent, warm water) along South Service Road Potential environmental issues to be mitigated by proper control and construction methods	Construction will occur in Sixteen Mile Creek Watershed Shaft construction likely to require removal of mature trees Watermain to cross Greenland, and Environmentally Sensitive Area when crossing Sixteen Mile Creek (cold water, permanent) Watermain to cross a tributary of Morrison Creek (permanent, warm water) Route will cross through Parkland/Natural lands Higher potential for environmental impacts, would require further mitigative measures	Construction will occur in Sixteen Mile Creek Watershed Shaft construction likely to require removal of mature trees Watermain to cross Greenland, and Environmentally Significant designated Area when crossing Sixteen Mile Creek (cold water, permanent) Watermain to cross a tributary of Morrison Creek (permanent, warm water) along South Service Road Route will cross through Parkland/Natural lands Higher potential for environmental impacts, would require further mitigative measures	Construction will occur in Sixteen Mile Creek Watershed Shaft construction likely to require removal of mature trees Watermain to cross Greenland, and Environmentally Sensitive Area when crossing Sixteen Mile Creek (cold water, permanent) Watermain to cross a tributary of Morrison Creek (permanent, warm water) Route will cross through Parkland/Natural lands Higher potential for environmental impacts, would require further mitigative measures	Construction will occur in Sixteen Mile Creek Watershed Watermain to cross Greenland, and Environmentally Significant designated Area when crossing Sixteen Mile Creek (cold water, permanent) Route along Rebecca Street and Randal Street to pass through Central Business District (CBD) Watermain to cross a tributary of Morrison Creek (permanent, warm water) along South Service Road Potential environmental issues to be mitigated by proper control and construction methods (watermain hung from bridge)	Construction will occur in Sixteen Mile Creek Watershed Same route as Alternative 1, although Sixteen Mile Creek is crossed by tunnelling Watermain to cross Greenland, and Environmentally Significant Area when crossing Sixteen Mile Creek (cold water, permanent) Watermain to cross a tributary of Morrison Creek (permanent, warm water) along South Service Road Potential environmental issues to be mitigated by proper control and construction methods	Construction will occur in Sixteen Mile Creek Watershed Construction to occur though and adjacent to Environmentally Significant Area (ESA) and Greenland designated lands. Alignment along: -Cross Avenue within Greenlands -Shepherd Road within heavy industrial designated lands -Kerr Street within commercial designated lands Potential environmental issues to be mitigated by proper control and onstruction methods
Technical	Work along Speers Road, busy highway Working over water strapping main to bridge Watermain size constrained will need to be downsized to 600 m to tie it to the bridge Shortest and most direct route but does not provide for full redundancy of system	Work along Speers Road, busy highway Tunnelling under 16 mile creek, shafts located in parkland 16 Mile Creek Crossing longer than Alternatives 6 and 7 Requires crossing of existing rail line Longer route that provides for full redundancy of system	Work along Speers Road, busy highway Tunnelling under 16 mile creek, shafts located in parkland 16 Mile Creek Crossing longer than Alternatives 6 and 7 Longer route that provides for full redundancy in system	Tunnelling under 16 mile Creek, shafts located in Parkland 16 Mile Creek Crossing longer than Alternatives 6 and 7 Avoids busy Speers Road and Rebecca Street but alignment is on smaller residential roads with potential for utilities conflict/constraints Longest route that provides for full redundancy of system	Work along Rebecca Street, busy highway Working over water strapping main to bridge Potential constraint due to 500 mm main already proposed to be strapped to bridge Does not proved full system redundancy Watermain will need to be downsized for 600 m to tie it to the bridge	Work along Speers Road and Cornwall Rd, busy highways Shafts will have to be located in private property Shortest route that provides for full redundancy of system	Work along Speers Road, busy highway Within ESA and Greenbelt lands. Tunnel sites less constrained May be possible to have the tunnelling pits on Town of Oakville property If more space is required, flat vacant privately owned land is available Queen Mary bridge over Speers Road is avoided There is likely more space to cross under the rail line at Cross Avenue then there appears to be on Trafalgar Road
Socio / Cultural	Potential Impact on traffic during works on Speers Road Lower potential adverse impacts to residents and business owners, as route avoids small residential roads Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic during works on Speers Road Impact on traffic on smaller side roads during construction Loss of parkland during construction of tunnelling Tunnelling will generate additional Construction traffic Higher potential for adverse impacts to residents and business owners during construction as route partly along smaller residential roads Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic during works on Speers Road Impact on traffic on smaller side roads during construction Loss of parkland during construction of tunnelling Tunnelling will generate additional Construction traffic Higher potential for adverse impacts to residents and business owners during construction as route partly along smaller residential roads Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic on smaller side roads during construction Loss of parkland during construction of tunnelling Tunnelling will generate additional construction traffic Higher potential for adverse impacts to residents and business owners during construction as route partly along smaller residential roads Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic during works on Rebecca Street and Randal Street Potential adverse impacts to residents and business owners Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic during works on Speers Road and Cornwall Rd Tunnelling will generate additional construction traffic Potential adverse impacts to residents and business owners Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control	Impact on traffic during works on Speers Road Alignment along wider industrial roads and avoids residential area Potential adverse impacts to residents and business owners Potential noise, dust, air pollution during construction, which will be mitigated by proper control methods e.g. construction during normal working hours, dust control
Financial	Not considered due to need to downsize pipe	Higher costs associated with longer route, constrained tunnel sites and crossing of rail line	Higher costs associated with longer route and constrained tunnel sites	Higher costs associated with longer route, constrained tunnel sites and crossing of rail line	Not considered due to need to downsize pipe	Lower costs associated with shorter route	Lower costs associated with shorter route
Legal / Jurisdictional	Agreement required to hang from bridge	Easements required for tunnel shafts Rail crossing required	Easements required for tunnel shafts	Easements required for tunnel shafts Rail crossing required	Agreement required to hang from bridge	Easements required for tunnel shafts	Easements required for tunnel shafts
Overall Score	**Low**	**Moderate**	**Moderate**	**Moderate**	**Low**	**Moderate**	**High**





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir

Environmental Features
- Greenbelt
- ANSI
- ESA
- Greenland - A
- Greenland - B
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

140 70 0 140 Meters

Halton Region
Sustainable Halton

Project 6661
750mm Watermain - Dorval Drive to Davis Rd. PS (O-2) Preferred Alignment

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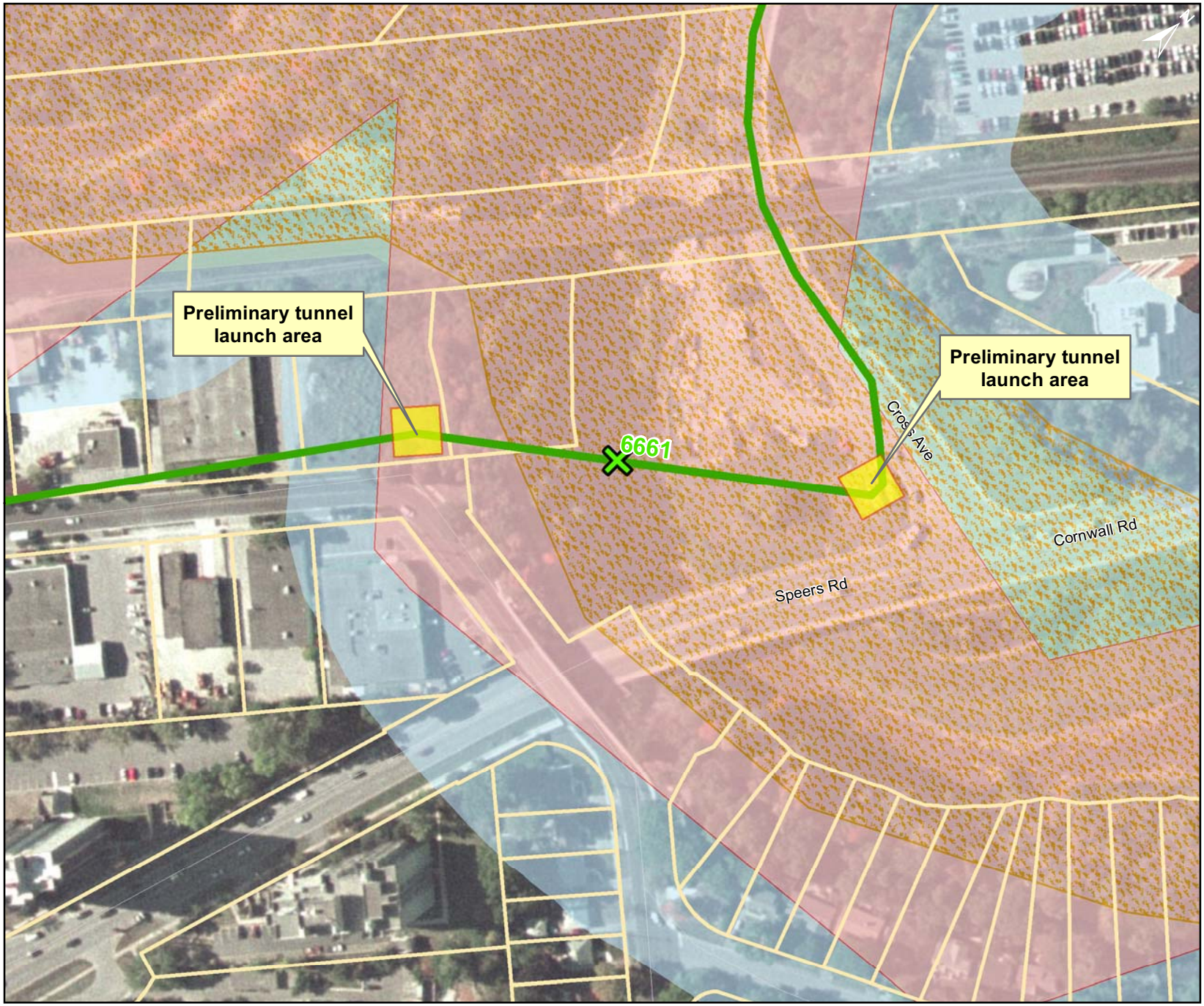

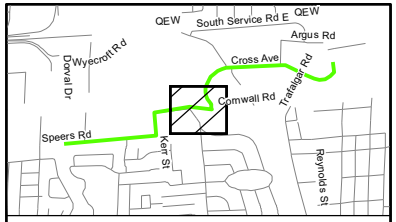

- Project Area

Legend

- Existing Pumping Station
- Existing Well
- Existing Standpipe
- Existing Water Purification Plant
- Existing Reservoir
- Existing Elevated Tower
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Existing Feedermain
- Feedermain (2008 MP Projects)
- Future Feedermain (SH MP Projects)

Special Engineering Difficulties (SED's):

- Major Environmental Crossing (>20m)
- Environmental Crossing
- Major Road Crossing
- Road Crossing
- Railroad Crossing

Environmental Features

- Greenbelt
- Greenland - A
- Greenland - B
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

0 15 30 60 Meters

Halton Region
Sustainable Halton

Oakville Water Servicing
Project Crossing 6661

AECOM

Oct 03, 2011
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2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6661
Prepared/Updated By:	AECOM		

Project Description:

900 mm Second Feedermain to Davis Road Booster Pumping Station (Zone O1)

Scope of Work:

The new Zone O1 900 mm watermain will be constructed from the Davis Road Pump Station, west on Cross Avenue, tunnel crossing of the Sixteen Mile Creek to Shepherd Road, south on Kerr Street and west on Speers Rd. The project will require one major creek crossing. Capital costs accounts for tunnel crossing and allowance for deep shafts. See additional comments for Benefits to Existing.

Project Justification:

Watermain distribution network upgrade required to service future growth area in central Oakville. This project will convey flow eastwards across the environmental crossing to feed Davis Road Pump Station. This project will supply the central Oakville area (Zone O2). This project is required to support water supply under existing conditions (existing rated pumping capacity of Davis Road Pump Station) as well as to support supply to future growth in Oakville, Milton and Georgetown. Existing Davis Road Pump Station firm capacity exceeds capacity of the existing trunk watermain feeding it. In addition the new feedermain would provide security of supply.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Existing operational constraint and projected growth

Project Timing:

In Service:	2016	Design:	2012
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

There is a benefit to existing portion cost. Existing water system has constraints in water supply feed to 8th Line trunk infrastructure. This project is required to support water supply under existing conditions (existing rated pumping capacity of Davis Rd Pumping Station) as well as to support supply to future growth in Oakville, Milton and Georgetown. Demand percentage based on Oakville, Milton and Georgetown service area.

Property Requirements:

Property acquisition required (Tunnel shaft sites).

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Conservation Halton
Ministry of Transport - Encroachment Order	X		Within 395 m of Hwy 403
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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).

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)

Sustainable Halton Capital Program

IPFS ID:6663

Project Description: 400 mm WM from 9th Line on easement to Bristol Circle (Zone O3)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Alternatives Evaluation Table
5. Preferred Solution on Map
6. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6663
Prepared/Updated By:	AECOM		

Project Name/Description:

New 400 mm Zone O3 watermain on 9th Line from the junction of Dundas St with PRV to Bristol Circle, in Oakville.

Project Need:

The Zone O3 watermain is required to meet existing and future water demands in the employment area as well as address current localized low pressure issues. It is considered an extension of the distribution system, which will also provide additional security of supply to the area.

Evaluation:

This watermain alignment involves crossing Highway 403 at or south of Dundas Street. The area of interest is currently designated employment lands. Alternative watermain crossings were identified and evaluated based on the ability to reconcile existing low pressures along Bristol Circle, minimize impacts to traffic and disruption to nearby businesses and land owners, as well as minimize capital and O&M costs.

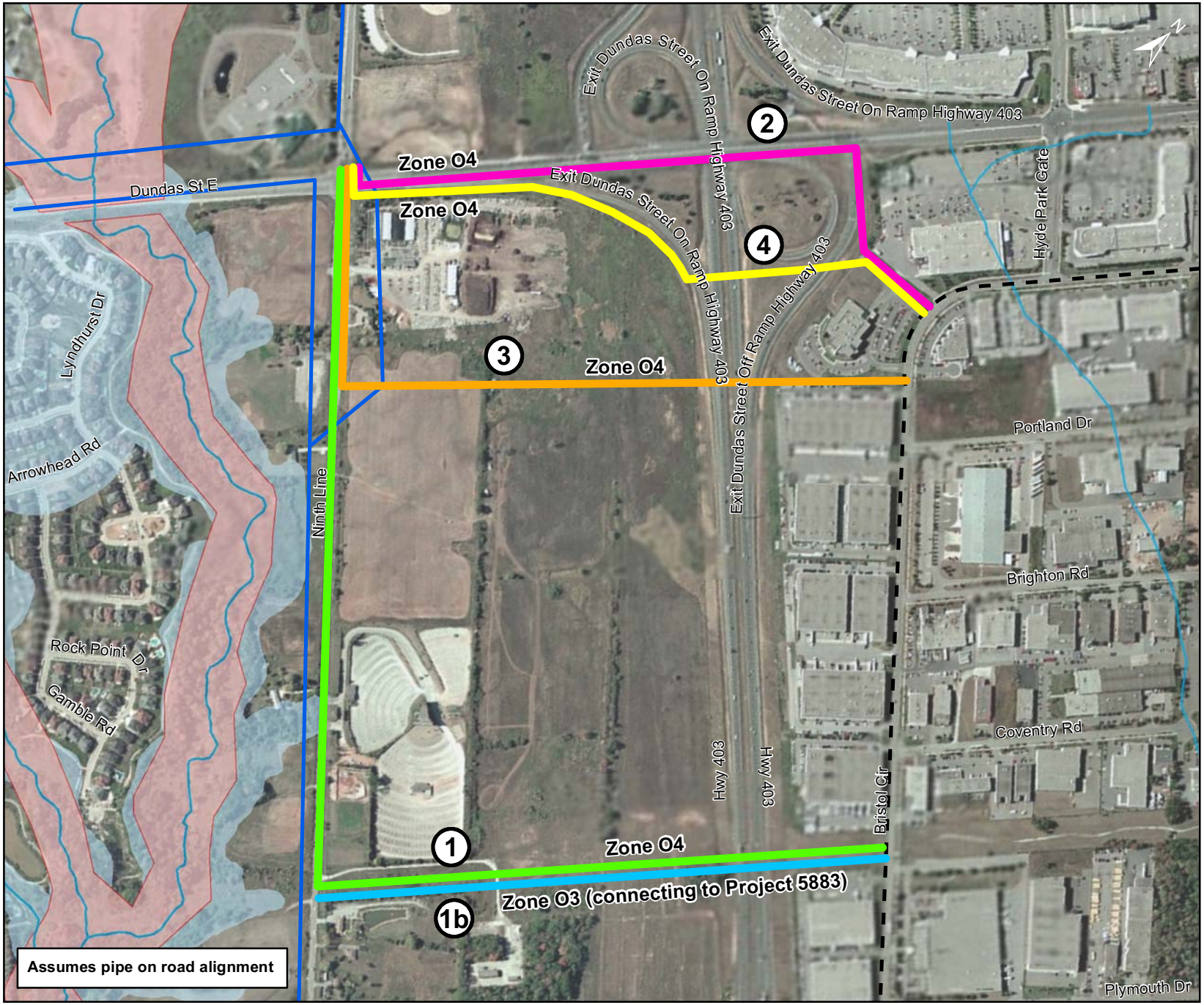
Special Consideration and MNR Screening:

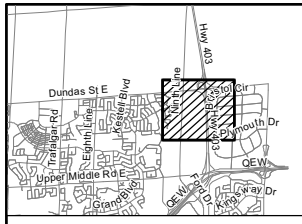
There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignment does not cross any environmental designated areas.
• Cultural/Heritage: Existing land use is agricultural farming and employment (Winston Park Employment District). No significant impacts anticipated.
• Transport: Alignment follows and is contingent on the planned road corridor proposed in the Transportation Master Plan. Should this road alignment be modified, this watermain route may require revision.
• Bridge Crossing: No bridge crossings are involved.
• Long Term Servicing: Not applicable.
• MNR Screening: Not applicable (no identified endangered species on site).

Selection of Preferred Servicing Alternative:

Five (5) alternative watermain alignments were evaluated as follows:
• Alternative 1 – Zone O4 watermain connecting to the Zone O4 watermain on Ninth Line and Dundas Street East, with a PRV at the Zone 3-Zone 4 boundary, extending to approximately 1 km south to hydro easement and approximately 830 m east to Bristol Circle.
• Alternative 1b – Zone O3 watermain connecting to the Zone 03 watermain on Ninth Line at the hydro easement south of Dundas Street East, extending approximately 830 m east along the utility corridor to Bristol Circle.
• Alternative 2 – Zone O4 watermain connecting to the Zone O4 watermain on Ninth Line and Dundas Street East, extending to approximately 730 m east, with a PRV at the Zone 3-Zone 4 boundary, and approximately 320 m southeast (paralleling Hwy 403 off ramp) to connect to Bristol Circle
• Alternative 3 – Zone O4 watermain connecting to the Zone O4 watermain on Ninth Line and Dundas Street East, with a PRV at the Zone 3-Zone 4 boundary, extending to 300 m south on Ninth Line and approximately 830 m east to Bristol Circle.
• Alternative 4 – Zone O4 watermain connecting to the Zone O4 watermain on Ninth Line and Dundas Street East (paralleling Hwy 403 on ramp), with a PRV at the Zone 3-Zone 4 boundary, extending east to connect to Bristol Circle.

Alternative 1b was selected as the preferred alignment for the future Zone O3 watermain supplying water to Bristol Circle. This alignment provides additional security of supply and addresses localized low pressure issues along Bristol Circle through localized booster pumps when required (e.g. max day conditions). The length of pipe required is approximately 830 m, thereby minimizing cost and utilizing available Zone O3 infrastructure on Ninth Line. Coordination with Hydro One will be required for use of the utility corridor. The project has been classified as Schedule “B” because it involves the crossing of a major highway and has potential for some adverse environmental impacts.





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir

Environmental Features
- Greenbelt
- ANSI
- ESA
- Greenland - A
- Greenland - B
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

110 55 0 110 Meters

Halton Region
Sustainable Halton

Halton Water Study
IPFS ID: 6663
Bristol Circle Watermain
Alternative Watermain Alignments - Environmental Features

AECOM

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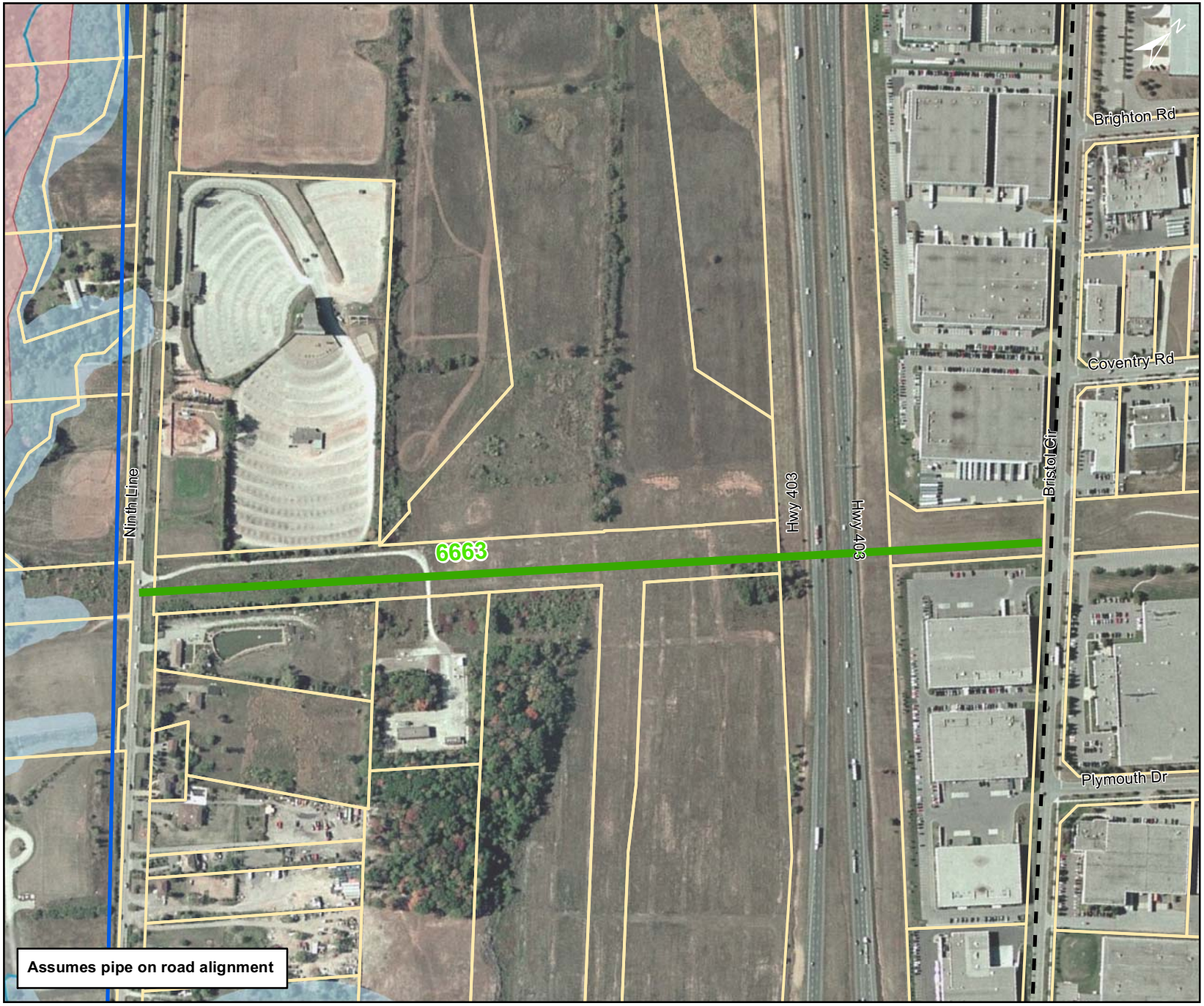
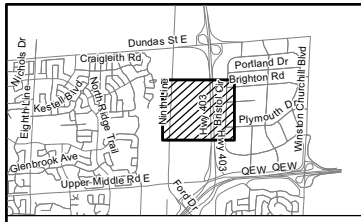
60114062-410-W

Project No. 6663 - Watermain Crossing Highway 403 to Bristol Circle Evaluation Table

Project No. 6663 - Watermain Crossing Highway 403 Alternative Alignments					
Alternatives	**Alternative 1**	**Alternative 1b**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	400 mm Zone O4 watermain on 9th Line from the junction of Dundas St to Bristol Circle. Watermain alignment begins at Dundas St E and Ninth Line, 1 km south along Ninth Line, and east along existing utility corridor, to Bristol Circle	400 mm Zone O3 watermain on an existing Hydro corridor through Winston Park West lands and a Hwy 403 crossing to Bristol Circle. A PRV would be provided at the Zone 3-Zone 4 boundary to supply water to Zone 3 in emergency situations only.	400 mm Zone O4 watermain on 9th Line from the junction of Dundas St to Bristol Circle. Watermain alignment east along Dundas St E, south parallel to Hwy 403 off ramp, and south east to Bristol Circle	400 mm Zone O4watermain on 9th Line from the junction of Dundas St to Bristol Circle. Watermain alignment begins at Dundas St E and Ninth Line, 300 m south along Ninth Line, and east across greenfields to Bristol Circle	400 mm Zone O4 watermain on 9th Line from the junction of Dundas St to Bristol Circle. Watermain alignment east along Dundas St E, southeast paralleling the Hwy 403 on ramp, and east across Hwy 403 to Bristol Circle
Environmental	Alignment crosses through employment lands east of Ninth Line Route does not cross any environmentally sensitive areas and is sparsely vegetated with some trees	Alignment crosses through employment lands east of Ninth Line Route does not cross any environmentally sensitive areas and is sparsely vegetated	Land adjacent to alignment comprised of arterial commercial lands as well as employment lands Route follows the Dundas Street East road alignment	Alignment crosses through employment lands east of Ninth Line Route does not cross any environmentally sensitive areas and is sparsely vegetated	Land adjacent to alignment is comprised of arterial commercial lands as well as employment lands Route does not cross any environmentally sensitive areas and is sparsely vegetated
Technical	South alignment along existing road rights of way and east alignment along existing utility corridor Watermain is approximately 1864 m in length Construction will take along existing road right-of-way and within existing hydro easement Coordination required with Hydro One for construction along existing utility corridor, between Ninth Line and Bristol Circle, south of Dundas St E Engineering difficulties associated with highway crossing could be mitigated with the application of the following techniques: directional drill, tunneling or Jack and Bore One (1) major and one (1) minor crossing (depending on alignments for 2008 projects) No access issues identified	Alignment follows existing road right of way along Ninth Line and future easement east across greenfields.Supplementary supply to localized Zone 3 area. Low pressures would be reconciled. Watermain is approximately 1143 m in length. Construction will take along existing road right-of-way and within existing hydro easement Coordination required with Hydro One for construction along existing utility corridor, between Ninth Line and Bristol Circle, south of Dundas St E Engineering difficulties associated with highway crossing could be mitigated with the application of the following techniques: directional drill, tunneling or Jack and Bore One (1) major and one (1) minor crossing (depending on alignments for 2008 projects) No access issues identified Provides system redundancy and addresses pressure issues on Bristol Circle.	Alignment follows major road alignments, including a provincial highway and a major regional road. Watermain is approximately 1057 m in length Majority of construction along major roads and alongside major highway High potential for conflict with utilities along Dundas St E Potential for hanging watermain off Dundas Street East highway bridge. One (1) major and three (3) minor crossings (depending on alignments for 2008 projects) Potential for access issues due to the need for temporary access to the bridge, closure of one lane would be required	Alignment follows existing road right of way along Ninth Line, and future easement east across greenfields Watermain is approximately 1130 m in length Construction will take place along existing road right of way along Ninth Line. Greenfield construction east across to Bristol Circle. Potential for conflict with utilities Engineering difficulties associated with highway crossing could be mitigated with the application of the following techniques: directional drill, tunneling or Jack and Bore. One (1) major and two (2) minor crossings (depending on alignments for 2008 projects) Potential for access issues as there are currently no access roads available	Alignment follows major road alignments, including a provincial highway and a major regional road. Watermain is approximately 989 m in length Majority of construction along major roads and alongside major highway Potential for conflict with utilities Engineering difficulties associated with highway crossing could be mitigated with the application of the following techniques: directional drill, tunneling or Jack and Bore. One (1) major and three (3) minor crossings (depending on alignments for 2008 projects) Access is moderate but are deemed operable for crossings
Socio / Cultural	Potential for moderate traffic disruptions / disturbance expected along Ninth Line during construction Minimal visual impact as there are few residents within the area. There is a local drive-in theatre east of Ninth Line. Temporary but minimal impact to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will occur outside residential areas	Limited construction along Ninth Line, since watermain along Ninth Line is about 70% shorter than Alt 1 Minimal visual impact as there are few residents within the area Temporary but minimal impact to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will occur outside residential areas	Potential for major traffic disruption / disturbance along Dundas St E, and potentially Hwy 403 off ramp during construction Minimal visual impact as there are few residents within the area Temporary but minimal impact on adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will occur outside residential areas	Moderate traffic disruptions / disturbance expected along part of Ninth Line during construction Minimal visual impact as there are few residents within the area Temporary but minimal impact on adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Moderate potential for impact on nearby landowners, as construction will occur outside residential areas. There will however be a direct impact on nearby ICI owners/tenants.	Potential for major traffic disruption / disturbance expected along part of Dundas St E, potentially Hwy 403, and entrance and exit ramps Minimal visual impact as there are few residents within the area Temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will occur outside residential areas
Financial	Greatest feedermain cost Plus cost of tunneling under Hwy 403	Lower feedermain cost than Alt 1 Total cost estimated at $2.24 M Cost savings in that less piping is required.	Moderate feedermain cost Plus cost of hanging bridge off Dundas St E bridge	Low feedermain cost Plus cost of tunneling under Hwy 403	Lowest feedermain cost Plus cost of tunneling under Hwy 403
Legal / Jurisdictional	Approvals/permits required by: Ministry of Transportation for Hwy 403 crossing Hydro One Networks for use of existing utility corridor	Approvals/permits required by: Ministry of Transportation for Hwy 403 crossing Hydro One Networks for use of existing utility corridor	Coordination and notification required for: Ministry of Transportation for Hwy 403 crossing (off of Dundas St E Bridge)	Coordination required with the following: Ministry of Transportation for Hwy 403 crossing Existing owner just east of Ninth Line (Grand Imports Inc.) for short easement. Ontario Realty Corporation for short easement just west of Hwy 403	Approvals/permits required by: Ministry of Transportation for Hwy 403 crossing Easement requirement just off of Bristol Circle
Overall Score	**Moderate**	**High**	**Moderate**	**Low**	**Moderate**





Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Parcel Fabric

Environmental Features
- Greenbelt
- ANSI
- ESA
- Greenland - A
- Greenland - B
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

60 30 0 60 Meters

Halton Region
Sustainable Halton

Halton Water Study
IPFS ID: 6663
Bristol Circle Watermain
Preferred Alignment

AECOM

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2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	N/A
Version Number:	2	IPFS:	6663
Prepared/Updated By:	AECOM		

Project Description:

400 mm WM from 9th Line on easement to Bristol Circle (Zone O3)

Scope of Work:

The new Zone O3 400 mm WM is required to supplement flow and pressure in the Winston Park Drive Area. Alignment runs from 9th Line within easement to Bristol Circle. Alignment requires crossing of the 407 Highway. Project includes a PRV on Ninth Line which will allow the transfer of water from Zone O4 to O3 during adverse conditions (Fire flow or loss of supply from Upper Middle Road)

Project Justification:

Watermain distribution network upgrade required to service future growth area in eastern Oakville. This project is primarily related to providing additional security of supply to the Bristol Circle area and benefit to the existing users.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
- Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Existing operational constraint and future growth

Project Timing:

In Service:	2015	Design:	2012
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

There is a benefit to existing portion cost. This project is primarily related to providing additional security of supply to the Bristol Circle area and benefit to the existing users.

Property Requirements:

$180,000 Easement required at $200/m

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit	X		
Conservation Permit	X		Req consultation CV/CH
Ministry of Transport - Encroachment Order	X		407 Hwy Crossing
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)
		Staging	_____ (yr)	_____	($)

Sustainable Halton Capital Program

IPFS ID:6665

Project Description: 400 mm WM between Tyandanga Reservoir and Beaufort Reservoir (Zone B4)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Alternatives Evaluation Table
4. Preferred Solution on Map
5. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6665
Prepared/Updated By:	AECOM		

Project Name/Description:

New 400 mm Zone B4 watermain between Tyandaga Reservoir and Beaufort Reservoir.

Project Need:

The Zone B4 watermain between the Tyandaga Reservoir and the Beaufort Reservoir is required to provide supply redundancy to Zone B4. The feedermain will be 400 mm in diameter and approximately 2.75 km in length.

Evaluation:

Alternative alignments were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. Between the Tyandaga (Zone 3) and the Beaufort (Zone 4) Reservoirs, there is a large environmentally sensitive area, Niagara Escarpment lands, and a series of small creeks. Therefore, alternative alignments that minimized crossing these environmental designated areas were considered most favourable.

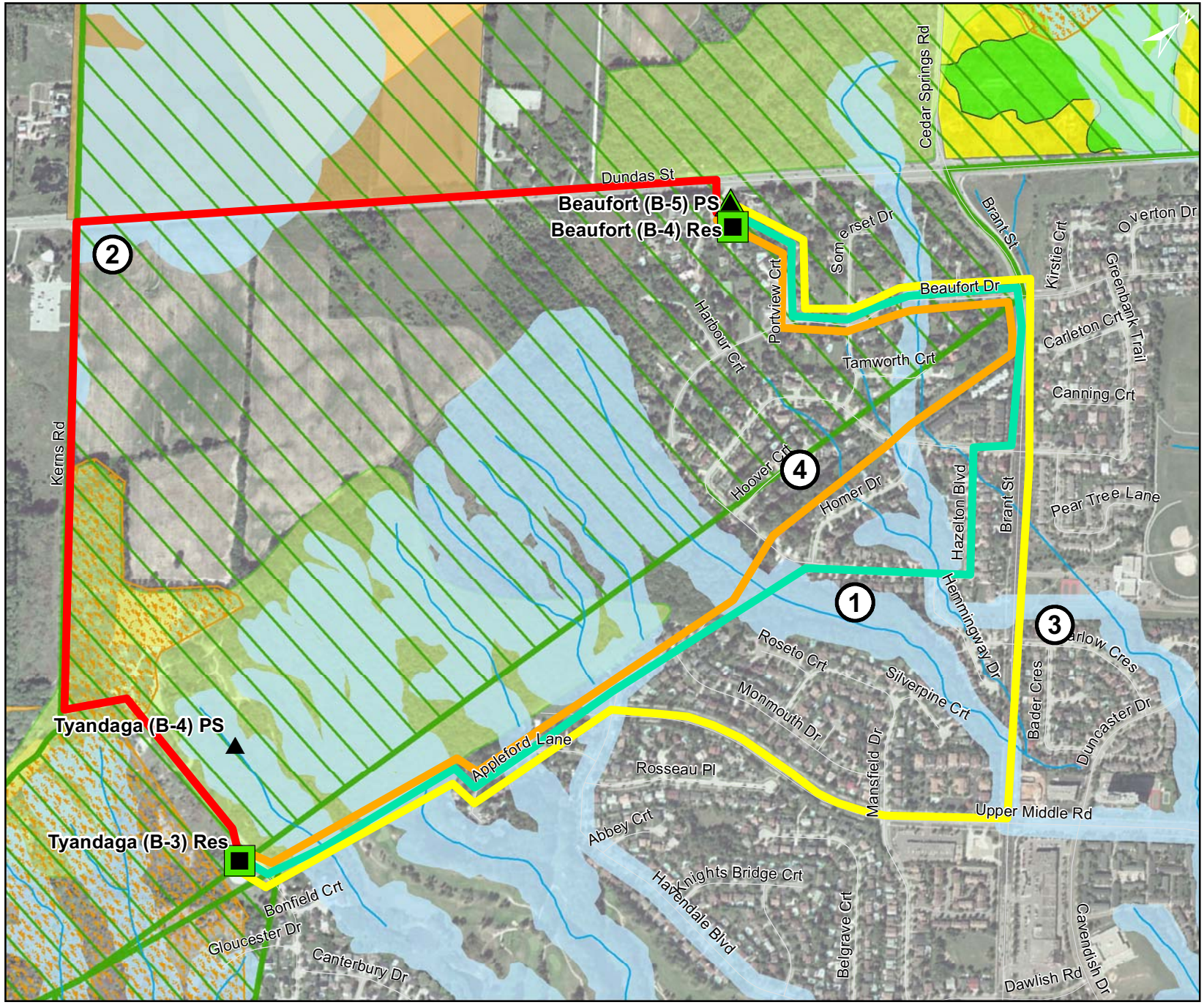
Special Consideration:

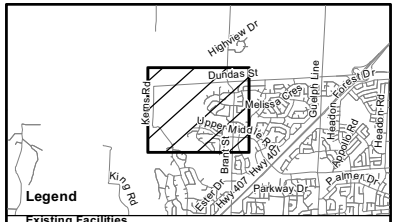
There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Alignment is adjacent to Kerncliff Park, and is adjacent to NEC Natural designated lands.
- Cultural/Heritage: No significant impacts anticipated.
- Transport: N/A.
- Bridge Crossing: No bridge crossings are involved.
- Long Term Servicing: N/A.

Selection of Preferred Servicing Alternative:

Four (4) watermain alignments were evaluated as follows:
- Alternative 1 – Watermain from Tyandaga Zone B3 Reservoir northeast along the edge of Kerncliff Park to Havendale Blvd, east along Havendale Blvd and Hazelton Blvd, north on Brant Street to Beaufort Drive, west on Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir.
- Alternative 2 – Watermain from Tyandaga Zone B3 Reservoir northwest on Kerns Road to Dundas Street, and east on Dundas Street to Beaufort Zone B4 Reservoir.
- Alternative 3 – Watermain from Tyandaga Zone B3 Reservoir north along edge of Kerncliff Park to Upper Middle Road, east on Upper Middle Road to Brant Street, north along Brant Street, west along Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir.
- Alternative 4 – Watermain from Tyandaga Zone B3 Reservoir northeast along edge of Kerncliff Park, on Homer Drive to Brant Street, north on Brant Street, west on Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir.

Alternative 4 was selected as the preferred alignment. This alignment was the most direct route from the Tyandaga Reservoir to the Beaufort Reservoir. The cross sectional profile along the route showed that Alternative 4 was also preferable from a technical standpoint. The project has been classified as Schedule “B” because it involves the crossing of small creeks, is adjacent to an environmentally sensitive area, and has potential for some adverse environmental impacts which will require mitigative measures





Existing Facilities
- Project Area
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir

- ANSI
- ESA
- Greenbelt
- Greenland - A
- Greenland - B
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 55 110 220 Meters

Halton Region
Sustainable Halton

Project 6665 – 400mm Zone B4 Watermain between Tyandaga (Zone B3) Res & Beaufort (Zone B4) Res Alternative Watermain Alignments

AECOM

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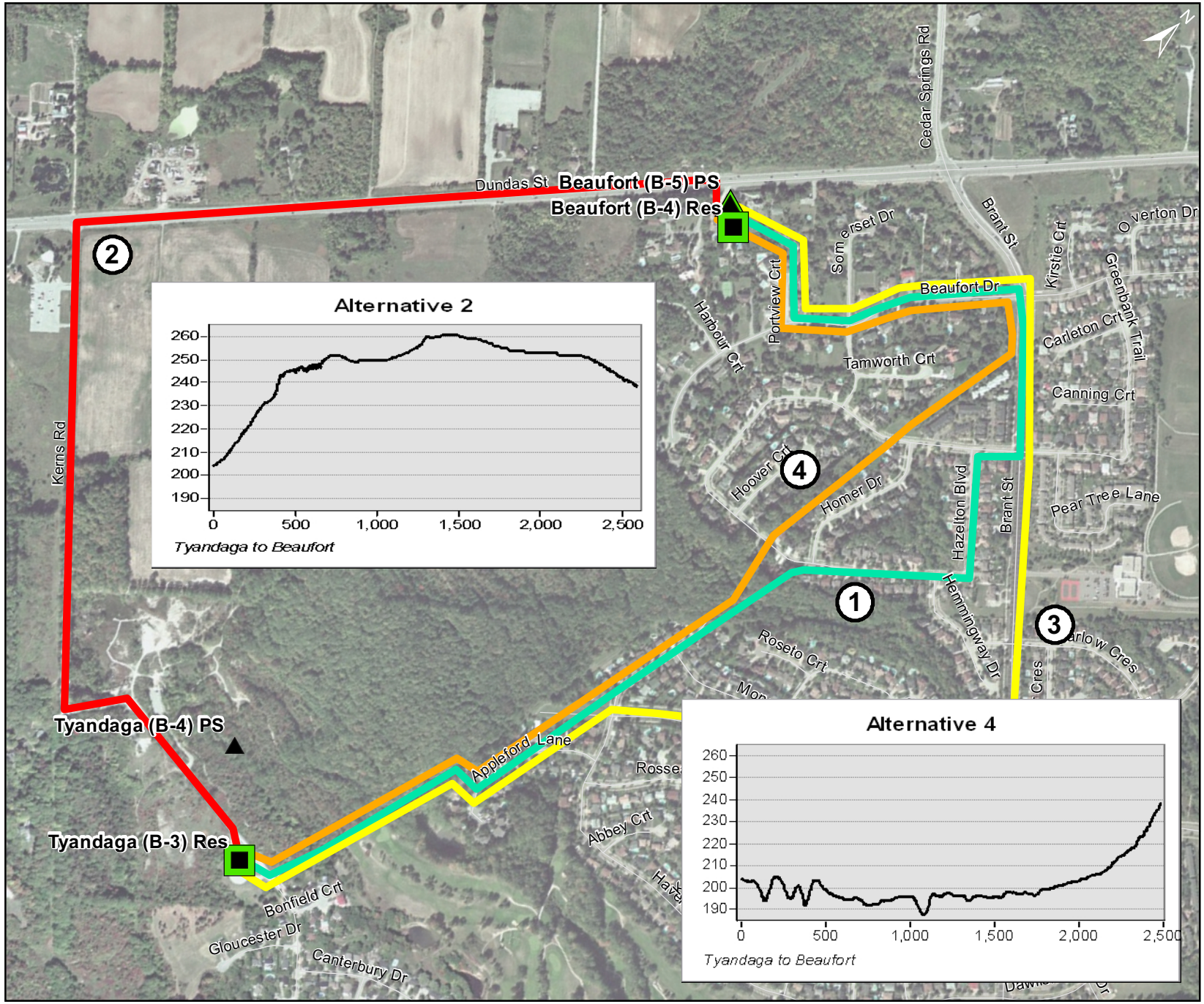
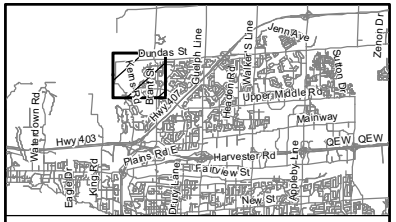




- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Lakes Rivers and Creeks
- ANSI
- ESA
- Greenbelt
- Greenland
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area

110 55 0 110 Meters

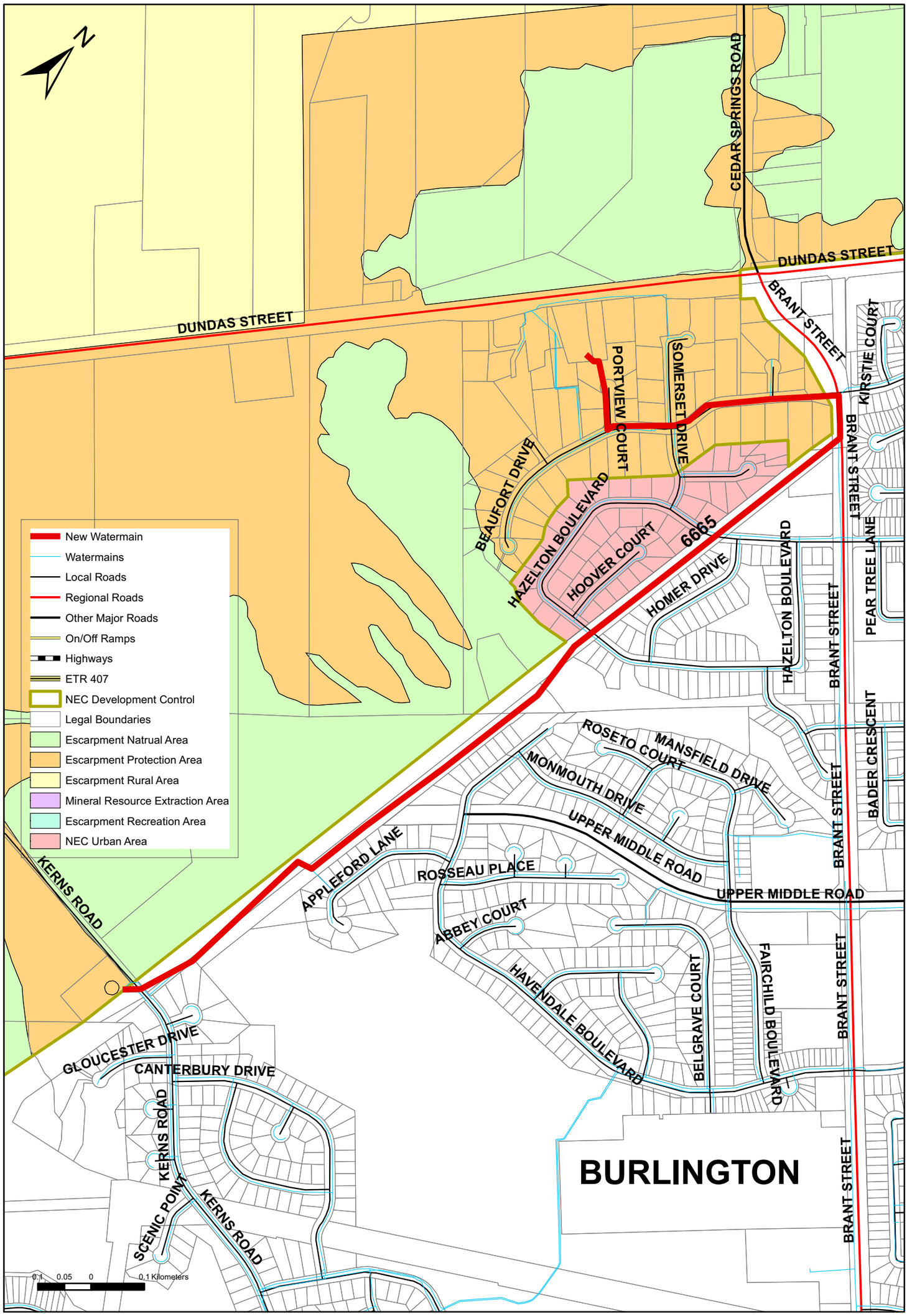
Halton Region
Sustainable Halton

Project 6665 – 400mm Zone B4 Watermain between Tyandaga (Zone B3) Res & Beaufort (Zone B4) Res
Alternative Watermain Alignments & Profiles

AECOM

June 2011
1:10,000
60114062-279-W

Niagara Escarpment Commission Mapping
Water Projects

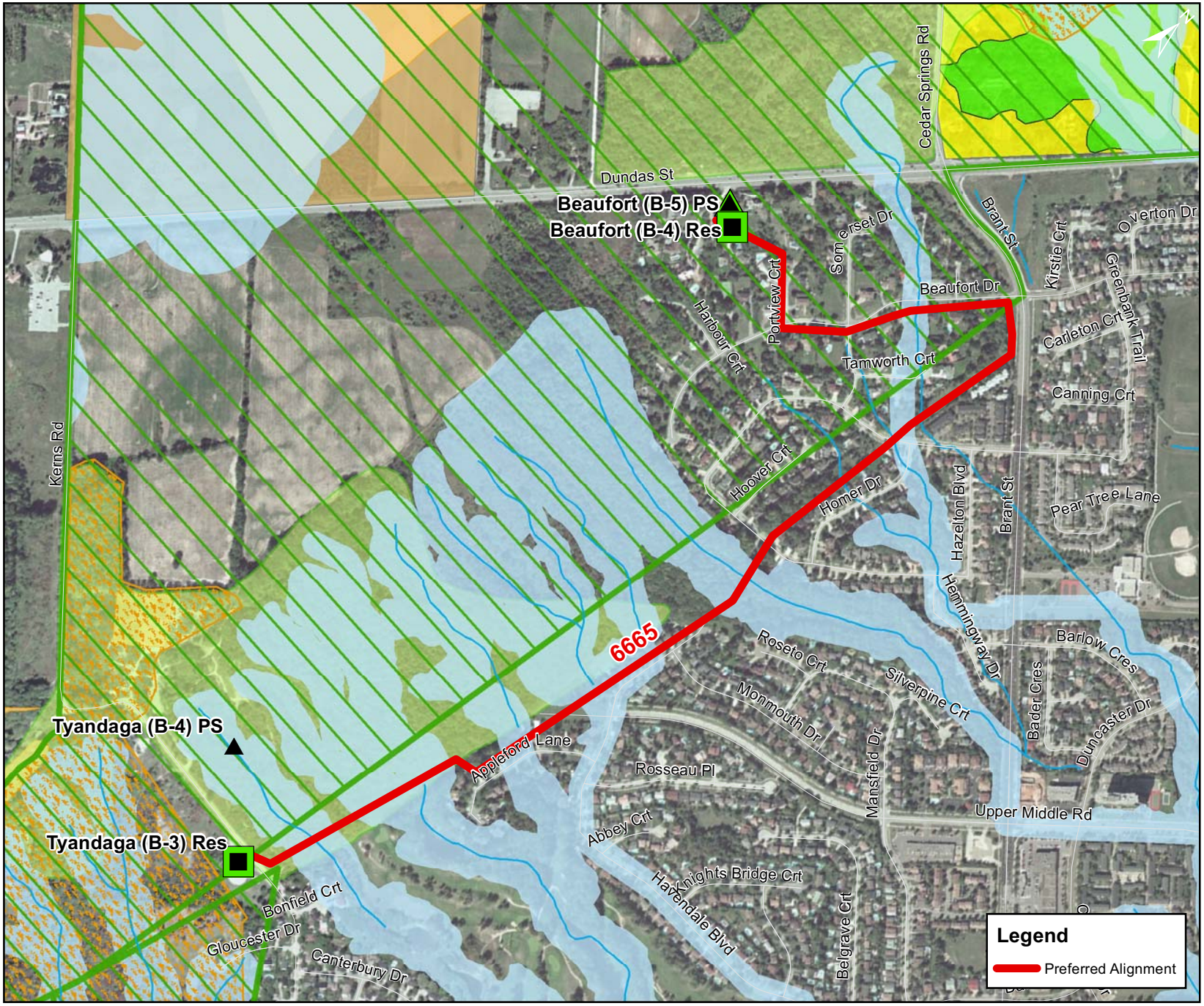


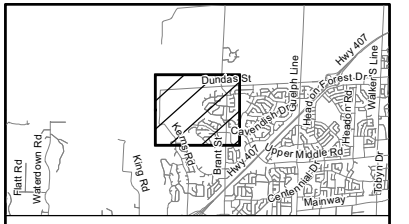
ID 6665: 400mm WM between Tyandaga Reservoir and Beaufort Reservoir

Sustainable Halton Master Plan 2011

Project No. 6665 - Zone B4 400 mm Watermain from Tyandaga Reservoir to Beaufort Reservoir

Project No. 6665 - New 400 mm Zone B4 watermain between Tyandaga Reservoir and Beaufort Reservoir				
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	New 400 mm WM from Tyandaga Zone B3 Reservoir to Beaufort Zone B4 Reservoir Watermain northeast along the edge of Kerncliff Park and utility corridor to Havendale Blvd, east along Havendale Blvd and Hazelton Blvd, north on Brant Street to Beaufort Drive, west on Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir	New 400 mm WM from Tyandaga Zone B3 Reservoir to Beaufort Zone B4 Reservoir from north on Kerns Road to east on Dundas St Watermain north on Kerns Road to Dundas Street, and east on Dundas Street to Beaufort Zone B4 Reservoir	New 400 mm WM from Tyandaga Zone B3 Reservoir from the edge of Kerncliff Park to south east on Upper Middle Rd, along Brant St to Beaufort Zone B4 Reservoir Watermain northeast along the edge of Kerncliff Park and utility corridor to south east on Upper Middle Rd, then north on Brant Street to Beaufort Drive, west on Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir	New 400 mm WM from Tyandaga Zone B3 Reservoir south from Brant St. through woodlands to Beaufort Zone B4 Reservoir Watermain northeast along edge of Kerncliff Park and utility corridor, on Homer Drive to Brant Street, north on Brant Street, west on Beaufort Drive to Portview Court, and northwest to connect to the Beaufort Zone 4 Reservoir
Environmental	Watermain alignment adjacent to NEC Protected lands and ESA (Kerncliff Park), through existing residential area, and Beaufort section through NEC Protected lands One (1) road crossing at Brant St. and Hazelton Blvd Six (6) stream crossings along unnamed Tributaries of Hagar Creek (all permanent) Potential impact to stream, woodlands, and environmentally significant natural habitat lands	Watermain alignment exclusively along existing road right of way, adjacent to ESA (Kerncliff Park) and Greenlands, and through NEC Protected lands Dundas sections run through NEC Protected lands No stream crossings Potential impact to woodlands and environmental significant natural habitat lands	Watermain alignment adjacent to NEC Protected lands and ESA (Kerncliff Park), through existing residential area, and Beaufort section through NEC Protected lands Alignment adjacent to NEC Natural Areas along Kerncliff Park Six (6) stream crossings along unnamed Tributaries of Hagar Creek (all permanent) Potential impact to woodlands and environmental significant natural habitat lands	Watermain alignment adjacent to NEC Protected lands and ESA (Kerncliff Park), through existing residential area, and Beaufort section through NEC Protected lands Alignment adjacent to NEC Natural Areas along Kerncliff Park Seven (7) stream crossings (1 seasonal), along unnamed Tributaries of Hagar Creek Potential impact to woodlands and environmental significant natural habitat lands
Technical	Potential for conflict with utilities along utility corridor and within residential areas Construction along existing roads No topographical constraints along watermain route Moderate watermain length Use of trenchless technology for water crossings	Potential for conflict with utilities along utility corridor and within residential areas Construction along existing road right of way Cross-sectional profile of watermain route shows a localized high point that could present construction and operational challenges for the hydraulic grade line Short watermain length Use of trenchless technology for environmental crossings Potential to coordinate with proposed Halton Region Transportation Master Plan projects	Potential for conflict with utilities, within residential areas Construction along existing roads No topographical constraints along watermain route Longest watermain length Use of trenchless technology for water crossings Potential to coordinate with proposed Halton Region Transportation Master Plan projects	Potential for conflict with utilities along utility corridor and within residential areas Construction along existing roads No topographical constraints along watermain route Shortest watermain length Use of trenchless technology for water crossings
Socio / Cultural	Alignment crosses through low to high residential areas, and commercial employment lands along Brant Sreet Potential for moderate traffic disruptions / disturbance for local traffic on Beaufort Dr, Hazelton Blvd, and Brant St. during construction Temporary impacts to residents during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.	A few residences along watermain route Potential for moderate traffic disruptions / disturbance along Dundas Street and Kerns Road during construction Minor and temporary impacts to any nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Dundas section runs adjacent to properties that have been indentified/listed in Burlington's Heritage Resource Inventory Additional mitigative actions will be taken to ensure the protection of Heritage Resource properties identified along the construction route	Alignment crosses through low to high residential areas, and commercial employment lands along Brant St Greater part of construction along Upper Middle Road and Brant Street - potential for traffic disruptions / disturbance expected Temporary impacts to residents during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.	Alignment crosses through low to high density residential areas Potential for traffic disruptions / disturbance for local traffic near Beaufort Dr, Homer Dr, and Havendale Blvd during construction Temporary impacts to residents during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations.
Financial	Moderate watermain distance	Short watermain distance	Longest watermain distance	Shortest watermain distance
Legal / Jurisdictional	Approvals / permits required by: Halton Region Conservation Authority for stream crossings Niagara Escarpment Commission for NEC Protected land crossings Coordination required with TransCanada Pipeline for use of existing utility corridor	Approvals / permits required by: Halton Region Conservation Authority and Niagara Escarpment Commission for crossing of NEC Protected areas Ministry of Natural Resources for Greenland areas	Approvals / permits required by: Halton Region Conservation Authority for stream crossings Niagara Escarpment Commission for NEC Protected land crossings Coordination required with TransCanada Pipeline for use of existing utility corridor	Approvals / permits required by: Halton Region Conservation Authority for stream crossings Niagara Escarpment Commission for NEC Protected land crossings Coordination required with TransCanada Pipeline for use of existing utility corridor
Overall Score	**Moderate**	**Low**	**Moderate**	**High**





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- ANSI
- ESA
- Greenbelt
- Greenland - A
- Greenland - B
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

130 65 0 130 Meters

Halton Region
Sustainable Halton

400 mm Zone B4 Watermain from Tyandaga Reservoir to Beaufort Reservoir Preferred Watermain Alignment Project No. 6665

AECOM

August 2011
1:10,000
60114062-228-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	N/A
Version Number:	2	IPFS:	6665
Prepared/Updated By:	AECOM		

Project Description:

400 mm WM between Tyandanga Reservoir and Beaufort Reservoir (Zone B4)

Scope of Work:

The new Zone B4 400 mm watermain will be 2752 m long and will be constructed between Tyandanga Reservoir and Beaufort Reservoir (Twin existing WM). The project will require environmental crossings. Watermain to be partially constructed with existing road right of way and partially in new easement lands. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies.

Project Justification:

Watermain distribution network upgrade required to service existing service area. The existing transfer capacity to the Beaufort Reservoir and in the Burlington (Zone B4) is currently constrained. Project will alleviate constraint and provide improved level of service.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Existing operational constraint and infill growth.

Project Timing:

In Service:	2016	Design:	2012
Class EA:	B	Construction:	2014
		Land:	2012

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

There is a benefit to existing portion cost. There are existing constraints with the transfer capacity to the Beaufort Reservoir and in the Burlington B4 pressure zone. This project is required to support existing demands and future demands in Burlington. Demand percentage based on Burlington existing service area.

Property Requirements:

Easement required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Req consultation with NEC/ NEC Development Permit Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Conservation Halton
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6686

Project Description: Bulk Water Stations on New Sites

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
4. Alternatives Evaluation Table
5. Preferred Solution on Map
6. Tracking Sheet

Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	August 25 2011	Project Number:	Overview
Version Number:	2	IPFS:	6686
Prepared/Updated By:	AECOM		

Project Name/Description:

Bulk Water Stations on New Sites

Project Need:

The expansion to the existing Harrison Court and the new Upper Middle Road Bulk Water Stations are required to meet future infill/intensification growth in Oakville and Burlington. The construction of the new site is driven by the current access/conflicting land issues with the current temporary sites.

Evaluation:

Alternative expansion sites were evaluated based on the proximity to the existing site, technical suitability, and the existing land use. The new Harrison Court site was evaluated by AECOM and the new Upper Middle Road by the RMOH.

Special Consideration and MNR Screening:

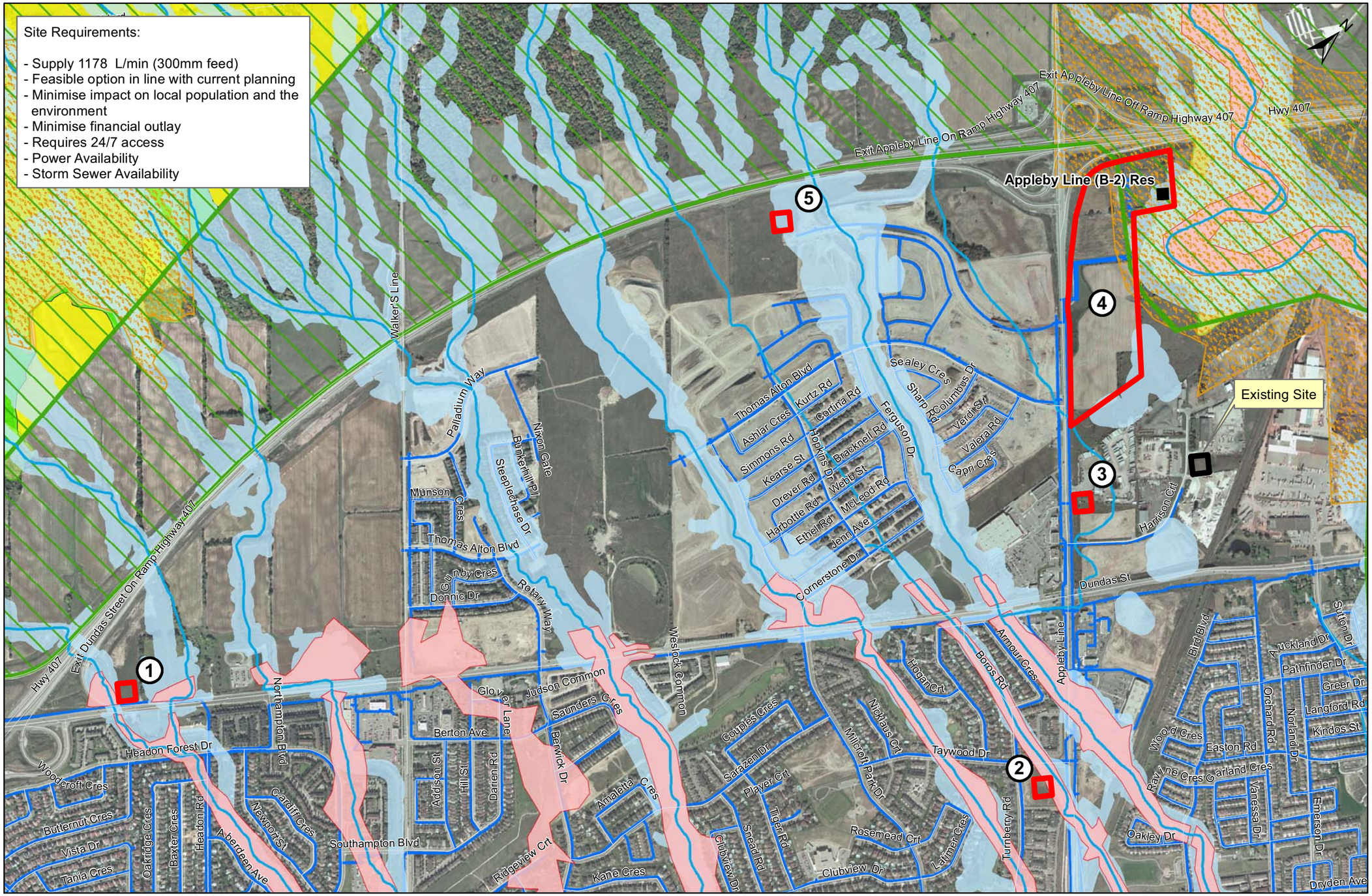
There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site is located within an employment area and is not adjacent to any environmental designated lands.
- Cultural/Heritage: No significant impacts anticipated.
- Transport: Not applicable.
- Bridge Crossing: Not applicable.
- Long Term Servicing: Trigger is operational.
- MNR Screening: Not applicable (no identified endangered species on site).

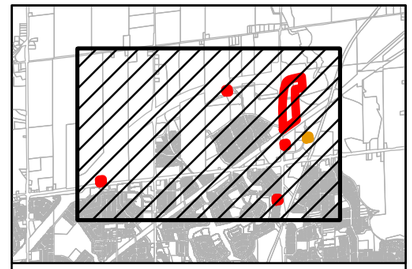
Selection of Preferred Servicing Alternative:

The preferred sites for Harrison Court and Upper Middle Road are located within or directly adjacent to the existing site limits. The projects have been classified as Schedule "B" as they are expansions to existing facilities and will require the acquisition of new land.

Site Requirements:

- Supply 1178 L/min (300mm feed)
- Feasible option in line with current planning
- Minimise impact on local population and the environment
- Minimise financial outlay
- Requires 24/7 access
- Power Availability
- Storm Sewer Availability





- Project Area

Legend

Existing Water Facilities

- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Existing Watermain
- Existing Site
- Alternative Bulk Water Site
- Lakes, Rivers and Creeks
- ANSI
- ESA
- Greenland - B
- Greenland - A
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Grand River Conservation Authority - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Conservation Halton - Regulation Limit

0 110 220 440 Meters

Halton REGION

Sustainable Halton
Water and Wastewater Master Plan

Project 6686
Harrison Court Bulk Water Site Alternatives

AECOM

1:12,000
October, 2011
File: 60114062-361-W

Public Works Department
MEMORANDUM
Water Services

TO: Chris Campbell and Tom Ferguson, AECOM

FROM: Jacek Pawlus, Project Manager

DATE: September 9, 2011

RE: Sustainable Halton - Bulk Water Servicing Strategy

1.1 Introduction

Halton Region has identified the need to take an integrated approach to the short and long term servicing to manage its bulk water stations program. As part of the 2011 Sustainable Halton Water and Wastewater Master Servicing Plan (**Master Servicing Plan**), the anticipated bulk water demand, bulk water station improvements and expansions, preferred bulk water locations and cost estimates (see Capital Plan) for any necessary capital infrastructure were identified.

The overall goals of the Bulk Water Servicing Strategy within the context of the Master Servicing Plan are outlined below:

1. Develop criteria to evaluate existing and new sites.
2. Evaluate the existing bulk water station sites and units.
3. Assess the need for relocating existing bulk water station sites.
4. Identify and evaluate new bulk water station sites.
5. Assess the need for additional new bulk water station sites.
6. Identify a preferred Bulk Water Stations Servicing Strategy to benefit existing users and projected growth.
7. Determine Class Environmental Assessment Schedule types for each new bulk water station site.
8. Provide documentation to satisfy any schedule B projects in the Master Servicing Plan.

1.2 Background Information

Halton Region currently has nine bulk water stations. Seven of the nine stations utilize a pre-paid smart card technology while two stations operate on coins. Some bulk water station sites are located with other Halton Region assets such as elevated tanks, reservoirs and linear infrastructure, while other stations have been constructed on the 'right of way' or within easements. Each bulk water station unit can provide two types of service connections: a top feed or a bottom feed.

Table 1 below describes the current type of service connection at each bulk water station unit and the type of payment offered:

Station Name	Type of Service Connection		Type of Payment	
	Bottom Feed	Top Feed	Card Reader	Coin Operated
Georgetown				
Todd Rd.	2	0	✓	
Milton				
Lawson Rd.	1	0	✓	
Nipissing Rd.	0	1		✓
Santa Maria	2	0	✓	
Oakville				
Burnhamthorpe Rd. – south unit	1	1	✓	
Burnhamthorpe Rd. – north unit	2	0	✓	
Upper Middle Rd.	0	1		✓
Burlington				
Harrison Crt.	1	0	✓	
Guelph Line	0	2	✓	
Plains Rd.	2	0	✓	

Additional information regarding the existing bulk water stations/locations is available at the Halton Region's website at http://www.halton.ca/cms/one.aspx?portalId=8310&pageId=8587.

2.0 Evaluation Criteria

2.1 Evaluation of Existing and New Sites

The criteria listed below were used to evaluate and determine the preferred Bulk Water Servicing Strategy for existing and new sites.

- Customer usage
  - Low usage
    - existing sites to be relocated
  - Moderate usage
    - existing sites may or may not require relocation

- High usage
  - Existing sites to be upgraded to reduce waiting times and to improve safety

- Transportation Impacts
  - High traffic disruption sites
    - existing sites to be relocated
  - Moderate traffic disruption sites
    - may or may not require relocation
  - Low traffic disruption sites
    - no changes required

  In addition to the traffic disruption evaluation, the following conditions are also preferred:
    - Sites to be in close proximity to major roads and highways
    - Water trucks to have safe and easy access to and from the site
    - Water trucks to have a safe waiting area
    - Sites to utilize existing/future signalization

- Social Impacts
  - Preferred:
    - Sites within existing ICI area
    - Sites within close proximity to residential growth area
    - Sites in or within close proximity to ICI growth area
    - Sites in or within close proximity to the urban growth center
    - Sites to be fenced for safety and to reduce vandalism

  - Not preferred:
    - Sites within existing or future residential areas
    - Sites that are not in close proximity to future growth areas

- Legal/Jurisdictional
  - Preferred:
    - Sites currently owned by Halton Region
    - Sites that will be acquired by Halton Region for other future projects
    - Sites with dedicated road access

  - Not preferred:
    - Sites where land acquisition is required
    - Sites within the road right-of-way

- Permanent/Portable Bulk Water Units
  - Preferred:
    - Permanent bulk water station units
    - Smart Card readers
  - Not Preferred:

- Portable bulk water station units
- Coin operated

❖ Environmental
- ➢ Preferred:
  - Sites within existing disturbed areas (eg. existing pump stations, reservoirs, etc.)
  - Sites outside of environmental features including but not limited to: water courses, ANSIs, ESAs, wetlands, CVC, CH, GRCA and NEC regulation limits and Greenbelt

- ➢ Not preferred:
  - New sites within greenfield areas
  - New sites within environmental features

2.2 Evaluation of Class EA Schedule B Projects:

In addition to the criteria used above, a financial and technical review were also carried out to satisfy the Schedule B projects.

❖ Financial
- ➢ Preferred:
  - Sites within existing or future Halton Region owned infrastructure sites (to reduce capital costs)

- ➢ Not preferred:
  - New sites where land acquisition is required
  - New sites where existing infrastructure cannot be utilized

❖ Technical
- ➢ Preferred:
  - Sites within close proximity to utilize existing infrastructure

- ➢ Not Preferred:
  - Sites where new watermains are required to service the station

3.0 Preferred Bulk Water Stations Strategy

Please refer to **Table 2**: "Sustainable Halton – Evaluation Matrix" for the preferred Bulk Water Servicing Strategy and the enclosed Bulk Water Servicing Strategy map. The matrix is divided by municipality/town. Each existing and alternative site has been evaluated and colour coded:
- red – site is not preferred
- yellow – site requires further analysis
- green – preferred site

The "Proposed Works" column provides the description of upgrades required at each existing site, the alternative sites and the preferred alternative.

In summary, 6 of the existing 9 bulk water stations are recommend to be relocated. This includes:

- Todd Rd. BWS is to be relocated to the new Todd Rd. Water Tower (work is currently in progress)
- Lawson Rd. BWS is to be relocated to BWS 2 (future zone 4 reservoir)
- Nipissing Rd. BWS to be relocated to BWS 5 (future wastewater pump station)
- Santa Maria BWS to be relocated to BWS 10 (existing Waste Management site)
- Upper Middle Rd. BWS to be relocated to BWS 16 (existing Davis Pump Station)
- Harrison Crt. BWS to be relocated to BWS 15 (Landmark Structures property)

The remaining 3 sites (that are not being recommended to be relocated) are to have the following upgrades:

- Burnhamthorpe Rd. BWS – the northern bulk water station unit is to be retrofitted into an island unit (i.e. one bottom feed on each side of the unit) to increase the capacity of the unit and to maximize the available space. Some site changes need to be made to accommodate the island unit.
- Guelph Line BWS – an additional one bottom feed unit to be installed to provide a bottom feed connection (as the site currently only has top feed connection).

In addition to the above, all existing bulk water station units (except for the unit at Guelph Line BWS and the southern unit at Burnhamthorpe Rd. BWS), are required to be rebuilt to satisfy NFS and AWWA regulations and standards.

In addition to upgrades at existing bulk water station sites and new larger more efficient sites, the need for additional sites was also conceptually reviewed. Since the Town of Halton Hills (Acton) was the only municipality (town) that does not currently have a bulk water station, it was recommended that a portable unit (BWS 1) be placed within the future lands of the North Acton Well site. The feasibility of a bulk water station in Acton depends on the available capacity of the groundwater system. Halton Region recognizes the potential need in provide additional bulk water station sites to meet the growing demand if surplus water servicing capacity is available. This strategy will be constantly reviewed in accordance with the growth patterns to provide bulk water users with the most efficient and effective services.

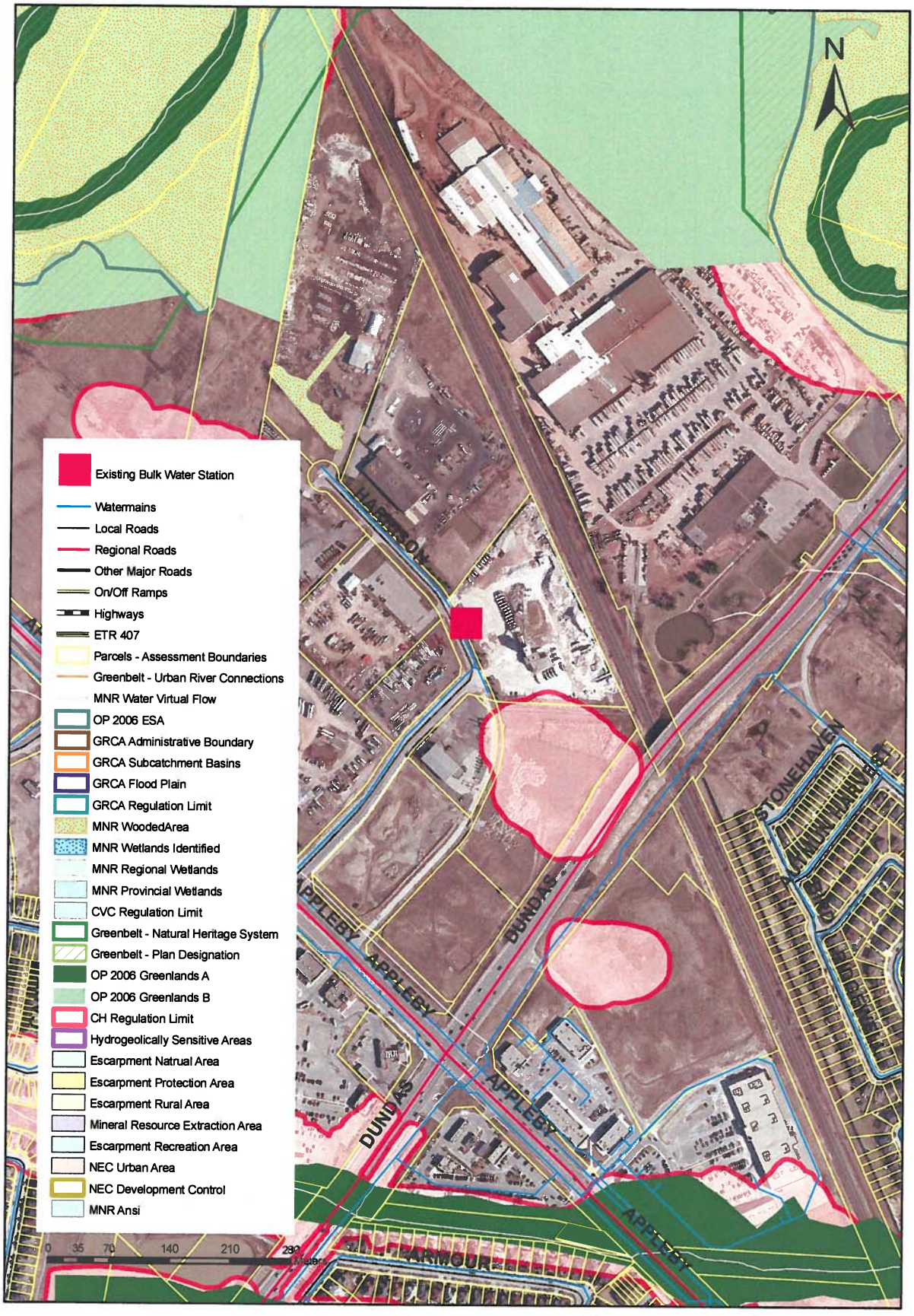
4.0 Schedule B Projects

Schedule B bulk water station projects have been classified as any project where land acquisition is required solely for the purpose of a new bulk water station. As per the preferred Bulk Water Servicing Strategy (section 3.0), only the Harrison Crt. bulk water station has been classified as a schedule B project. All other new stations will be located within currently disturbed lands (pump stations, reservoirs, etc.) or land that will be acquired for the purposes of new infrastructure that were triggered in the current Master Servicing Plan.

Please refer to **Table 3**: "Sustainable Halton – Bulk Water Servicing Strategy Evaluation Matrix – Schedule B," and the enclosed mapping (showing the environmental features) of the alternatives to review the evaluation of the alternative sites.

O:\WATER PLANNING\CLASS_EAs\PR2502A - Bulk Water Servicing\2A - External Corresp\AECOM\MSP Memo\2011-09-08 BWS MSP Memo (2).doc

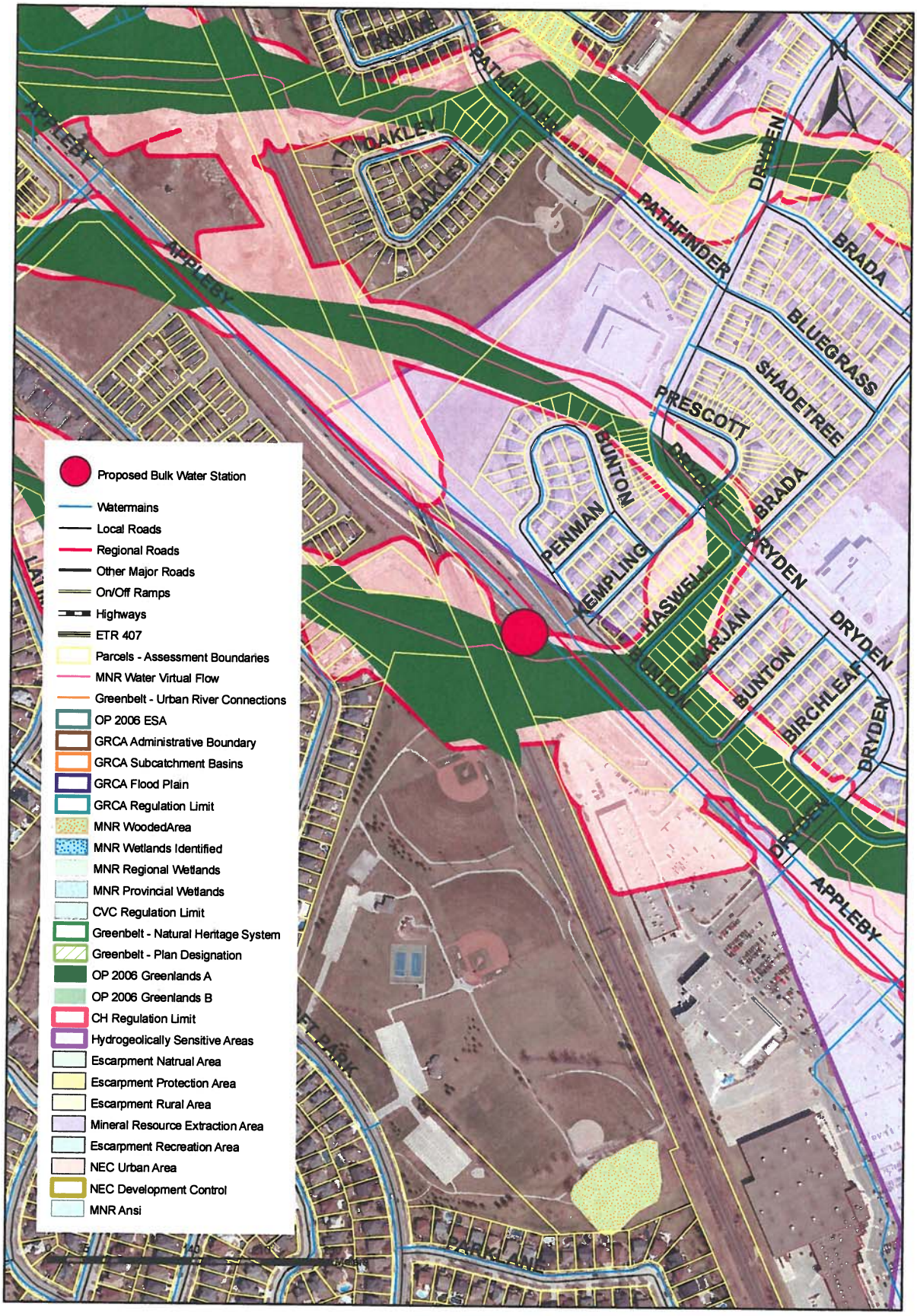
Bulk Water Station
Harrison Court



Halton REGION

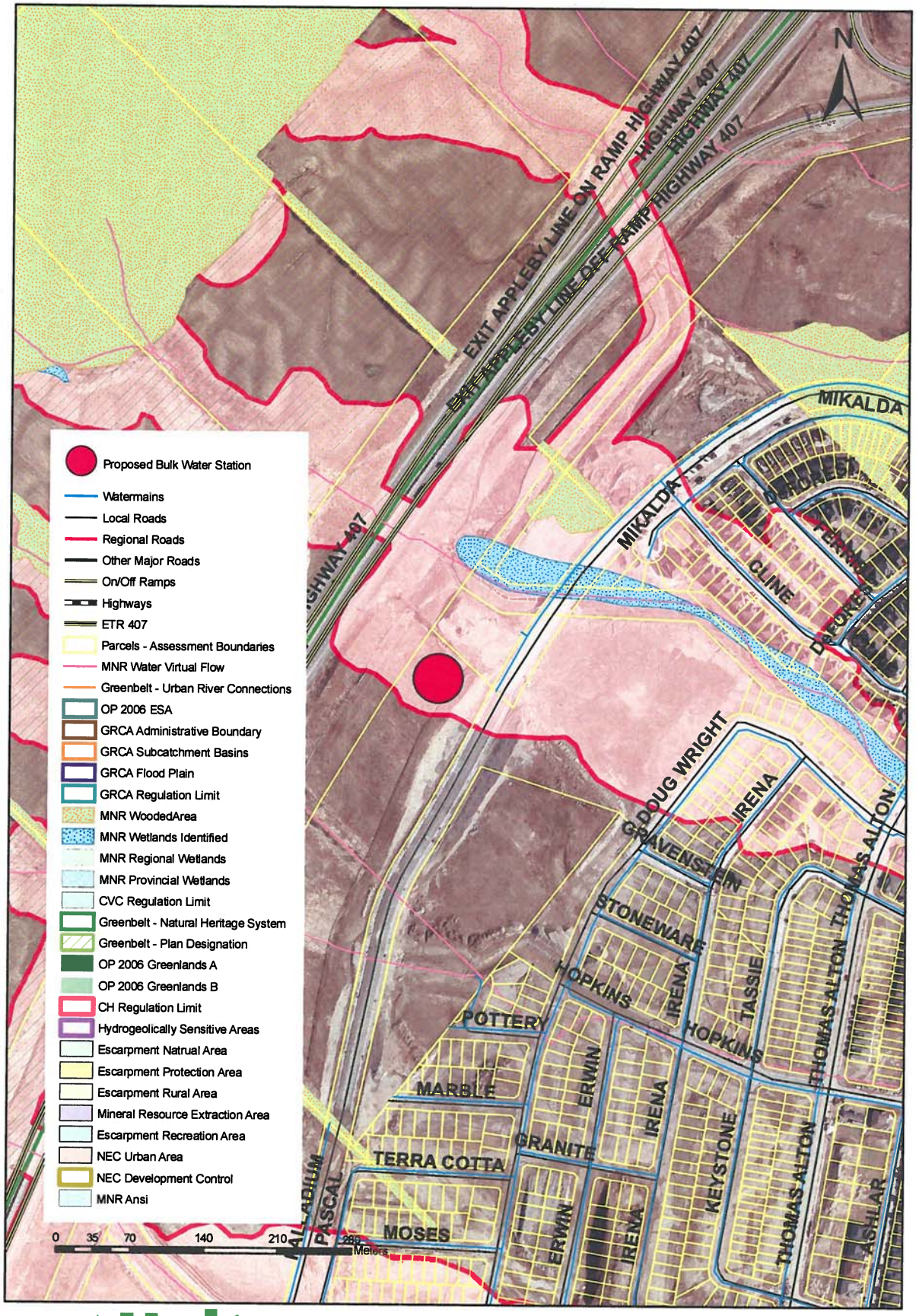
Existing Site

Bulk Water Station
Alternative 1 - BWS 13



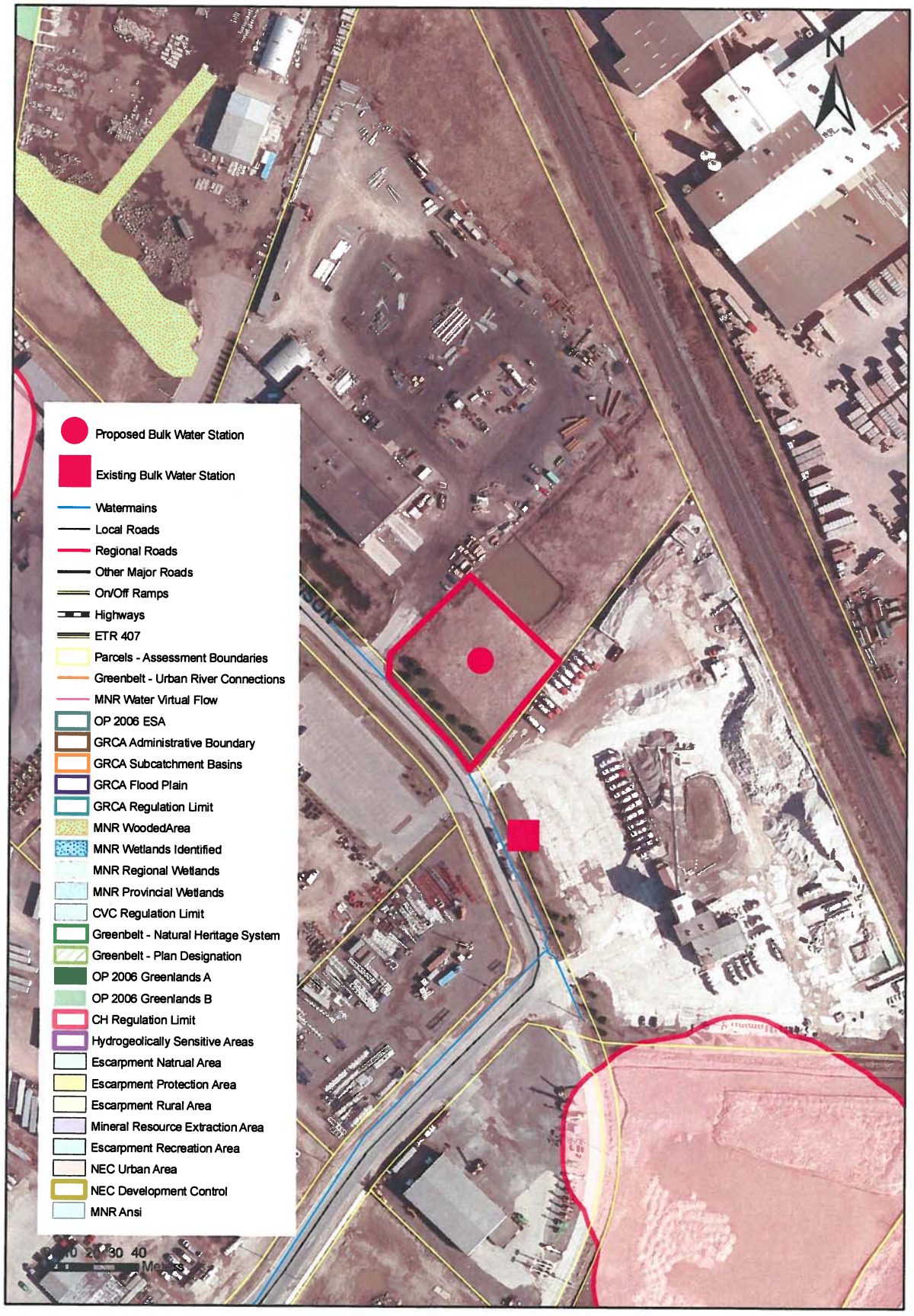
Halton REGION

Bulk Water Station
Alternative 2 - BWS 14



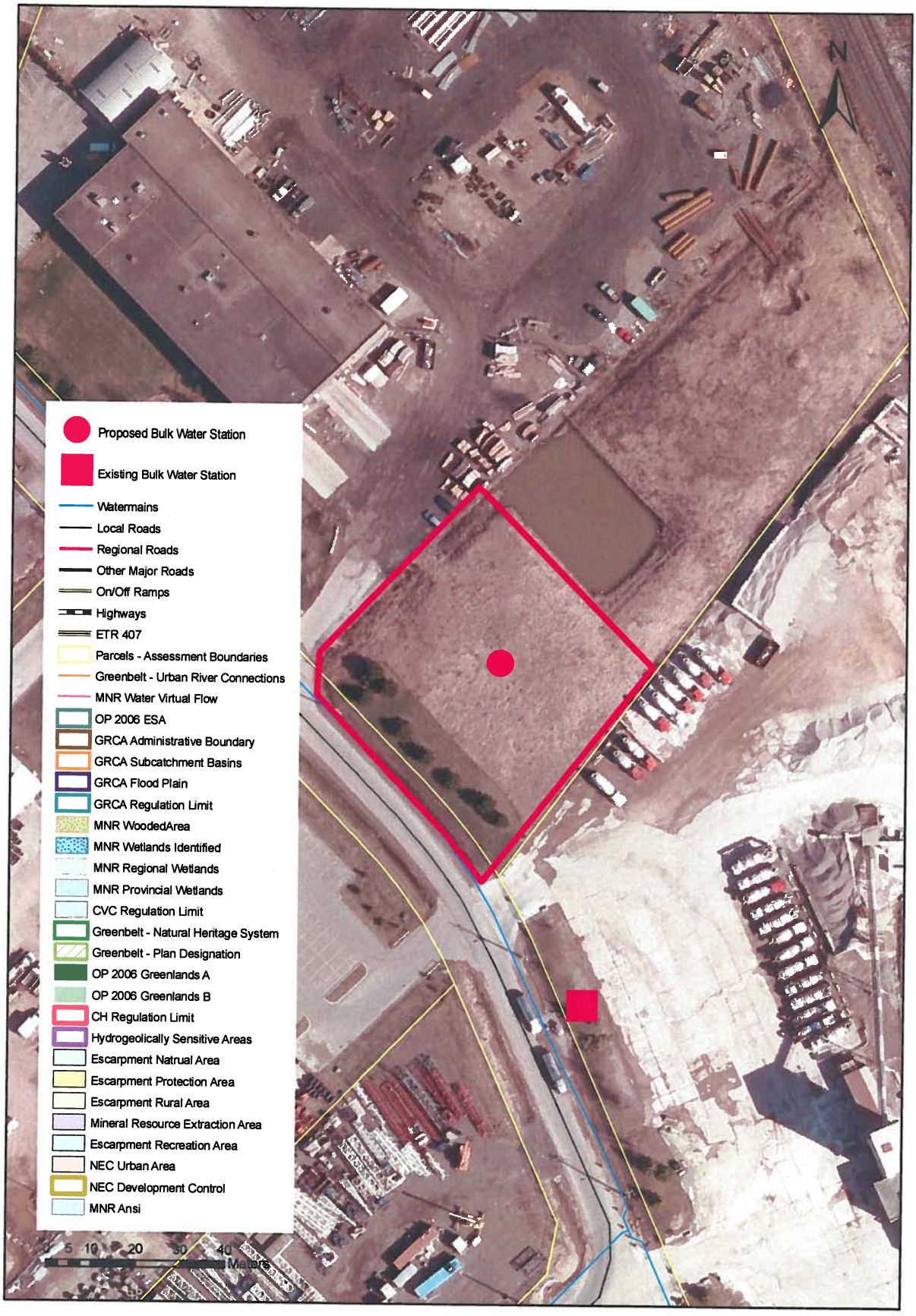
Halton REGION

Bulk Water Station
Alternative 3 - BWS 15



Halton REGION

Bulk Water Station
Preferred Alternative 3 - BWS 15



Halton REGION

TABLE 2 SUSTAINABLE HALTON - BULK WATER SERVICING STRATEGY EVALUATION MATRIX

Municipality	BULK WATER STATIONS (BWS)	Address/Area	Permanent/Portable Bulk Water Units	Preferred Option Colour Coding	Proposed Works	Natural	Legal/Jurisdictional	Transportation	Customer Usage	Social
Existing Bulk Water Station Sites:										
Georgetown	Todd Rd. BWS	15 Todd Rd.	Permanent		Relocate to the New Georgetown Water Tower (work currently in progress)	Existing Site	Existing site; owned by Halton Region	Low traffic disruption; close proximity to HWY 7	Low	Within existing ICI area and future intensification growth area; close proximity to future residential growth areas
Milton	Lawson Rd. BWS	8189 Lawson Rd.	Portable		Relocate to BWS2, BWS3 or BWS4; BWS2 is preferred	Existing Site	Existing site; owned by Town of Milton (within the road right-of-way)	High traffic disruption to local businesses; poor access	High	Within existing ICI area; close proximity to ICI and future intensification growth areas
	Nipissing Rd. BWS	123 Nipissing Rd.	Permanent		Relocate to BWS5 or BWS6; BWS5 is preferred	Existing Site	Existing site; owned by Town of Milton (within the road right-of-way)	Low traffic disruption	Low	Within existing residential area, future intensification growth area and future urban growth center;
	Santa Maria BWS	785 Santa Maria Blvd.	Portable		Relocate to BWS7, BWS8, BWS9 or BWS10; BWS10 is preferred	Existing Site	Existing site; owned by Town of Milton (within the road right-of-way)	High traffic disruption; poor access	High	Within existing residential area and future intensification growth area
Oakville	Burnhamthorpe Rd. BWS	4030 Trafalgar Rd.	Permanent		Remain in current location; convert northern unit to an island unit; site changes to allow for island unit access	Existing Site	Existing site; owned by Halton Region	Low traffic disruption; close proximity to HWY 407	High	Within existing ICI area; close proximity to residential growth areas
	Upper Middle Rd. (UMR) BWS	2273 Trafalgar Rd.	Permanent		Relocate to BWS11, BWS12 or 16; BWS16 is preferred	Existing Site	Existing site; owned by Halton Region	Moderate traffic disruption; high traffic volumes along Trafalgar; traffic safety issues (minimal length to allow for truck acceleration)	Low	Within existing residential area; close proximity to future intensification growth area
Burlington	Guelph Line BWS	1499 Guelph Line	Permanent		Remain in current location; add a single bottom feed unit	Existing Site	Existing site; owned by Hydro One Inc.	Moderate traffic disruption; high traffic volumes along Guelph Line	Moderate	Within existing residential area; close proximity to existing ICI area and future intensification growth areas
	Plains Rd. BWS	1100 Plains Rd. W.	Permanent		Remain in current location; upgrades required to existing unit to meet standards/regulations	Existing Site	Existing site; owned by City of Burlington (within the road right-of-way)	Low traffic disruption; close proximity to HWY 403	High	Within existing residential area; close proximity to existing ICI area and future intensification growth area
Alternative Bulk Water Station Sites:										
Acton	BWS1	At Future New North Acton Well Site, along RR25, between No. 32 Side Rd. and HWY 7	Portable		New site to service Acton area	Site location is dependent on New Acton Well Site; within Greenbelt; potential to be within close proximity to MNR wooded area and CVC regulation limits	Land acquisition required	Low traffic disruption	n/a	At future well site; close proximity to existing ICI area; potential to be within or within close proximity to archealogical signficant area
Georgetown	BWS2	At Future Zone 4 Reservoir, along Trafalgar Rd. between No. 5 Side Rd. and No. 10 Side Rd.	Permanent		Potential new location for Lawson	Future disturbed area (Zone 4 reservoir); potential to be within or within close proximity to MNR wooded area and CH regulation limits	Utilize future Zone 4 reservoir site; to be owned by Halton Region	Low traffic disruption; potential to utilize future signalization	n/a	At future reservoir site; close proximity to future residential and ICI growth areas; potential to be within or within close proximity to archealogical signficant area
Milton	BWS3	At Future Wastewater Pump Station, along Steeles Ave., between Winston Churchill Blvd. and Tenth Line	Permanent		Potential new location for Lawson	Future disturbed area (wastewater pump station); potential to be within or within close proximity to CVC regulation limits	Utilize future wastewater pump station site; to be owned by Halton Region	Low traffic disruption; close proximity to HWY 401 and HWY 407	n/a	At future wastewater pump station site; close proximity to existing ICI area; within future ICI growth area; potential to be within or within close proximity to archealogical signficant area
	BWS4	At Future Wastewater Pump Station, along Steeles Ave., between Ninth Line and Eight Line	Permanent		Potential new location for Lawson	Future disturbed area (wastewater pump station); potential to be within or within close proximity to CH regulation, MNR wooded area limits and Greenlands A	Utilize future wastewater pump station site; to be owned by Halton Region	Low traffic disruption; close proximity to HWY 401	n/a	At future wastewater pump station site; within existing ICI area and future ICI growth area; potential to be within or within close proximity to archealogical signficant area
	BWS5	At Future Wastewater Pump Station, along Fifth Line, between Derry Rd. and Britannia Rd.	Permanent		Potential new location for Nipissing	Future disturbed area (wastewater pump station); potential to be within or within close proximity to MNR wooded area, CH regulation limits, watercourse and Greenlands A	Utilize future wastewater pump station site; to be owned by Halton Region	Low traffic disruption	n/a	At future wastewater pump station site; within existing ICI area and future residential growth area; potential to be within or within close proximity to archealogical signficant area
	BWS6	At Future Wastewater Pump Station, along Britannia Rd., between James Snow Pkwy. and Fourth Line	Permanent		Potential new location for Nipissing	Future disturbed area (wastewater pump station); potential to be within or within close proximity to CH regulation limits, watercourse and Greenlands A	Utilize future wastewater pump station site; to be owned by Halton Region	Low traffic disruption	n/a	At future wastewater pump station site; within future residential growth area; potential to be within or within close proximity to archealogical signficant area
	BWS7	At Existing Mid-Block Wastewater Pump Station, along Louis St. Laurent Ave. between Thompson Rd. and RR25	Permanent		Potential new location for Santa Maria	Existing disturbed area; potential to be within MNR wooded area and CH regulation limits; close proximity to watercourse and Greenlands A	Existing site; owned by Halton Region	Low traffic disruption	n/a	At existing wastewater pump station site; within existing residential area; close proximity to future ICI, residential and intensification growth areas
	BWS8	At Existing Tremaine Wastewater Pump Station, along Future Louis St. Laurent Ave., between Britannia Rd. and Derry Rd.	Permanent		Potential new location for Santa Maria	Existing disturbed area; potential to be within CH regulation limits; close proximity to MNR Regional wetlands and watercourse	Existing site; owned by Halton Region	Low traffic disruption; limited footprint size	n/a	Close proximity to future ICI and residential growth areas
	BWS9	Along Tremaine Rd., between Britannia Rd. and Lower Base Line	Permanent		Potential new location for Santa Maria	Greenfield area; potential to be within close proximity to CH regulation limits and watercourse	Land acquisition required	Low traffic disruption	n/a	Within future ICI area
	BWS10	At Existing Waste Management Site, along RR25, between Britannia Rd. and Lower Base Line	Permanent		Potential new location for Santa Maria	Existing disturbed area; potential to be within close proximity to CH regulation limits and watercourse	Existing site; owned by Halton Region	Low traffic disruption; potential to utilize future signalization	n/a	At existing waste management site; close proximity to future residential and ICI growth areas
Oakville	BWS11	At Existing Oakville Public Works Yard (1150 Cornwall Rd.)	Permanent		Potential new location for UMR	Existing disturbed area; entirely within Hydrogeologically sensitive area	Land acquisition required;	Low traffic disruption; close proximity to HWY 403; limited footprint size	n/a	Within existing ICI area; close proximity to future intensification growth areas and urban growth center
	BWS12	At Existing Oakville Public Works Yard (1136 South Service Rd. W.)	Permanent		Potential new location for UMR	Existing disturbed area; entirely within Hydrogeologically sensitive area; close proximity to MNR wooded area and Greenlands A	Land acquisition required	Low traffic disruption; close proximity to HWY 403	n/a	Within existing ICI area; close proximity to future intensification growth areas and urban growth center
	BWS 16	At Existing Davis Pump Station (320 Davis Rd.)	Permanent		Potential new location for UMR	Existing disturbed area; entirely within Hydrogeologically sensitive area	Existing site; owned by Halton Region	Low traffic disruption; close proximity to HWY 403	n/a	Within existing ICI area and urban growth center
Burlington	BWS13	At Existing Stormwater Pump Station, along Appleby Line, between Upper Middle Rd. and Dundas St. (2200 Appleby Line)	Permanent		Potential new location for Harrison	Existing disturbed area; potential to be within or in close proximity to CH regulation limits and Greenlands A; close proximity to hydrogeologically sensitive area and watercourse	Existing site owned by Halton Region	High traffic disruption; grade separation (poor access)	n/a	At existing stormwater pump station site; within existing residential area; close proximity to existing ICI areas and future intensification growth areas
	BWS14	South of HWY 407 between Appleby Line and Walker's Line	Permanent		Potential new location for Harrison	Greenfield area; potential to be within or within close proximity to CH regulation limits, MNR wetlands, MNR wooded area and watercourse	Land acquisition required	Low traffic disruption; close proximity to HWY 407	n/a	Within existing ICI area but will require access via residential roads
	BWS15	At Landmark Structures (3091 Harrison Crt)	Permanent		Potential new location for Harrison	Existing disturbed area; potential to be within close proximity to CH regulation limits and MNR wooded area	Land acquisition required	Low traffic disruption; close proximity to HWY 407	n/a	Within existing ICI area; close proximity to existing Harrison Crt. BWS

Legend

- **Preferred Alternative**
- **Requires Additional Investigation**
- **Not Preferred**

TABLE 3: SUSTAINABLE HALTON - BULK WATER SERVICING STRATEGY EVALUATION MATRIX - SCHEDULE B

Municipality	BULK WATER STATIONS (BWS)	Address/Area	Permanent/Portable Bulk Water Units	Preferred Option Colour Coding	Proposed Works	Natural	Legal/Jurisdictional	Economic	Technical	Transportation	Customer Usage	Social
Existing Bulk Water Station Sites:												
Burlington	Harrison Crt. BWS	3089 Harrison Crt.	Portable		Relocate to BWS13, BWS14 or BWS15; BWS 15 preferred	Existing Site	Existing site; owned by City of Burlington (within the road right-of-way)	Existing Site	Existing Site	High traffic disruption; traffic safety issues on north bound lane on Appleby (minimal length to allow for truck acceleration); close proximity to HWY 407	High	Within existing ICI area; close proximity to future intensification growth areas
Alternative Bulk Water Station Sites:												
Burlington	BWS13	At Existing Stormwater Pump Station, along Appleby Line, between Upper Middle Rd. and Dundas St. (2200 Appleby Line)	Permanent		Potential new location for Harrison	Existing disturbed area; potential to be within or in close proximity to CH regulation limits and Greenlands A; close proximity to hydrogeologically sensitive area and watercourse	Existing site owned by Halton Region	No land acquirement required; lower capital cost than BWS 14 and BWS 15	Utilizes existing watermains adjacent to site; potential issues with connection to BWS as existing watermains > 300 mm; potential traffic safety issues as site is close to an underpass	High traffic disruption; grade separation (poor access)	n/a	At existing stormwater pump station site; within existing residential area; close proximity to existing ICI areas and future intensification growth areas
	BWS14	South of HWY 407 between Appleby Line and Walker's Line	Permanent		Potential new location for Harrison	Greenfield area; potential to be within or within close proximity to CH regulation limits, MNR wetlands, MNR wooded area and watercourse	Land acquisition required	Land needs to be acquired from fairly high demand ICI area; higher capital cost than BWS 13 and BWS 15	Utilizes existing 300 mm watermain adjacent to site	Low traffic disruption; close proximity to HWY 407	n/a	Within existing ICI area but will require access via residential roads
	BWS15	At Landmark Structures (3091 Harrison Crt)	Permanent		Potential new location for Harrison	Existing disturbed area; potential to be within close proximity to CH regulation limits and MNR wooded area	Land acquisition required	Land needs to be acquired from an existing developed ICI property; higher capital cost than BWS 13 but lower than BWS 14	Utilizes existing 300 mm watermain adjacent to site	Low traffic disruption; close proximity to HWY 407	n/a	Within existing ICI area; close proximity to existing Harrison Crt. BWS

Legend

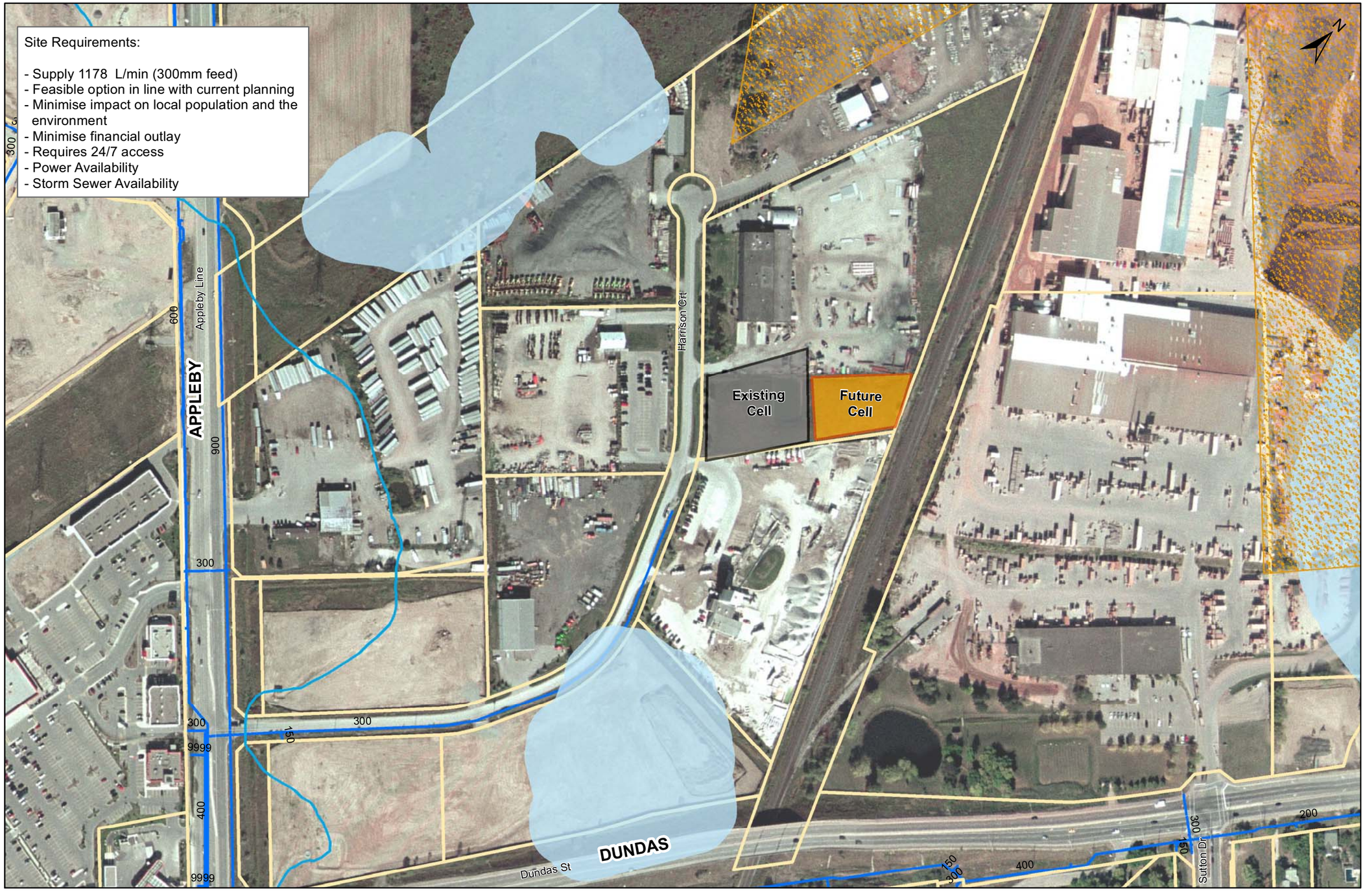
Preferred Alternative
Requires Additional Investigation
Not Preferred

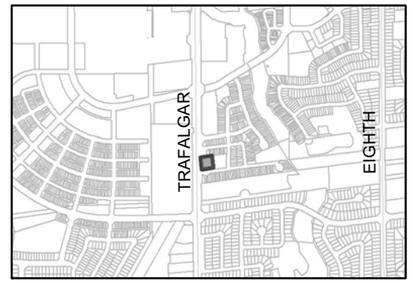
Project No. 6686 Harrison Court Bulk Water Depot

Project No. 6686 - Harrison Court Bulk Water Depot					
Alternatives	**Existing Site**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	New Harrison Court Bulk Water Depot, Utilisation of existing site at 3089 Harrison Court. Recommended Max Day Demand is 1178 L/min.	New Bulk Water Depot, located west of existing site at 3505-3511 Dundas St. Recommended Max Day Demand is 1178 L/min.	BWS14 - South of HWY 407 between Appleby Line and Walker's Line	New Harrison Court Bulk Water Depot, approximately 350 m south east of the existing site at 3089 Harrison Court. Recommended Max Day Demand is 1178 L/min.	New Bulk Water Depot, located off the Hwy 407, southeast of Appleby Line along Palladium Way. Recommended Max Day Demand is 1178 L/min. APPLEBY
Environmental	Site is currently vacant and on designated employment lands. The site is clear of any obstructions such as trees and hedgerows. The site has no agricultural use. The site has no ANSIs or ESA areas within the immediate vicinity.	Site is currently vacant on employment designated lands. The site is adjacent to some trees. The site has no agricultural use. The site is directly adjacent to an area of greenland and stream.	Site is currently vacant but is directly adjacent to a number of residential units. Some trees and a creek are within close proximity. The site has no agricultural use. The site has no ANSIs or ESA areas within the immediate vicinity.	Site is currently vacant on employment designated lands. The site is adjacent to some trees. The site has no agricultural use. The site has no ANSIs or ESA areas within the immediate vicinity.	Site is currently vacant on employment designated lands. The site is adjacent to some trees. The site has no agricultural use. The site has no ANSIs or ESA areas within the immediate vicinity.
Technical	The 300 mm main on Harrison Court is adequate to provide the firm capacity, and system redundancy required. Low potential for conflict with utilities Brownfield Site. Ideal site due to utilisation of the existing bulk water site. Current site has had some issues due to the adjacent cement factory and its shared access. It is this conflict that has led to the recommendation that it has been proposed a new site be located. Access is not ideal, with the need to exit directly from Appleby Line. This alternative may also block the entrance to the rest of the estate.	The 300 mm main on Mainway is adequate to provide the firm capacity, and system redundancy required. Low potential for conflict with utilities Vacant Greenfield Site Access poor due to Walkers Line/Dundas intersection. This intersection also leads to a residential estate.	The 300 mm on Turnberry Rd. is adequate to provide firm capacity and system redundancy. High potential for conflict with utilities. Vacant Greenfield Site. Access is not ideal, with the need to exit directly from Appleby Line. This alternative may also block the entrance to the rest of the estate.	The 300 mm main on Harrison Court is adequate to provide the firm capacity, and system redundancy. Moderate potential for conflict with utilities. Vacant Greenfield Site. Access is not ideal, with the need to exit directly from Appleby Line. This alternative may also block the entrance to the rest of the estate.	A 300 mm main is required to provide adequate firm capacity and system redundancy. Dependent on future planning for the area. Low potential for conflict with utilities. Vacant Greenfield Site. The site would be accessible by means of the current entrance to Appleby Line Reservoir.
Socio / Cultural	Site expansion may be possible. Site located within an industrial estate. There will be minimal impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for high traffic disruptions/disturbance especially within the Harrison Court estate, both during construction and operation. Minimal visual impact as this is the current bulk water site.	Site expansion would be possible. Site located within an area zoned as development lands. There will be minimal impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for high traffic disruptions/disturbance especially along Mainway due to the Dundas Exit ramp for Highway 407, both during construction and operation. Minimal visual impact as there are few local residencies within the area.	Site expansion would be possible. Site located directly adjacent to a residential zone, however, it is in close proximity to existing ICI areas and future intensification growth areas. There will be moderate/high impact on nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Potential for moderate/high traffic disruptions/disturbance within residential estate both during construction and operation. Potential for moderate visual impact as the site is adjacent to a throughway for a local residential estate.	Site expansion may be possible. Site located within an industrial estate. There will be moderate impacts to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Minimal traffic disruptions/disturbance expected on Harrison Court during construction and operation. Minimal visual impact as there are few local residencies within the area.	Site expansion would be possible. Site located within an area zoned as development lands There will be no impact on the nearby population due to the isolation of the site. Minimal/moderate traffic disruptions/disturbance expected on Walkers Line during construction and operation. Minimal visual impact as there are no local residencies within the area.
Financial	No property purchase required. Land acquisition required only if there is an expansion required.	Property purchase would be required. Coordination with the Ontario Management Board Secretariat.	Land acquisition required Coordination with the Ontario Management Board Secretariat.	Property purchase would be required. Coordination with the Ontario Management Board Secretariat.	Property purchase would be required. Coordination with the Ontario Management Board Secretariat.
Legal / Jurisdictional	Construction to be completed in accordance to the following legislation: - Environmental Protection Act (EPA) -Ontario Water Resources Act -The Canadian Environmental Protection Act -Greenbelt Act, Planning Act, Places to Grow Act -Ministry of the Environment Guidelines and Procedures Construction Permits - Required for upgrade only. Halton Region Conservation Authority approvals Ministry of Natural Resources Screening No approval of utility crossings required. Moderate potential implementation risk due to cement factory access issues.	Construction to be completed in accordance to the following legislation: - Environmental Protection Act (EPA) -Ontario Water Resources Act -The Canadian Environmental Protection Act -Greenbelt Act, Planning Act, Places to Grow Act -Ministry of the Environment Guidelines and Procedures Construction Permits. Halton Region Conservation Authority approvals Ministry of Natural Resources Screening Approval for utility crossings may be required. Potential implementation risk due to land acquisition issues.	Construction to be completed in accordance to the following legislation: - Environmental Protection Act (EPA) -Ontario Water Resources Act -The Canadian Environmental Protection Act -Greenbelt Act, Planning Act, Places to Grow Act -Ministry of the Environment Guidelines and Procedures Construction Permits. Halton Region Conservation Authority approvals Ministry of Natural Resources Screening. Approval for utility crossings may be required. Potential implementation risk due to land acquisition issues.	Construction to be completed in accordance to the following legislation: - Environmental Protection Act (EPA) -Ontario Water Resources Act -The Canadian Environmental Protection Act -Greenbelt Act, Planning Act, Places to Grow Act -Ministry of the Environment Guidelines and Procedures Construction Permits. Halton Region Conservation Authority approvals. Ministry of Natural Resources Screening Approval for utility crossings may be required. Potential implementation risk due to land acquisition issues.	Construction to be completed in accordance to the following legislation: - Environmental Protection Act (EPA) -Ontario Water Resources Act -The Canadian Environmental Protection Act -Greenbelt Act, Planning Act, Places to Grow Act -Ministry of the Environment Guidelines and Procedures Construction Permits. Halton Region Conservation Authority approvals Ministry of Natural Resources Screening. Approval for utility crossings may be required. Potential implementation risk due to land acquisition issues.
Overall Score	**High**	**Moderate**	**Low**	**Moderate**	**Moderate**

Site Requirements:

- Supply 1178 L/min (300mm feed)
- Feasible option in line with current planning
- Minimise impact on local population and the environment
- Minimise financial outlay
- Requires 24/7 access
- Power Availability
- Storm Sewer Availability





- Project Area

Legend

- Existing Pumping Station
- Existing Well
- Existing Standpipe
- Existing Reservoir
- Existing Water Purification Plant
- Existing Elevated Tower
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Lakes Rivers and Creeks
- ANSI
- ESA
- Greenland - A
- Greenland - B
- Greenbelt
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Grand River Conservation Authority - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Conservation Halton - Regulation Limit

50 25 0 50 Meters

Halton REGION

Sustainable Halton
Water and Wastewater Master Plan

Project 6686 - Water Servicing
Harrison Court Bulk Water Site:
Theoretical Expansion Limits

AECOM

1:3,000
Mar 25, 2011
60114062-344-W

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6686
Prepared/Updated By:	AECOM		

Project Description:

Bulk Water Stations on New Sites

Scope of Work:

Bulk Water Stations on New Sites. To provide developers/other large users with a steady supply of water across the RMOH - the need for these stations has been driven by projected population growth.

Project Justification:

Watermain distribution network upgrade required to service future growth areas in Milton and Burlington. The construction of new bulk water storage sites is required due to access/conflicting issues with the current temporary sites. These sites are required to service the needs of construction resulting from Oakville and Burlington intensification, infill needs plus any other developments.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population growth in Milton and Burlington.

Project Timing:

In Service:	N/A	Design:	2012
Class EA:	B	Construction:	2013

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing required

Property Requirements:

Site acquisition required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit			
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Harrison Court preferred utilizes existing site plus an extension to rear in order to resolve current site congestion issues. Upper Middle Road preferred will utilize the existing Davis Rd. Pump Station site.

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6694

Project Description: 10 ML Zone G6L Storage at 22nd Siderd

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Alternatives Evaluation Table
5. Preferred Solution on Map
6. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6694
Prepared/Updated By:	AECOM		

Project Name/Description:

Zone G6L Reservoir at 22nd Sideroad in Georgetown.

Project Need:

New 10 ML Zone G6L Storage at 22nd Siderd required to service new Georgetown lakebased service area and existing groundwater areas to be switched over to the lakebased

Evaluation:

Storage alternatives were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. An exhaustive list of elevated tank sites was not considered, as it was determined that reservoirs were considered more appropriate for the following reasons:

• Inground reservoirs typically have less of an aesthetic impact on the surrounding community than do elevated tanks;

• Storage capacity of elevated tanks is limited without the possible for future expansion. Storage volume would require multiple elevated tanks; and,

• Cost of elevated tanks tend to be greater per unit of capacity.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:

• Environmental/Natural Heritage: Site is within the NEC Rural area but is not adjacent to any NEC Natural or Protected areas.

• Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.

• Transport: The site fronts an existing road right-of-way (No. 22 Sideroad) and has good access off Trafalgar Rd.

• Bridge Crossing: N/A.

• Long Term Servicing: There is sufficient land available for facility expansions to meet long term servicing requirements.

Selection of Preferred Servicing Alternative:

Four (4) Zone 6 storage alternatives were evaluated as follows:

• Alternative 1 – Reservoir at Hwy 7 and No. 22 Sideroad (adjacent to existing Zone 6 Reservoir)

• Alternative 2 – Reservoir at Trafalgar Road and Highway 7

• Alternative 3 – Reservoir at Silver Creek and Highway 7

• Alternative 4 – Elevated Tanks at Trafalgar Road corridor

Alternative 1 was selected as the preferred site, adjacent to the existing Zone 6 Reservoir at No. 22 Sideroad and Highway 7. The project has been classified as Schedule B because it will require a new site and is within NEC Rural designated lands, and as such has potential for some adverse environmental impacts which would require mitigative measures. The site is not an within an environmentally sensitive area, and there is opportunity for future expansion with the addition of cells. It is located at a good elevation for operational and constructability efficiency and will pose minimal impacts on traffic. Because it is an inground reservoir, it will have minimal visual impact on the surrounding landscape. Approximately 1.5 ha will be required.

Trafalgar Rd
Z6 Res (Alt#2)
Z6 Res (Alt#3)
Fallbrook Trail
Clayhill Rd
Ninth Line
Eighth Line
Hwy 7
Confederation St
No 22 Siderd
Sixth Line
Z6 Res (Alt#1)
22nd Sideroad Res
Wildwood Rd
Moore Park PS
Lindsay Court Well
No 20 Siderd
Main St N
Princess Anne Well
Maple Ave
No 17 Siderd
Trafalgar Rd
Main St S
No 15 Siderd
Z6 ET (Alt4)
Sixth Line
Eighth Line

Legend

Existing Water Infrastructure
- Water Pumping Station
- Water Well
- Water Standpipe
- Water Purification Plant
- Water Reservoir
- Elevated Water Tower
- Alternative Reservoir Site
- Property Limit
- Preferred Site
- Existing Cell
- Proposed Cell

Environmental Features
- Greenbelt
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

Halton REGION

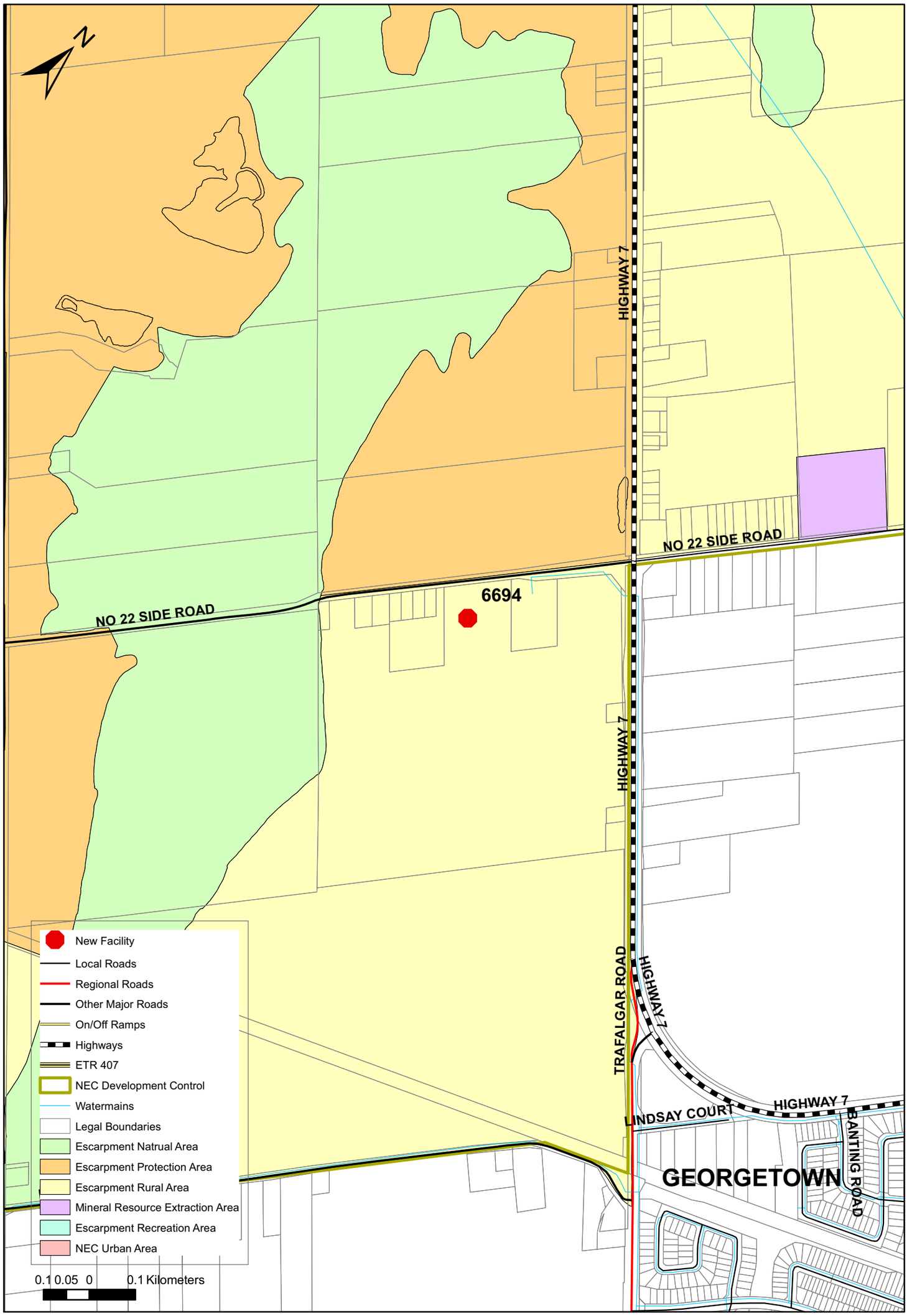
Sustainable Halton
Water and Wastewater Master Plan

Project 6694 - Zone G6L Reservoir
Georgetown Water Servicing
Alternative Storage Sites

AECOM

1:20,000
30 Sep 2011
File: 60114062-145-W

Niagara Escarpment Commission Mapping
Water Projects



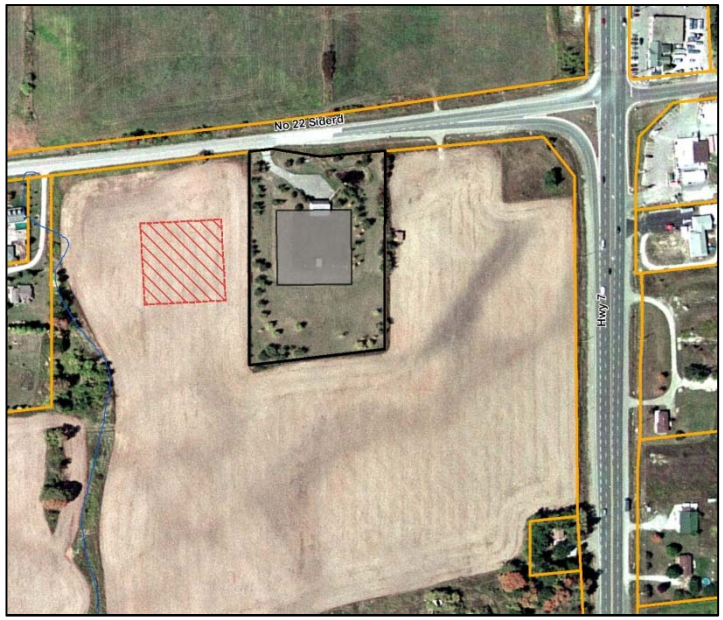
ID 6694: 10 ML Zone G6L Storage at 22nd Side Rd

Halton REGION

Sustainable Halton Master Plan 2011

Alternative Storage Facility #1

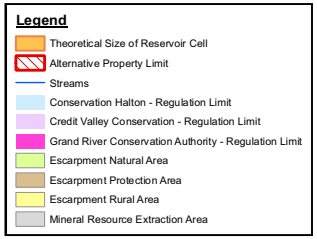
(New Reservoir adjacent to existing Reservoir)

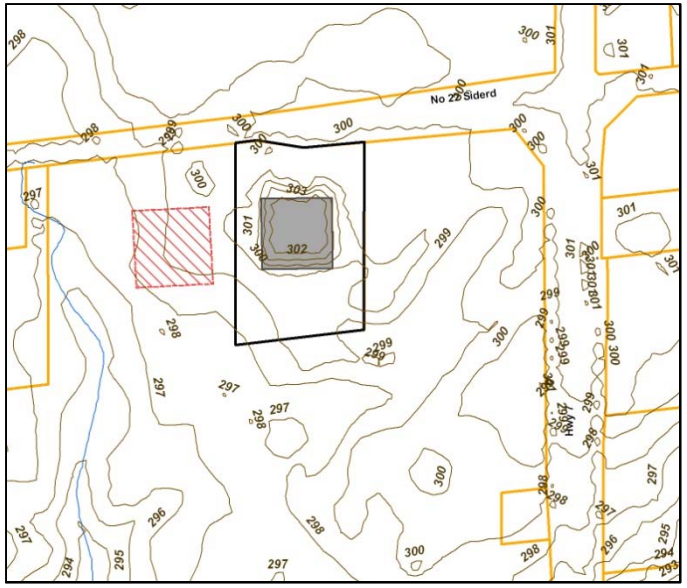


Plan View

Profile (Street) View – off No. 22 Sideroad

Natural Features





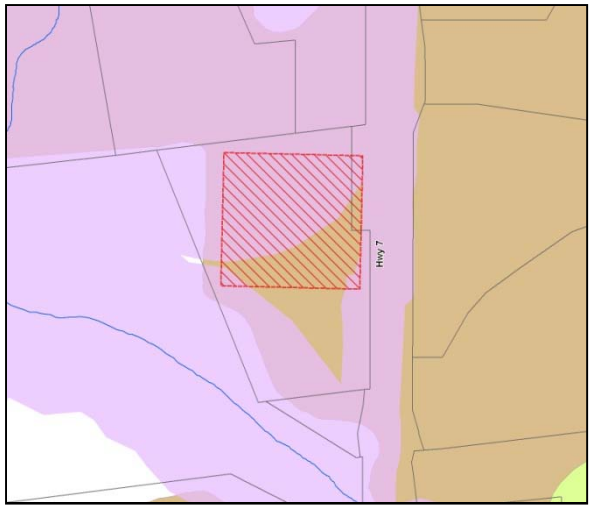
Contours

Alternative Storage Facility #2

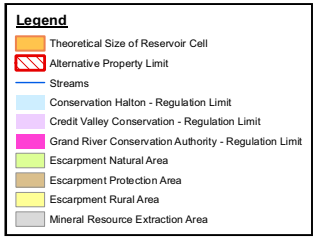
(New Reservoir within NEC Protection Area)

Plan View

Profile (Street) View – off Highway 7



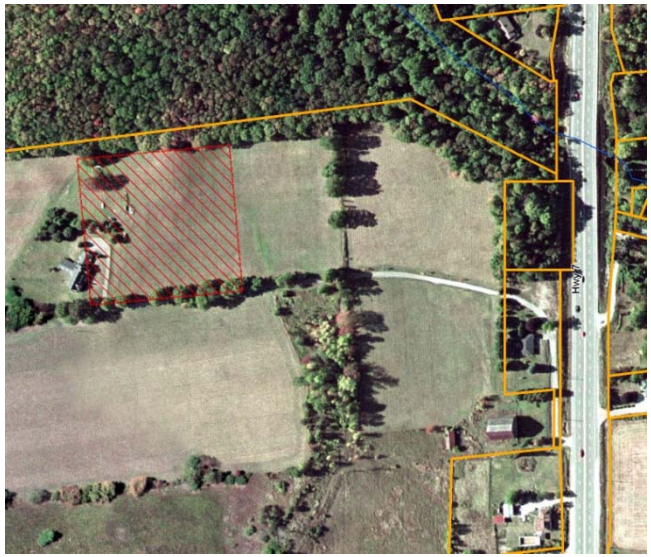
Natural Features



Contours

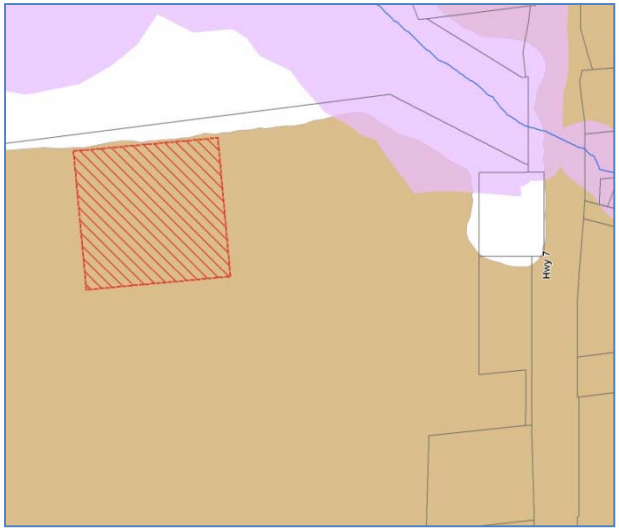
Alternative Storage Facility #3

(New Reservoir within NEC Protection Area)

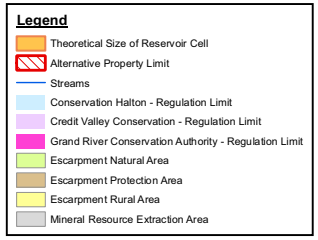


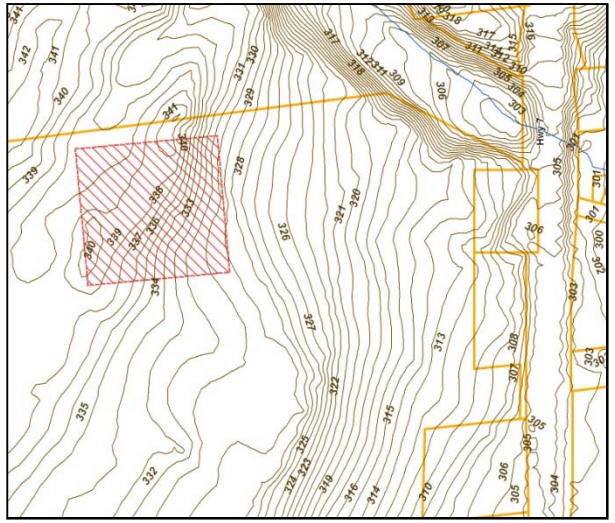
Plan View

Profile (Street) View – off Highway 7
(site is beyond field of view)



Natural Features





Contours

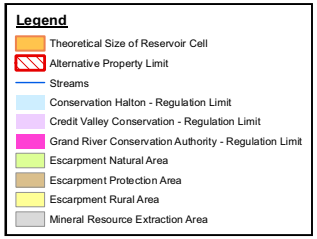
Alternative Storage Facility #4
(New Elevated Tank)

Stewarttown Middle School

Plan View

Profile (Street) View –
Looking east off Trafalgar Rd

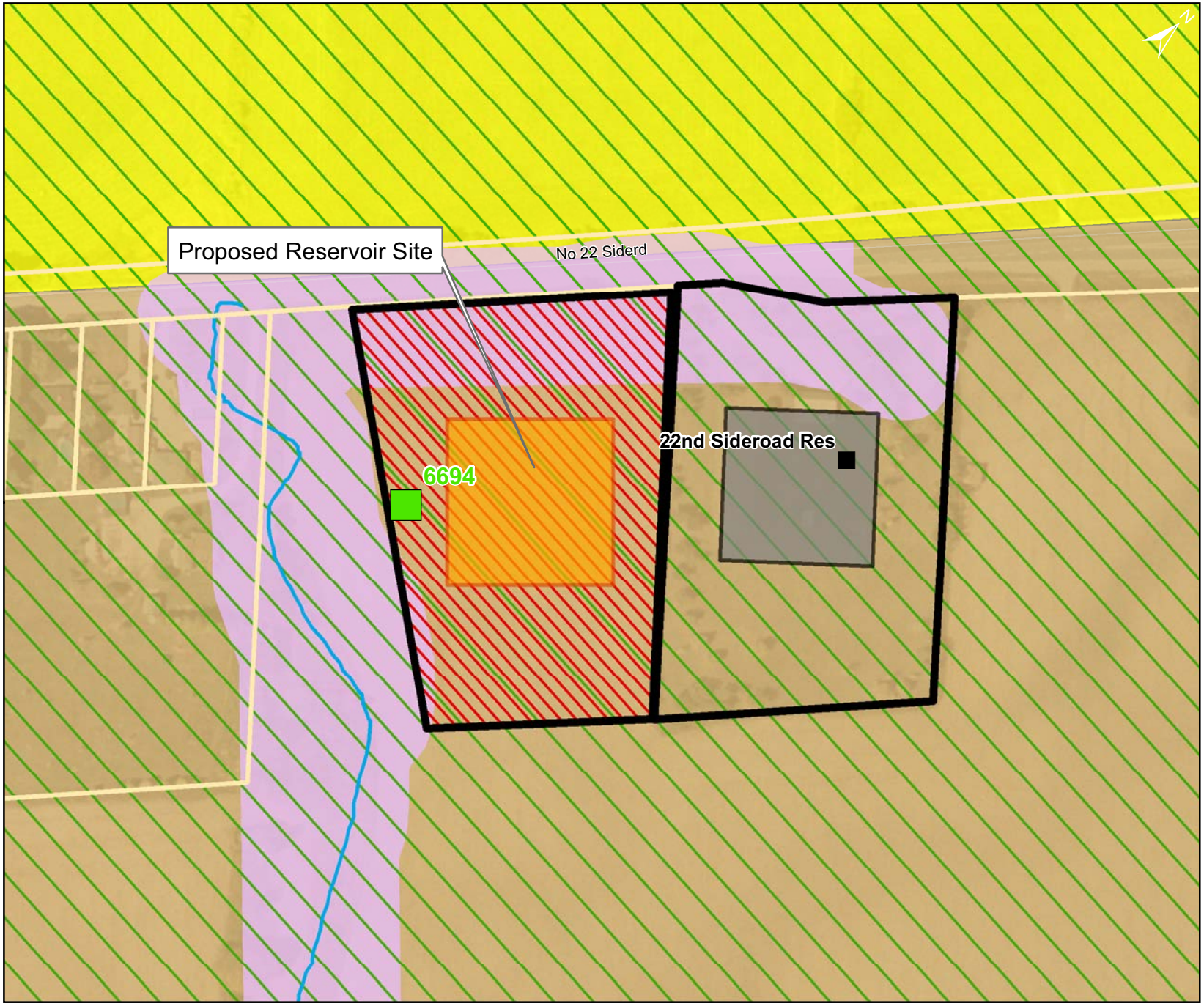
Natural Features

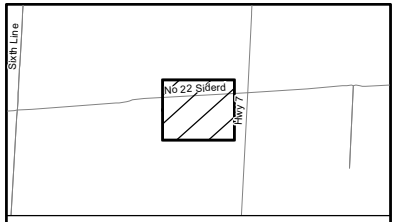


Contours

Project No. 6694 - Zone 6 Reservoir, Georgetown

Project No. 6694 - Georgetown Zone 6 Storage Alternatives				
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	Reservoir located adjacent to the Georgetown existing reservoir on the southwest corner of No. 22 Sideroad and Trafalgar Road.	Reservoir located approx. 1 km south of 27 Sideroad and approx. 400 m west of Trafalgar Road.	Reservoir located 260 m north and 590 m east of the Highway 7/Trafalgar Road intersection.	Elevated tanks located within Trafalgar Road. corridor, preferably east of No. 15 Sideroad and Trafalgar Rd (highest land).
Environmental	Site is within Niagara Escarpment Rural designated area but is not adjacent to Escarpment Natural or Protected designated area. No watercourses on site. No ANSIs/ESAs/wetlands on site. Site is currently used for seasonal arable crop and can accommodate additional building without disturbing surrounding vegetation.	Site is within the Niagara Escarpment Protected area and is adjacent to the Niagara Escarpment Natural area. High potential site will not be supported by NEC. Site is also within the Credit Valley Conservation Regulation Limit area. No watercourses on site. No ANSIs/ESAs/wetlands on site. Provincial wetland (Acton-Silver Creek Wetland Complex) located within 100 m of potential site. Watermain construction will require additional crossings of Silver Creek and in turn removal of some vegetation, thus mitigation measures will need to be implemented to minimize impacts.	Site is within the Niagara Escarpment Protected area, is adjacent to the Niagara Escarpment Natural area, and is also adjacent to the Credit Valley Conservation Regulation Limit area. Site is partly within and adjacent to an Environmentally Sensitive Area (Waterfall Woods ESA). Not considered a viable site.	Site is not within any Greenbelt or Niagara Escarpment lands. However, multiple sites required potential for NEC viewshed impact No watercourses on site. No ANSIs/ESAs/wetlands on site. Sites neighbour an existing school and future development land. Site clearance for construction of new tower will involve disturbance to existing crop lands.
Technical	Top water level requirement is 303m. Ground elevation requirement is 291m - 303m. Location ground level is 300m to 303m, which meets the required ground elevation requirements. Keeping the reservoir adjacent to existing site maintains level of service for areas to be switched over. Good elevation for constructability and operational efficiency. Site is further away from future service area than Alt. 4 but closer than Alt. 2. Due to site location Alternative requires longer feedermain than Alt. 4 but shorter than Alt. 2. Greenfield Construction. Good access to Highway 7 / Trafalgar Road. Local access route for trucks already in place. Storage needs can be achieved at one facility compared to multiple sites required for elevated tanks which are constrained by limited maximum size Reservoir is generally easier to inspect and repair than an elevated tank. Future expansion is possible through the addition of cells.	Top water level requirement is 303m. Ground elevation requirement is 291m - 303m. Location ground level is 333m to 334m, higher than required. Ground elevation is too high, rendering it inadequate for the construction of a reservoir. Site is approximately 6.6 km further away from future service area than Alt. 4. Due to site location Alternative requires longer feedermain than Alt. 4 and Alt. 2. Greenfield Construction. Good access to Highway 7 / Trafalgar Road. Access to site for trucks will need to be created. Storage needs can be achieved at one facility compared to multiple sites required for elevated tanks which are constrained by limited maximum size Reservoir is generally easier to inspect and repair than an elevated tank. Future expansion is possible through the addition of cells.	Alternative Screened Out.	Top water level requirement is 303m. Ground elevation requirement is 265m - 283m. Location ground level is 262m to 266m, which meets the lower range of the allowable ground level requirements. If located at the highest point within the Trafalgar Road corridor (approximately 265 m), elevated tank will still need to be about 30 m in height to maintain level of service. Site is nearest and within future service area (Trafalgar Road Corridor). This implies shorter feedermain length, fewer water crossings, shorter residence time, and lower system head losses. Greenfield Construction. Good access to Highway 7 / Trafalgar Road. Access to site for trucks will need to be created. Multiple sites required for elevated tanks due limited maximum size and projected storage needs Elevated tank is generally more challenging to inspect and repair than a reservoir. Future expansion to tank will not be possible.
Socio / Cultural	Loss of Agricultural Lands. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Minimal impacts in terms of traffic disturbance / disruption along No. 22 Sideroad and Trafalgar Road. Less visual impact since in-ground and far from residential areas. Less socio-cultural impact than Alt. 4 and is comparable to Alt. 2.	Loss of Agricultural Lands. Adjacent to existing home on site, thus high potential for impact on existing land owner. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Minimal impacts in terms of traffic disturbance / disruption along Trafalgar Road / Hwy 7. Less visual impact since in-ground and far from residential areas. Less socio-cultural impact than Alternative 4 and is comparable to Alternative 1.		Land is within new urban boundary. Moderate potential for impact on nearby residents. Site is located across a school, therefore extra safety precautions will be necessary during construction. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Moderate potential for traffic disturbance / disruption along No. 15 Side Road or Trafalgar Road, for local residents. A traffic plan will have to be implemented. Greater visual impact due to height. Adjacent to Stewarttown Middle School and across the street from residential homes. Thus there is potential for opposition from local residents. Potential for NEC viewshed impact Greatest socio-cultural impact due to highest visual impact and proximity to residential area.
Financial	Lower capital cost than elevated tanks. Lower capital costs for storage than Alt.4 and same as Alt. 2 Higher feedermain costs than Alt. 4 but lower than Alt. 2	Lower capital cost than elevated tanks. Lower capital costs for storage than Alt.4 and same as Alt. 1 Highest feedermain costs/distanace		Higher capital costs than reservoir alternatives Higher capital costs for storage than Alt.1 and Alt. 2 Lowest feedermain distance/cost
Legal / Jurisdictional	Property acquisition (1.5 ha) is required. Approval for creek and utility crossings may be required. Site within Niagara Escarpment Rural Designation Lands, will require coordination with NEC Lower implementation risk as there is an existing reservoir adjacent to site.	Property acquisition (1.5 ha) is required. Existing home on site - willingness of site owner to sell land will be required. Approval for creek and utility crossings may be required. Site within Niagara Escarpment Protected Designation Lands, support from NEC unlikely Higher implementation risk due to land acquisition issues.		Two sites require property acquisition (0.5 ha each) . Approval for creek and utility crossings may be required. Moderate implementation risk due to land acquisition issues.
Overall Score	**High**	**Low**	**Screened Out**	**Moderate**





- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Future Feedermain (SH MP Projects)
- Property Limit
- Preferred Site
- Existing Cell
- Proposed Cell
- Parcel Fabric

Environmental Features
- Greenbelt
- ESA
- ANSI
- Greenland - A
- Greenland - B
- Regional Wetlands
- Provincial Wetlands
- Escarpment Natural Area
- Escarpment Rural Area
- Escarpment Protected Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 15 30 60 Meters

Halton Region
Sustainable Halton

Project 6694 - Water Servicing
Preferred Georgetown Zone 6 Reservoir Site

AECOM

30 Sep 2011
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2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6694
Prepared/Updated By:	AECOM		

Project Description:

10 ML Zone G6L Storage at 22nd Siderd

Scope of Work:

New 10 ML Zone G6L Storage at 22nd Siderd will require new Georgetown lakebased service area and existing groundwater areas to be switched over to the lakebased. Reservoir site is within Rural Designated lands within the Niagara Escarpment and is adjacent to existing groundwater reservoir.

Project Justification:

The new storage is to be installed as part of the new water distribution network in the Georgetown Lake-Based System, it is required to service future growth areas.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected population growth in Georgetown requires lakebased storage.

Project Timing:

In Service:	2024	Design:	2021
Class EA:	B	Construction:	2022
		Land:	2021

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PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing

Property Requirements:

Site acquisition required

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Req consultation with NEC/ NEC Development Permit. Expansion of existing use. Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Stage 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6701

Project Description: Kitchen Zone O3 Pumping Station expansion by 80 ML/d

Project Documentation

1. Project Tracking Sheet Summary
2. Existing Facilities Map
3. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
4. Preferred Solution on Map
5. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	30-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6701
Prepared/Updated By:	AECOM		

Project Name/Description:

Kitchen (Zone O3) Pumping Station expansion by 80 MLD.

Project Need:

The Kitchen (Zone O3) Pumping Station expansion is required to service future growth areas in Milton and Georgetown.

Evaluation:

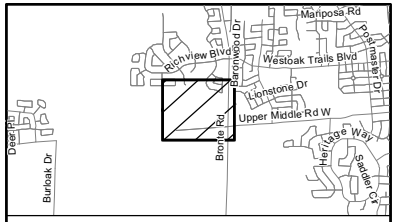
No evaluation of alternative sites as expansion is within existing property limits.

Special Consideration and MNR Screening:

There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site is adjacent to Greenlands - B designated lands and is partially within the Conservation Halton Regulation Limit. There is a creek that runs through the existing property.
- Cultural/Heritage: Site is not within any cultural/heritage signficant lands.
- Transport: Not applicable.
- Bridge Crossing: Not applicable.
- Long Term Servicing: Limited site capacity
- MNR Screening: Consultation required re: Endangered Species Act.

Selection of Preferred Servicing Alternative:

Pumping station expansion will take place within existing property limits. No acquisition of new land will be required.



- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Future Feedermain (SH MP Projects)
- Property Limit
- Parcel Fabric

Environmental Features
- Greenbelt
- ESA
- ANSI
- Greenland - A
- Greenland - B
- Regional Wetlands
- Provincial Wetlands
- Escarpment Natural Area
- Escarpment Rural Area
- Escarpment Protected Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 30 60 120 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6701
Kitchen Reservoir and Zone 3/Zone 5 BPS
Existing Site

AECOM

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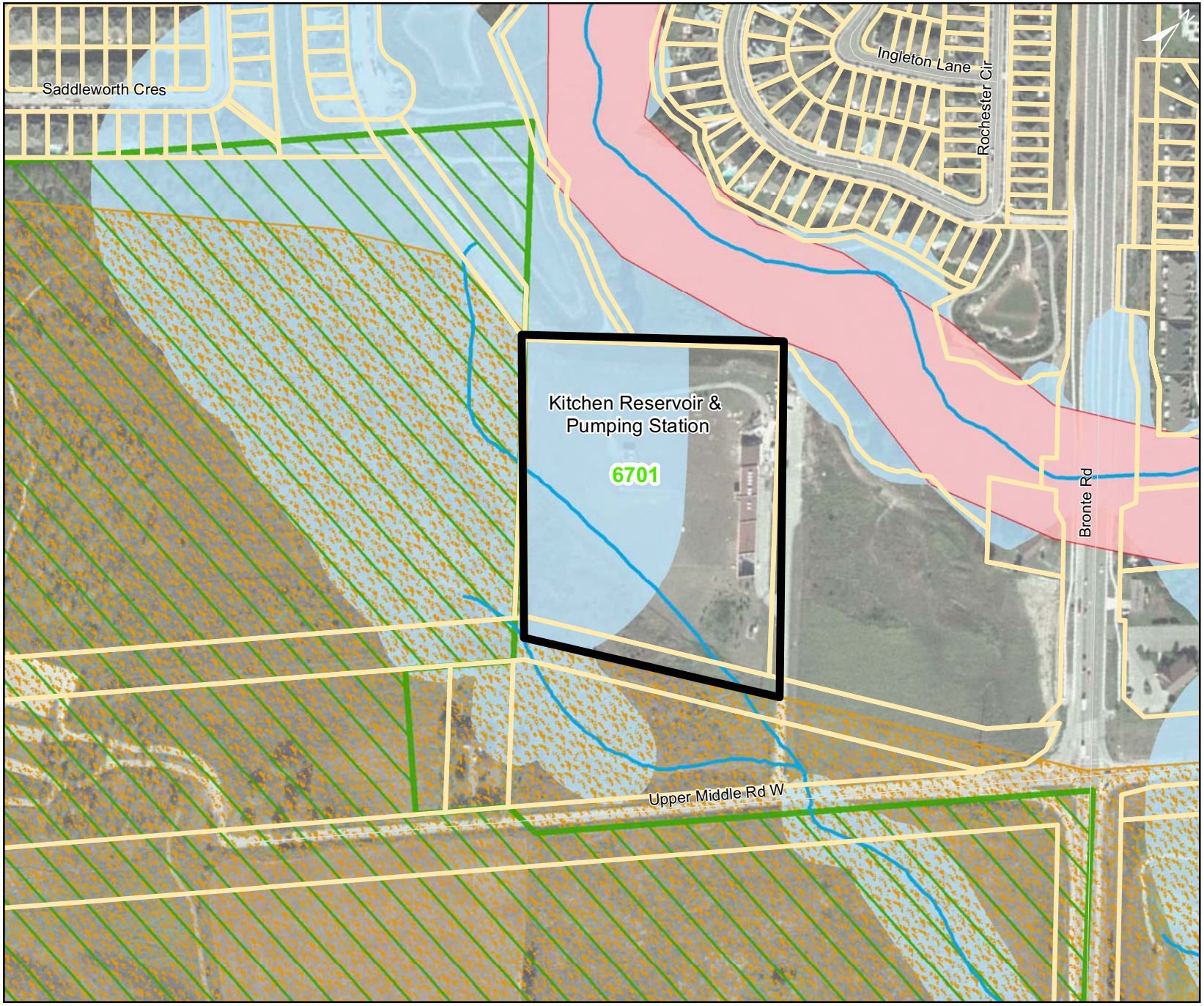

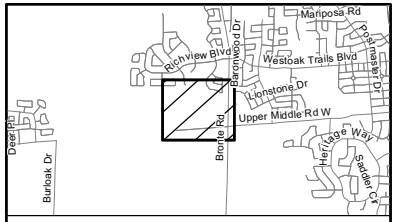

- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Future Feedermain (SH MP Projects)
- Property Limit
- Parcel Fabric

Environmental Features
- Greenbelt
- ESA
- ANSI
- Greenland - A
- Greenland - B
- Regional Wetlands
- Provincial Wetlands
- Escarpment Natural Area
- Escarpment Rural Area
- Escarpment Protected Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 30 60 120 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6701
Kitchen Reservoir and Zone 3/Zone 5 BPS
Environmental Features

AECOM

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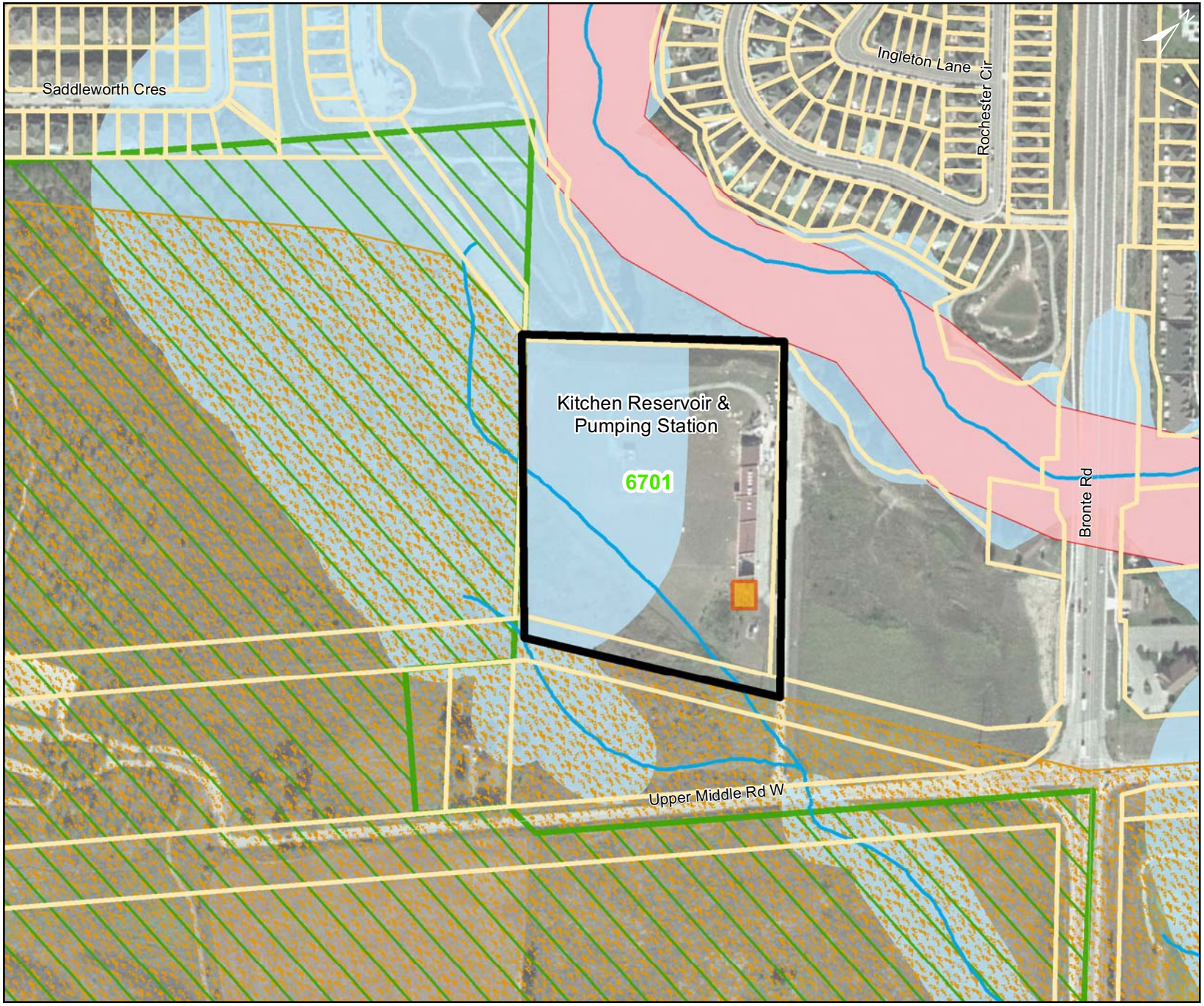

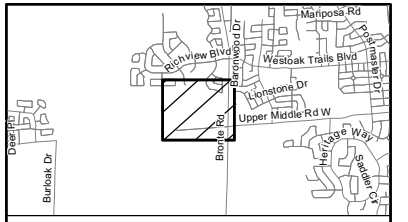

- Project Area

Legend

Existing Facilities
- Pumping Station
- Well
- Standpipe
- Water Purification Plant
- Reservoir
- Elevated Tower
- Existing Feedermain

2008 MP Proposed Facilities
- Pumping Station
- Booster Pumping Station
- Well
- Water Purification Plant
- Reservoir
- Feedermain (2008 MP Projects)

Sustainable Halton MP Proposed Facilities
- Future Pumping Station
- Future Booster Pumping Station
- Future Well
- Future Water Purification Plant
- Future Reservoir
- Future Feedermain (SH MP Projects)
- Property Limit
- Theoretical Building Expansion
- Parcel Fabric

Environmental Features
- Greenbelt
- ESA
- ANSI
- Greenland - A
- Greenland - B
- Regional Wetlands
- Provincial Wetlands
- Escarpment Natural Area
- Escarpment Rural Area
- Escarpment Protected Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

0 30 60 120 Meters

Halton Region
Sustainable Halton

Halton Water Servicing
IPFS ID: 6701
Kitchen Zone 3/Zone 5 BPS
Theoretical Expansion

AECOM

Oct 03, 2011
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2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	Sept 06 2011	Project Number:	N/A
Version Number:	2	IPFS:	6701
Prepared/Updated By:	AECOM		

Project Description:

Kitchen Zone O3 Pumping Station expansion by 80 ML/d

Scope of Work:

Upgrade of the pumping station will require building expansion within the existing Kitchen Reservoir and pumping station site boundary. Additional Zone 3 capacity required to pump water north on RR25, east on Dundas Street to the North Oakville Zone 4 pumping station which will ultimately move water north into the growth areas in Zone 4, 5 and 6 in Milton and Georgetown.

Project Justification:

Pump station to be installed as part of the water distribution network upgrade, it is required to service future growth areas in Milton and Georgetown.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B
-Will be satisfied under SH Master Plan

Triggers Affecting Project Need:

Projected growth in Milton and Georgetown.

Project Timing:

In Service:	2029	Design:	2026
Class EA:	B	Construction:	2027

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

Pumping station expansion not required until late 2026 - 2031 period, project has oversizing component for post 2031 servicing

Property Requirements:

Existing Site

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water	X		
MOE Certificate of Approval - Sewage		X	
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endangered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit		X	
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

2011 Sustainable Halton Water & Wastewater Master Plan - Public Works

PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

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

- 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6541

Project Description: Deep Trunk Sewer on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET SUMMARY

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6540 6541
Prepared/Updated By:	AECOM		

Project Name/Description:

Twin 900mm WWM on Trafalgar Rd and Randall Street/Rebecca Street from Lawson Street to Wilson Street and 1050 mm Trunk Sewer on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP

Project Need:

Wastewater network upgrade required to service future lakebased intensification in Oakville UGC. No environmental crossings are required. Sewer depth is approximately 10m and length is approximately 3,600m. The project will tie into ID #6540 and the existing Oakville SW WWTP. The alignment will be on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP and will be constructed in the road right of way.

Evaluation:

Servicing solutions for the existing and future capacity deficiency due to growth in the Oakville UGC were evaluated on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts.

Special Consideration:

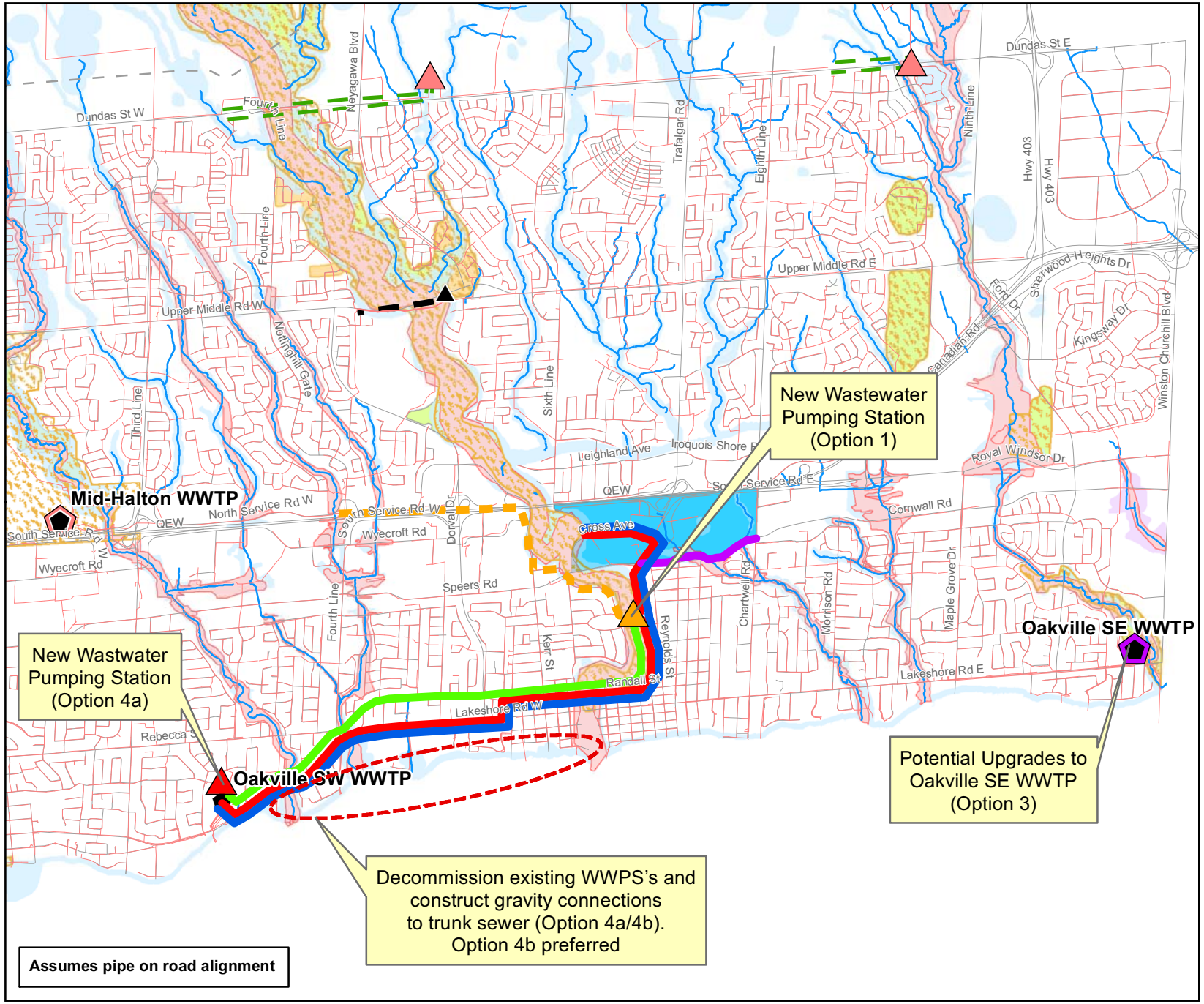
There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Alignments and sites are not within Niagara Escarpment limits, however the alignment crosses Conservation Halton Regulation Limit Area and 16 Mile Creek.
• Cultural/Heritage: Existing road right of way. No significant Cultural/heritage impacts anticipated.
• Transport: Traffic impacts due to construction within existing road right-of-way.
• Crossing: One Bridge/Creek Crossing

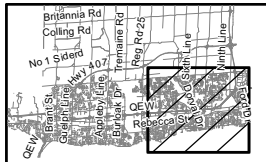
Selection of Preferred Servicing Alternative:

Four alternative servicing solutions were evaluated as follows:
• Alternative 1 – New WWPS and WWFM pumping to Mid-Halton WWTP drainage area.
• Alternative 2 – Twinned sewer along existing Rebecca St alignment from south of Oakville UGC to Oakville SW WWTP.
• Alternative 3 – Gravity sewer to Oakville Southeast WWTP with plant upgrades and WWPS decommissionings.
• Alternative 4a – Deep sewer from south of UGC to Oakville SW WWTP including 7-8 WWPS decommissionings and flow diversions to the trunk sewer. Also requires construction of WWPS at Oaville SW WWTP
• Alternative 4b – Deep sewer from south of UGC to Oakville SW WWTP including 5 WWPS decommissionings and flow diversions to the trunk sewer. No new WWPS required

Alternative 4b was selected as the preferred alternative for servicing the Oakville UGC. It enables decommissioning of several WWPS along Lakeshore Blvd/Rebecca St, provides servicing for the UGC and also alleviates existing capacity constraints downstream of the UGC.

The complete Alternative 4b includes wastewater projects #6530, #6531, #6532, #6534, #6535, #6536, #6537, #6538, #6540, #6541, #6542 and #6543





- Project Area

Legend

Existing Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant
- Wastewater Main
- Wastewater Forcemain

Proposed/Upgrade Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Pumping Station
- Wastewater Main

Preferred Wastewate Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant
- Preferred Alignment - Wastewater Main
- Preferred/Proposed Wastewater Forcemain

UGC Servicing Options
- Option 1 - Forcemain
- Option 2 - Gravity Sewer
- Option 3 - Gravity Sewer
- Option 4a/4b - Gravity Sewer
- Option 4b - Gravity Sewer
- Parcel Fabric
- Urban Growth Centres

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes, Rivers and Creeks

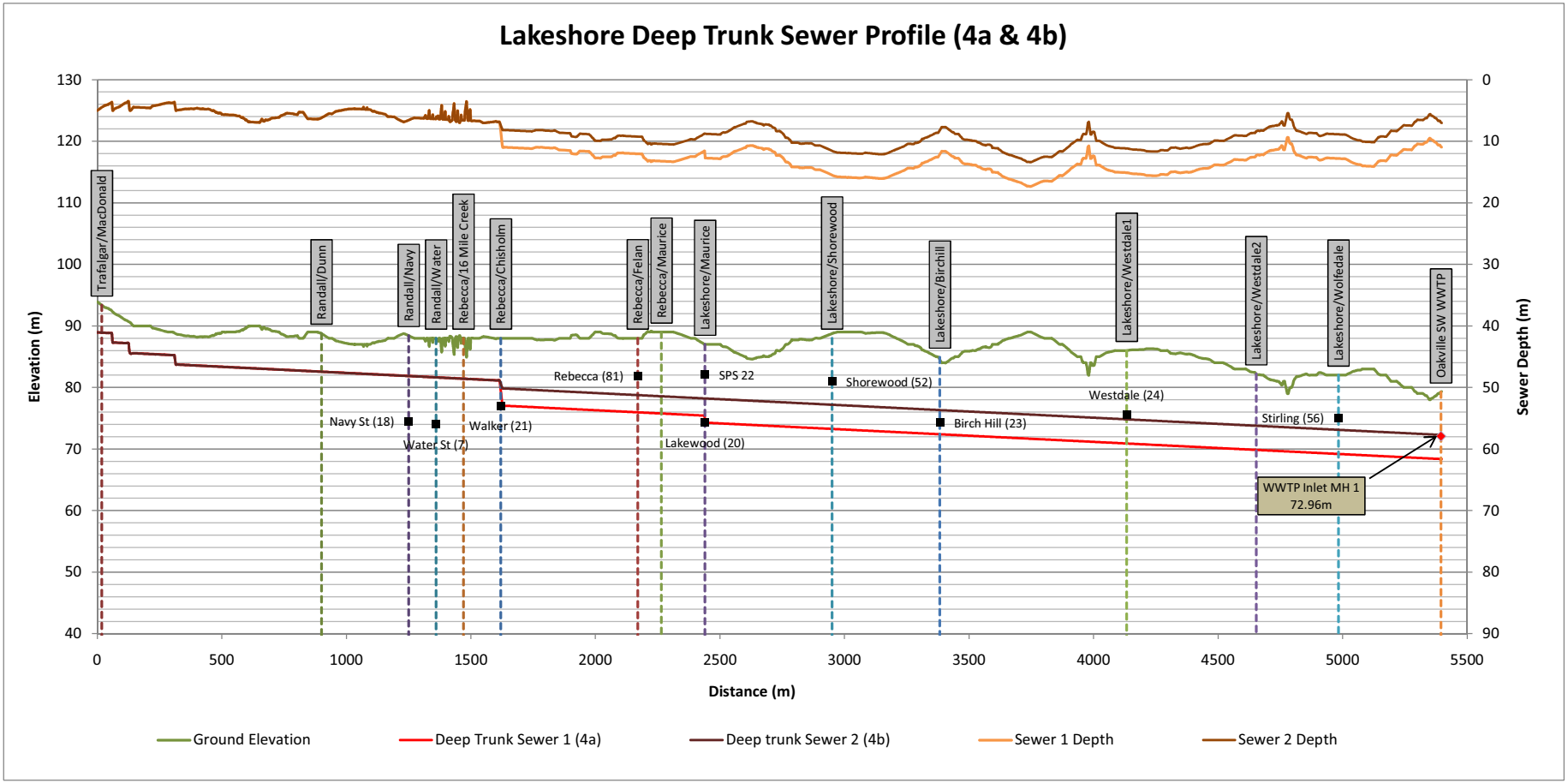
0 370 740 1,480 Meters

Halton Region
Sustainable Halton

Oakville UGC Servicing Options
Project: 6540/6541

AECOM

Oct 03, 2011
1:55,000
60114062-391-WW


Lakeshore Deep Trunk Sewer Profile (4a & 4b)
Elevation (m)
Sewer Depth (m)
Distance (m)
130
120
110
100
90
80
70
60
50
40
0
10
20
30
40
50
60
70
80
90
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
Trafalgar/MacDonald
Randal/Dunn
Randall/Navy
Randall/Water
Rebecca/16 Mile Creek
Rebecca/Chisholm
Rebecca/Felan
Rebecca/Maurice
Lakeshore/Maurice
Lakeshore/Shorewood
Lakeshore/Birchill
Lakeshore/Westdale1
Lakeshore/Westdale2
Lakeshore/Wolfedale
Oakville SW WWTP
Navy St (18)
Water St (7)
Walker (21)
Rebecca (81)
SPS 22
Lakewood (20)
Shorewood (52)
Birch Hill (23)
Westdale (24)
Stirling (56)
WWTP Inlet MH 1
72.96m
Ground Elevation
Deep Trunk Sewer 1 (4a)
Deep trunk Sewer 2 (4b)
Sewer 1 Depth
Sewer 2 Depth

THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Oakville UGC Flow Calculation
DATE:
DESIGNED BY:
CHECKED BY:

Average Day DWF	Res	275 L/cap/day
	Ind	410 L/emp/day
	Comm	260 L/emp/day
	Inst	135 L/emp/day
Peak Extraneous Flow		0.286 L/s/ha
Manning's Roughness Coef.		0.013

$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Total					Adjusted					Cumulative Adjusted					Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
					Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area						
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
2031 Upstream of Oakville UGC Flow - MAY		104	100%	100%	3,099	-	141	328	88	3099	0	141	328	88	3,099	-	141	328	88	10.80	3,393	3.40	25.05	36.68	61.72
		105.01	100%	100%	1,718	-	149	156	59	1718	0	149	156	59	4,817	-	290	484	146	16.96	5,328	3.22	41.87	54.60	96.47
		105.02	100%	100%	386	-	-	-	19	386	0	0	0	19	5,203	-	290	484	165	18.19	5,714	3.19	47.26	58.03	105.29
		101.01	100%	100%	2,793	-	1,020	288	72	2793	0	1020	288	72	7,996	-	1,310	772	238	30.60	9,613	2.97	67.97	90.92	158.89
		106	100%	100%	373	-	27	27	21	373	0	27	27	21	8,369	-	1,337	799	258	31.91	10,025	2.95	73.88	94.24	168.12
		102.02	100%	100%	775	-	36	82	36	775	0	36	82	36	9,144	-	1,372	881	295	34.61	10,874	2.92	84.27	101.01	185.28
		102.01	100%	100%	133	-	-	-	7	133	0	0	0	7	9,278	-	1,372	881	301	35.04	11,008	2.91	86.14	102.07	188.20
		103.01	100%	100%	-	-	463	-	15	0	0	463	0	15	9,278	-	1,836	881	316	36.43	11,446	2.90	90.41	105.51	195.92
2031 Oakville UGC Flow - MAY		42.02	100%	100%	4,553	-	2,717	338	32	4553	0	2717	338	32	13,831	-	4,553	1,220	348	59.63	18,734	2.68	99.51	159.86	259.37
		43	100%	100%	1,757	-	1,162	206	10	1757	0	1162	206	10	15,588	-	5,715	1,426	358	69.04	21,692	2.62	102.33	180.69	283.02
		45	100%	100%	1,004	-	723	46	3	1004	0	723	46	3	16,592	-	6,438	1,472	361	74.48	23,401	2.58	103.31	192.48	295.79
		44.01	100%	100%	1,713	-	132	-	10	1713	0	132	0	10	18,305	-	6,570	1,472	371	80.33	25,239	2.55	106.03	204.96	310.99
		47.02	100%	100%	-	215	-	-	9	0	215	0	0	9	18,305	215	6,570	1,472	379	81.35	25,560	2.55	108.53	207.13	315.65
		47.01	100%	100%	-	192	-	-	8	0	192	0	0	8	18,305	407	6,570	1,472	387	82.27	25,846	2.54	110.69	209.05	319.74
		48.01	100%	100%	519	-	-	-	6	519	0	0	0	6	18,824	407	6,570	1,472	393	83.92	26,365	2.53	112.40	212.53	324.93
		46	100%	100%	4,092	-	2,402	197	29	4092	0	2402	197	29	22,916	407	8,973	1,668	422	104.48	32,825	2.44	120.58	254.82	375.39
		48.04	100%	100%	434	-	-	-	6	434	0	0	0	6	23,349	407	8,973	1,668	428	105.86	33,259	2.43	122.29	257.59	379.89
		48.02	100%	100%	216	-	-	-	2	216	0	0	0	2	23,565	407	8,973	1,668	430	106.54	33,474	2.43	123.00	258.97	381.98
		48.03	100%	100%	115	-	-	-	1	115	0	0	0	1	23,680	407	8,973	1,668	431	106.91	33,590	2.43	123.39	259.71	383.10

Oakville UGC Intensification Area - Wastewater Servicing Evaluation Table

Projects 6540 & 6541 - Oakville UGC Intensification Area - Wastewater Servicing Evaluation Table

Alternatives	Alternative 1	Alternative 2	Alternative 3	Alternative 4a	Alternative 4b
Description	Oakville UGC serviced by: - Upgraded gravity sewers within UGC - New WWPS near 16 Mile Creek - New FM from WWPS to gravity Sewer on North Service Rd	Oakville UGC and I5O serviced by: - Upgraded gravity sewers within UGC - Gravity sewer twin on Trafalgar Rd, Randall Rd, Rebecca St and Lakeshore Rd	Oakville UGC serviced by: - Upgraded gravity sewers within UGC - New Gravity Sewer twin on Cornwall Rd and Chartwell Rd - New Deep Gravity Trunk on Lakeshore Rd - Upgrades to Oakville SE WWTP or WW flow diversion to Peel - Upgrades to WWPS on Lakeshore Rd	Oakville UGC, I5O and existing Oakville serviced by: - Upgraded gravity sewers within UGC - New deep trunk sewer on Lakeshore Rd - New WWPS On Lakeshore Rd at Oakville SW WWTP - New FM from WWPS to Oakville SW WWTP - Decommission up to 8 sewage pumping stations along Rebecca/Lakeshore	Oakville UGC, I5O and existing Oakville serviced by: - Upgraded gravity sewers within UGC - New deep trunk sewer on Lakeshore Rd - Decommission up to 5 sewage pumping stations along Rebecca/Lakeshore
Environmental	Oakville UGC is located along 16 Mile Creek, within partially built up area of Oakville WWFM crossing of 16 Mile Creek near Cornwall Rd ESA crossing required by WWFM	Oakville UGC is located along 16 Mile Creek, within partially built up area of Oakville WWM crossing of 16 Mile Creek along Rebecca St/Randall Rd ESA crossing required by trunk sewer	Oakville UGC is located along 16 Mile Creek, within partially built up area of Oakville Potential upgrades to the Oakville SE WWTP	Oakville UGC is located along 16 Mile Creek, within partially built up area of Oakville WWM crossing of 16 Mile Creek along Rebecca St/Randall Rd ESA crossing required by trunk sewer	Oakville UGC is located along 16 Mile Creek, within partially built up area of Oakville WWM crossing of 16 Mile Creek along Rebecca St/Randall Rd ESA crossing required by trunk sewer
Technical	Alignment is approximately 4000 m. Urban Construction along existing roadway alignments with crossing of QEW along new alignment Moderate potential for conflict with utilities. Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Crossings: 2 Major (16 Mile Creek, QEW)	Alignment is approximately 4510 m. Urban Construction along existing roadway alignments High potential for conflict with utilities. Potential for attachment to Randall St/Rebecca St Bridge for 16 Mile Creek Crossing Crossings: 1 Major (16 Mile Creek)	Alignment is approximately 4100 m, 2,700 m of which is proposed within the RVA report Urban Construction along existing roadway alignments High potential for conflict with utilities. Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Crossings: 0	Alignment is approximately 5100 m. Urban Construction along existing roadway alignments High potential for conflict with utilities. Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Potential for attachment to Randall St/Rebecca St Bridge for 16 Mile Creek Crossing Crossings: 1 Major (16 Mile Creek) Sewer Depth 4-18m	Alignment is approximately 5100 m. Urban Construction along existing roadway alignments High potential for conflict with utilities. Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. Potential for attachment to Randall St/Rebecca St Bridge for 16 Mile Creek Crossing Crossings: 1 Major (16 Mile Creek) Sewer Depth: 4-14m
Socio / Cultural	Low traffic disruptions / disturbance expected along North Service Rd during construction Low visual impact as there are few local residencies within the area. There will be a temporary but impact to nearby landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Cost dependent on method of crossings and extents of tunelled sections.	Significant traffic disruptions / disturbance expected along entire route with the exception of tunelled sections Significant visual impact as there are many local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Cost dependent on method of crossings and extents of tunelled sections.	Significant traffic disruptions / disturbance expected along entire route Significant visual impact as there are many local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Cost dependent on method of crossings, extents of tunelled sections and upgrades to Oakville SE WWTP required.	Significant traffic disruptions / disturbance expected along entire route with the exception of tunelled sections Significant visual impact as there are many local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Cost dependent on method of crossings and extents of tunelled sections.	Significant traffic disruptions / disturbance expected along entire route with the exception of tunelled sections Significant visual impact as there are many local residencies within the area. There will be a temporary but minimal impact on the adjacent landowners during construction. Noise disturbance will be limited by ensuring construction takes place during normal working hours. Dust will be controlled through construction contract obligations. Cost dependent on method of crossings and extents of tunelled sections.
Financial	Longest forcemain distance 2 Major Crossings (16 Mile Creek and QEW) O & M of Large Pumping Station and long forcemain Lowest Overall Capital Cost Does not enable decommissioning of any Oakville SW WWPSs	High capital cost for trunk sewer for servicing of UGC only 1 Major Crossing (16 Mile Creek) Continued O&M cost of Lakeshore WWPS operation Does not enable decommissioning of any Oakville SW WWPSs	High capital cost with high uncertainty for upgrading of SE WWTP 0 Major Crossings In-line with RVA recommendation of adding trunk sewer on Lakeshore and decommissioning WWPS within Oakville SE WWTP catchment area Does not facilitate decommissioning of any Oakville SW WWPSs	Highest Capital cost due to deep trunk sewer option 1 Major Crossing (16 Mile Creek) 1 additional WWPS at Oakville SW WWTP Will enable decommissioning of 7-8 WWPS along Lakeshore, resulting in O&M cost savings.	High Capital cost. Cost reduced from 4a with the elimination of WWPS at Oakville SW WWTP 1 Major Crossing (16 Mile Creek) Will enable decommissioning of 5 WWPS along Lakeshore, resulting in O&M cost savings.
Legal / Jurisdictional	Land requirements for WWPS and tunnel shafts	Wastewater mains constructed within existing road right of way	Little to no Land acquisition for projects	Land requirements for tunnel shafts	Land requirements for tunnel shafts
Overall Score	**Moderate**	**Moderate**	**Low**	**Moderate**	**High**

Public Works

PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6540
Prepared/Updated By:	AECOM	Intensification Area:	OUGC4C

Project Description:

Twin 900 mm WWM on Trafalgar Rd and Randall Street/Rebecca Street from Lawson Street to Wilson Street

Scope of Work:

Twin 900 mm WWM (1200 m) on Trafalgar Rd and Randall Street/Rebecca Street from Lawson Street to Wilson Street. The existing sewer has been twinned in order to provide future capacity. The project crosses greenland/16 Mile Creek and will be constructed within existing road right of way with the one (1) crossing. Combined with wastewater project #6541 to provide Oakville UGC servicing.

Project Justification:

Wastewater network upgrade required to service future lake-based intensification in Oakville UGC. The requirement for the upgrade was highlighted as part of the Region of Halton Intensification Study, where hydraulic analysis identified mains that when simulated sewerline capacity (Q/Qc) reached 85%. The projected future growth has drived the need for a trunk sewer.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule A+

Triggers Affecting Project Need:

Projected growth in Oakville UGC

Project Timing:

In Service:	2015	Design:	2012
Class EA:	A+	Construction:	2013

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit	X		
Conservation Permit	X		
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Combined with Project 6541 to service the Oakville UGC

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6541
Prepared/Updated By:	AECOM		

Project Description:

1050 mm Trunk Sewer on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP

Scope of Work:

Wastewater network upgrade required to service future lakebased intensification in Oakville UGC. No environmental crossings are required. Sewer depth is approximately 10m and length is approximately 3,600m. The project will tie into ID #6540 and the existing Oakville SW WWTP. The alignment will be on Rebecca St and Lakeshore Rd W from Wilson St to Oakville SW WWTP and will be constructed in the road right of way.

Project Justification:

Wastewater network upgrade required to service future growth area. Highlighted as part of the Region of Halton Intensification Study. The results of the RMOH Growth Intensification Study deemed that when simulated sewerline capacity (Q/Qc) reaches 85% the need for upgrades are triggered. It is the projected future growth that has driven the need for a new trunk sewer, the project will also relieve the existing constraints along the existing Rebecca Trunk Sewer. The Benefit to Existing is based on transferred flow from existing areas resulting from WWPS decommissioning relative to the capacity of the new trunk sewer.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population growth in Oakville UGC

Project Timing:

In Service:	2015	Design:	2012
Class EA:	B	Construction:	2013

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Benefit to Existing (BTE)

There is a benefit to existing portion cost. This project will service the UGC growth in Oakville as well as relieve the existing constraints along the Rebecca St Trunk Sewer. The Benefit to Existing is based on transferred flow from existing areas resulting from WWPS decommissioning relative to the capacity of the new trunk sewer.

Property Requirements:

Potential property requirements for tunnel shafts

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		Dewatering
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Transfer of Review
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in 2011 MP
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Tunelling required
Cost estimate based on tunnelled sewer unit cost

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6555

Project Description: 17 ML/d WWPS on Tremaine Rd (200 L/s)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET - SUMMARY

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6555
Prepared/Updated By:	AECOM		

Project Name/Description:

17 ML/d WWPS on Tremaine Rd (200 L/s)

Project Need:

Wastewater network upgrade required to service future growth areas in the south west of Milton. New wastewater pumping station designed to pump upstream flow generated from Milton west and south west over the East 16 Mile Creek environmental feature. The flow will be conveyed east on a new gravity sewer (#6554), then south via the new RR25/Boyne trunk sewer, and will ultimately discharge to the Mid-Halton WWTP. The pump station is located near Conservation Halton Designated Lands.

Evaluation:

WWPS sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. A gravity only solution was not considered feasible due to increased depths and creek crossing. The alternative pumping station sites considered in the evaluation were all relatively in close proximity to one another.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:

- Environmental/Natural Heritage: Site is not within any Niagara Escarpment or other environmentally sensitive area. Site is adjacent to Conservation Halton Regulation Limit Area. Wastewater forcemain #6556 alignment crosses Conservation Halton Regulation Limit Area and tributary of Bronte Creek.
- Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
- Transport: The site fronts an existing road right-of-way (Tremaine Road)
- Crossing: One Bridge/Creek Crossing for wastewater forcemain #6556

Selection of Preferred Servicing Alternative:

Three alternative station sites were evaluated as follows:

- Alternative 1 – Site located on the west side of Tremaine Rd, approximately 600m north of Lower Base Line.
- Alternative 2 – Site located on the east side of Tremaine Rd, approximately 400m north of Lower Base Line.
- Alternative 3 – Site located on the east side of Tremaine Rd, approximately 150m north of Lower Base Line.

Alternative 2 was selected as the preferred site for the Tremaine Rd Wastewater Pumping Station because the site is located just outside of the future urban boundary expansion area and is not within the Conservation Halton Designated Lands. It also enables crossing the creek with forcemains instead of a gravity sewer. Approximately 0.25ha will be required.

Site Requirements:

- Feasible and technically viable option in line with current planning
- Minimize impact on local population and the environment
- Minimize financial outlay
- The construction of 200 L/s wastewater pumping station will require a footprint of approximately 50m x 50m or 0.25 ha
- Power availability

Alternative 1

6557

6555

Alternative 2 (Preferred)

Unnamed Tributaries of Bronte Creek

Tremaine Rd

Alternative 3

6556

Lowe

Assumes pipe on road alignment

Legend

Preferred Wastewater Infrastructure

- Wastewater Pumping Station

Preferred Linear Alignment

- Preferred Forcemain Alignment
- Preferred Gravity Alignment
- Potential Emergency Overflow
- Site Alternatives

Environmental Features

- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Parcel Fabric
- Credit Valley Conservation - Regulation Limit
- Conservation Halton - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

Halton REGION

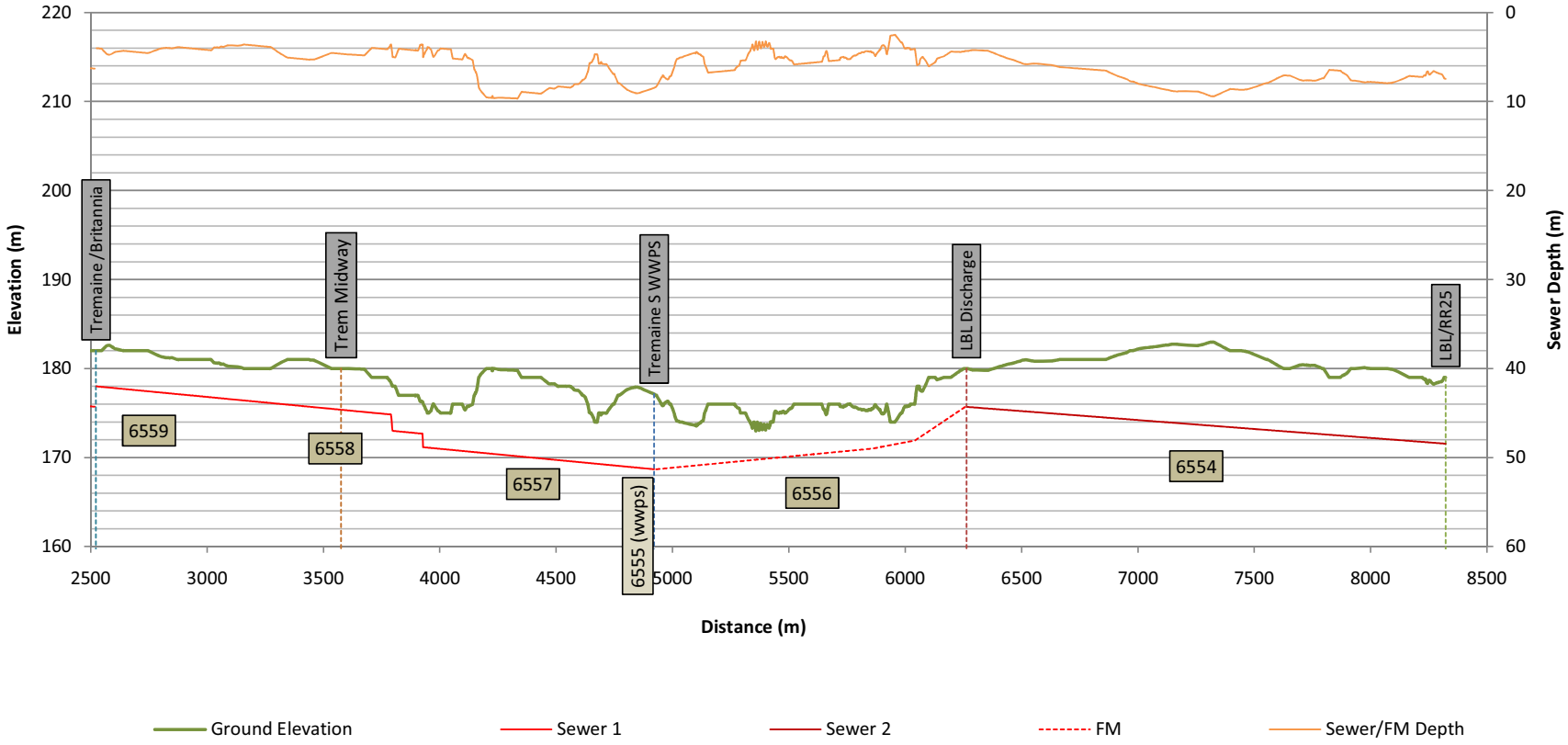
Sustainable Halton
Water and Wastewater Master Plan

Pump Station Site Analysis: Project No. 6555
17 MLD WWPS at Lower Base Line and Tremaine Rd

AECOM

1:4,000
30 Sep 2011
File: 60114062-370-WW

Southwest Milton Sewer/Forcemain Profile



THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: South Tremaine

Average Day DWF	Res	275	L/cap/day
	Ind	410	L/emp/day
	Comm	260	L/emp/day
	Inst	135	L/emp/day
Peak Extraneous Flow		0.286	L/s/ha
Manning's Roughness Coef.		0.013	

$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Total					Adjusted					Cumulative Adjusted					Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
					Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area						
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
Southwest Milton to South Tremaine WWPS	#6561 - South Education Village	430.01	100%	100%	-	5	526	947	36	0	5	526	947	36	-	5	526	947	36	3.09	970	3.81	10.39	11.76	22.15
	#6559 - Tremaine	431.02	100%	100%	-	410	89	5	32	0	410	89	5	32	-	415	615	952	68	5.31	1,668	3.65	19.46	19.35	38.81
		431.03	100%	100%	-	1,299	281	15	97	0	1299	281	15	97	-	1,714	896	967	165	12.34	3,877	3.35	47.29	41.29	88.57
	#6558 - Tremaine Rd	431.01	100%	100%	-	853	186	10	65	0	853	186	10	65	-	2,567	1,082	977	230	16.96	5,330	3.22	65.91	54.61	120.51
		431.05	100%	100%	-	541	167	9	62	0	541	167	9	62	-	3,108	1,249	985	292	20.05	6,298	3.15	83.54	63.16	146.70
	#6557 - Tremaine Rd	431.04	100%	100%	-	1,084	235	12	85	0	1084	235	12	85	-	4,192	1,484	998	377	25.92	8,143	3.04	107.74	78.86	186.60
	#6555 - South Tremaine WWPS																								186.60
	#6554 - Gravity to RR25																								186.60

Project No. 6555 - Tremaine Rd South WWPS			
Alternatives No.	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	Pump Station is located on the west side of Tremaine Rd, approximately 600 m north of Lower Base Line	Pump Station is located on the east side of Tremaine Rd, approximately 400 m north of Lower Base Line	Pump Station is located on the east side of Tremaine Rd, approximately 150 m north of Lower Base Line
Environmental	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located approximately 50m from the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only). Site is located approximately 40m from the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only). Site is located approximately 50m from the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.
Technical	Site located adjacent to creek, providing a short distance ~300m for emergency overflow pipe Site is located within the urban boundary expansion area Shorter gravity sewer along Tremaine Rd Longer forcemain to reach discharge point on Lower Base Line Greenfield Construction. Low potential for conflict with utilities. Good access to Tremaine Rd	Site located adjacent to creek, providing a short distance ~90m for emergency overflow pipe Site is located outside of the urban boundary expansion area and will require a gravity sewer extention to connect to the WWPS Longer section of ~8m deep gravity sewer along Tremaine Rd required Shorter forcemain to reach discharge point on Lower Base Line Greenfield Construction. Low potential for conflict with utilities Good access to Tremaine Rd	Site located adjacent to creek, providing a short distance ~200m for emergency overflow pipe Site is located outside of the urban boundary expansion area and will require a gravity sewer extention and creek crossing to connect to the WWPS Longer section of ~8m deep gravity sewer along Tremaine Rd required Gravity sewer crossing of creek required Shorter forcemain to reach discharge point on Lower Base Line Greenfield Construction. Low potential for conflict with utilities Good access to Tremaine Rd
Socio / Cultural	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Tremaine Rd during construction. Site is located near several residences and farms. Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Tremaine Rd during construction. Site is located near several residences and farms. Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Tremaine Rd during construction. Site is located near several residences and farms. Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations.
Financial	Pump Station construction and depth same as other alternatives. Highest forcemain distance/cost. Longer overflow distance	Pump Station construction and depth same as other alternatives. Moderate forcemain distance/cost. Moderate overflow distance	Pump Station construction and depth same as other alternatives. Lowest forcemain distance/cost. Short overflow distance
Legal / Jurisdictional	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.
Overall Score	**Moderate**	**High**	**Moderate**

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	28-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6555
Prepared/Updated By:	AECOM		

Project Description:

17 ML/d WWPS on Tremaine Rd (200 L/s)

Scope of Work:

17 ML/d (200 L/s) WWPS on the west side of Tremaine Rd approximately 400 m north of Lower Baseline. This pumping station will pump flows coming from project #6557 south along Tremaine Rd and then east along Lower Base Line via WWFM project #6556. The pump station is located near Conservation Halton Designated Lands. An emergency overflow is planned to run from the station to approximately 400m south, discharging to the unnamed tributary to Bronte Creek.

Project Justification:

Wastewater network upgrade required to service future growth areas in the south west of Milton. New wastewater pumping station designed to pump upstream flow generated from Milton west and south west over the unnamed tributary to Bronte Creek environmental feature. The flow will be conveyed east on a new gravity sewer (#6554), then south via the new RR25/Boyne trunk sewer, and will ultimately discharge to the Mid-Halton WWTP. The pump station is located near Conservation Halton Designated Lands.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population and employment growth in southwest Milton

Project Timing:

In Service:	2026	Design:	2023
Class EA:	B	Construction:	2024

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

Land acquisition required (approximately 0.25ha)
Property cost included in cost estimate

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	Wet Well Construction
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Direct Submission
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Phase 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Evaluation Matrix attached
Site Alternative Map attached
Alternative #2 Preferred

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6570

Project Description: 24 MLD WWPS at 10 Side Rd/9th Line (275 L/s)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET SUMMARY

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6570
Prepared/Updated By:	AECOM		

Project Name/Description:

24 MLD WWPS at 10 Side Rd/9th Line (275 L/s)

Project Need:

Wastewater network upgrade required to alleviate future capacity constraints at the Georgetown WWTP by pumping south portion of the existing flow westwards to the main 8th Line trunk sewer. Also, this project is required to match the lake-water supply strategy for overall water balance.

Evaluation:

WWPS sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. A gravity only solution was not considered feasible due to increased depths and creek crossing. The alternative pumping station sites 1 and 2 that were considered in the evaluation were relatively in close proximity to one another, while site 3 was approximately 950m west

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
• Environmental/Natural Heritage: Site is not within any Niagara Escarpment or other environmentally sensitive area. Site Alternative #3 is adjacent to Conservation Halton Regulation Limit Area. Wastewater forcemain #6567alignment crosses Conservation Halton Regulation Limit Area and tributary of East 16 Mile Creek.
• Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
• Transport: The site fronts an existing road right-of-way (Ninth Line/ No 10 Sideroad)
• Crossing: One Bridge/Creek Crossing for wastewater forcemain #6567

Selection of Preferred Servicing Alternative:

Three alternative station sites were evaluated as follows:
• Alternative 1 – Site located on the southeast corner of No 10 Sideroad and 9th Line.
• Alternative 2 – Site located on the southwest corner of No 10 Sideroad and 9th Line.
• Alternative 3 – Site located on the east side of East 16 Mile Creek on the south side of No 10 Sideroad.

Alternative 2 was selected as the preferred site for the No 10 Sideroad Wastewater Pumping Station. The site provides shorter deep gravity sewer distance and has fewer road crossings. The site is located just outside of the existing urban boundary expansion area and is not within the Conservation Halton Designated Lands. Approximately 0.25ha will be required.

Site Requirements:

- Feasible option in line with current planning
- Minimize impact on local population and the environment
- Minimize financial outlay
- The construction of 275 L/s wastewater pumping station will require a footprint of approximately 50m x 50m or 0.25 ha
- Power availability

Legend

Preferred Wastewater Infrastructure

- Wastewater Pumping Station

Preferred Linear Alignments

- Preferred Forcemain Alignment
- Preferred Alignment
- Potential Emergency Overflow
- Site Alternatives

Environmental Features

- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Parcel Fabric
- Lakes Rivers and Creeks

Georgetown

New developments

In system emergency overflow to Georgetown WWTP

Alternative 1

Alternative 2 (Preferred)

Alternative 3

Local residence

East Sixteen Mile Creek

6586

6506

6570

6567

6568

No 10 Sideroad

Eighth Line

Ninth Line

Argyll Rd

Bowman St

Robinson Rd

Harrop Ave

Orchard Ave

Ballantine Dr

Danby Rd

Woodcote Cres

Mountainview Rd S

La Roche Ave

Goldham Way

Morningside Dr

Chetholme Pl

Barber Dr

Lily Lane

Snowberry Cres

Assumes pipe on road alignment

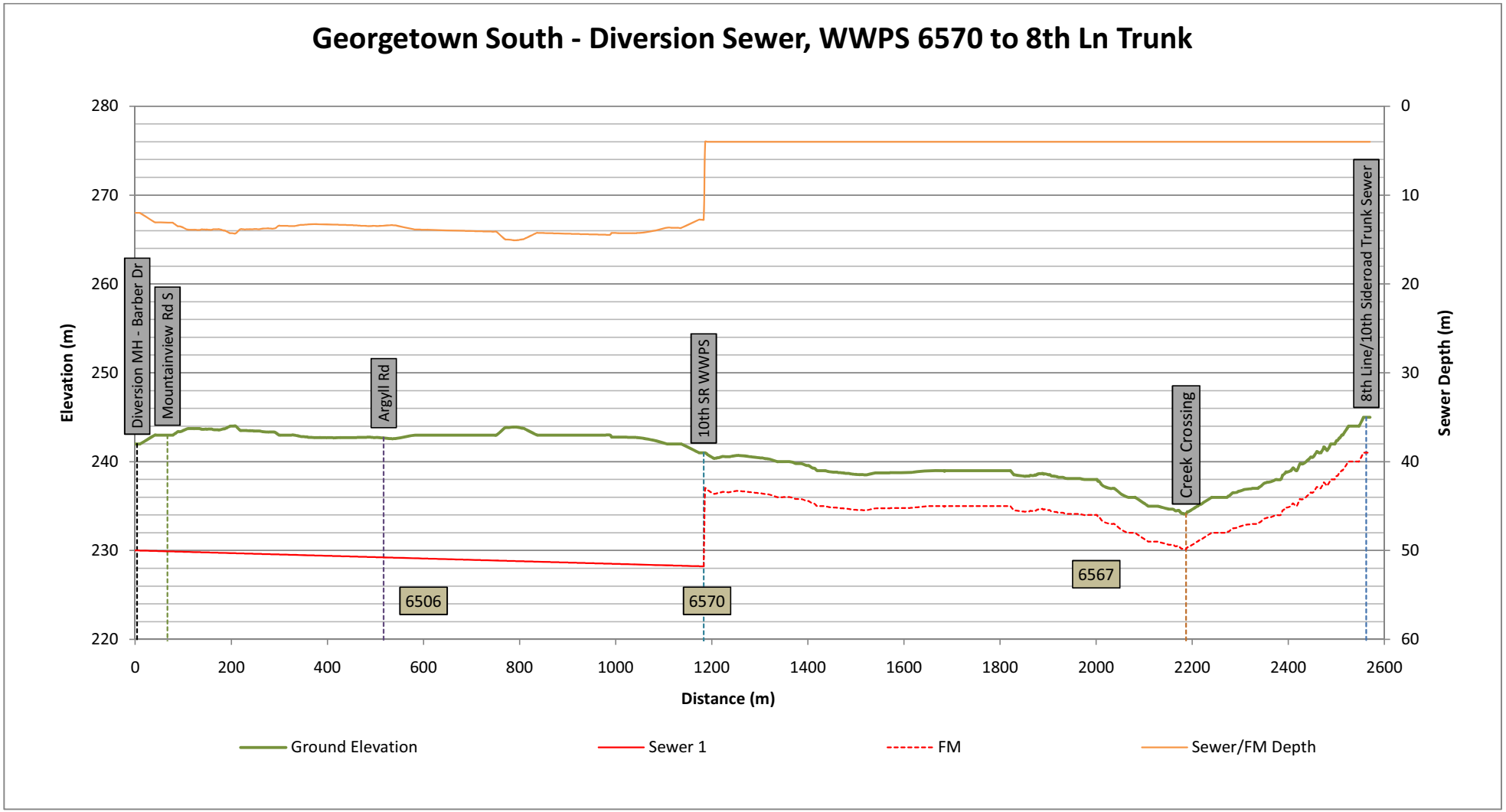
Halton Region

Sustainable Halton
Water and Wastewater Master Plan

Pump Station Site Analysis: Project No. 6570
24 MLD WWPS at 10 Side Road/9th Line

AECOM

1:7,500
03 Oct 2011
File: 60114062-157-WW


Georgetown South - Diversion Sewer, WWPS 6570 to 8th Ln Trunk
Elevation (m)
Sewer Depth (m)
Distance (m)
280
270
260
250
240
230
220
0
10
20
30
40
50
60
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
Diversion MH - Barber Dr
Mountainview Rd S
Argyll Rd
10th SR WWPS
Creek Crossing
8th Line/10th Sideroad Trunk Sewer
6506
6570
6567
Ground Elevation
Sewer 1
FM
Sewer/FM Depth

THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Georgetown South

Average Day DWF	Res	275	L/cap/day
	Ind	410	L/emp/day
	Comm	260	L/emp/day
	Inst	135	L/emp/day
Peak Extraneous Flow		0.286	L/s/ha
Manning's Roughness Coef.		0.013	

$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

					Total					Adjusted					Cumulative Adjusted									
Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area	Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
2031 Georgetown South Peel Off		561.00	100%	100%	2,298	146	136	-	91	2298	146	136	0	91	2,298	146	136	-	91	8.42	2,644	3.49	26.08	29.36	55.44
		562.01	100%	80%	3,316	6	34	-	77	3316	6	34	0	62	5,614	152	170	-	153	19.10	6,001	3.17	43.67	60.56	104.23
		562.02	100%	100%	19	-	-	141	6	19	0	0	141	6	5,633	152	170	141	159	19.38	6,090	3.16	45.49	61.34	106.83
		564.01	50%	10%	1,059	1	-	-	40	530	0	0	0	4	6,163	152	170	141	163	21.07	6,620	3.13	46.64	65.95	112.59
		564.03	100%	75%	4,075	4	89	95	153	4075	4	89	95	115	10,238	156	259	236	278	34.48	10,832	2.92	79.52	100.68	180.19
		563.01	100%	100%	195	-	-	-	8	195	0	0	0	8	10,433	156	259	236	286	35.10	11,027	2.91	81.78	102.22	184.00
		563.02	100%	100%	1,691	-	-	-	10	1691	0	0	0	10	12,124	156	259	236	296	40.48	12,718	2.85	84.70	115.38	200.08
		563.03	100%	100%	320	-	-	-	25	320	0	0	0	25	12,444	156	259	236	321	41.50	13,038	2.84	91.79	117.84	209.63
	#6570 & 6506 - Georgetown South WWPS	563.04	100%	100%	2,009	-	3	3	76	2009	0	3	3	76	14,454	156	262	239	396	47.91	15,052	2.78	113.39	133.03	246.42

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	3	IPFS:	6570
Prepared/Updated By:	AECOM		

Project Description:

24 MLD WWPS at 10 Side Rd/9th Line (275 L/s)

Scope of Work:

The new 24 MLD (275 L/s) WWPS will be constructed at the southwest corner of 10th Side Road and 9th Line. This project will be constructed in order to pump flow from the existing Georgetown South residential development westwards, via the new Twinned 300 mm WWFM (#6567) on 10th Side Rd from 9th Ln to 8th Ln (Project # 6567), this project will discharge to the 8th Line trunk sewer (Project # 6586). An in-system emergency overflow is planned for this station at the existing upstream connection manhole. An emergency failure at the station will result in flow being re-directed north to the Georgetown WWTP.

Project Justification:

Wastewater network upgrade required to alleviate future capacity constraints at the Georgetown WWTP by pumping south portion of the existing flow westwards to the main 8th Line trunk sewer. Also, this project is required to match the lake-water supply strategy for overall water balance.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Capacity constraints at the Georgetown WWTP. Initially, the project will be triggered by the need to achieve minimum flow/velocity within the 8th Line/Trafalgar Trunk Sewer during early stages of development of Georgetown Southwest Greenfield Growth Area. Ultimately, future capacity constraints at the Georgetown WWTP will require the construction of the WWPS and flow diversion to the Mid-Halton WWTP catchment area.

Project Timing:

In Service:	2020	Design:	2017
Class EA:	B	Construction:	2018

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing or benefit to existing.

Property Requirements:

Land acquisition required (0.25 ha)
Cost of land included in cost estimate

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		Wet well construction
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Direct Submission
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Phase 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit	X		Req consultation with CVC/CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Evaluation matrix attached
Site Alternative Map attached
Alternative #2 preferred

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

• 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.

Circulation:	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6571

Project Description: 104 ML/d WWPS on Trafalgar Rd/ Britannia Rd (1200 L/s)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET SUMMARY

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6571
Prepared/Updated By:	AECOM		

Project Name/Description:

104 ML/d WWPS on Trafalgar Rd/ Britannia Rd (1200 L/s)

Project Need:

New wastewater pumping station is designed to pump upstream flow generated from Georgetown, Milton east & HH 401 growth corridor over the East Sixteen Mile Creek environmental feature. Initially, the flow will be conveyed to WWPS #5069/6427 via #6507 and #5067 as an interim servicing solution. Ultimately, the flows will be conveyed south via projects 6580, 6581 and 6582 and pumped west by the new Lower Base Line WWPS/WWFM #6584/6585 to the new RR25/Boyne trunk sewer.

Evaluation:

WWPS sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. A gravity only solution was not considered feasible due to increased depths and creek crossing. The alternative pumping station sites considered in the evaluation were all relatively in close proximity to one another.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site #1 and #2 are within close proximity to the Conservation Halton Regulation Limit. Site Alternative #3 lies within the Conservation Halton Regulation Limit Area. Wastewater forcemain #6579 alignment crosses Conservation Halton Regulation Limit Area and East 16 Mile Creek.
- Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
- Transport: The site fronts an existing road right-of-way (Britannia Rd)
- Crossing: One Bridge/Creek Crossing for wastewater forcemain #6579

Selection of Preferred Servicing Alternative:

Three alternative station sites were evaluated as follows:
- Alternative 1 – Site located on the north side of Britannia Rd approximately 85 m east of Trafalgar Rd
- Alternative 2 – Site located on the south side of Britannia Rd approximately 105 m east of Trafalgar Rd
- Alternative 3 – Site located on the east side of Trafalgar Rd approximately 100 m east of Trafalgar Rd

Alternative 1 was selected as the preferred site for the Trafalgar Rd/Britannia Rd Wastewater Pumping Station. The site lies within the urban boundary expansion and outside of the Conservation Halton Regulation Limit. The site lies within a farm adjacent to an existing severed lot. Approximately 0.25ha will be required.

Site Requirements:

- Feasible and technically viable option in line with current planning
- Minimize impact on local population and the environment
- Minimize financial outlay
- The construction of 1200 L/s wastewater pumping station will require a footprint of approximately 50m x 50m or 0.25 ha
- Power availability

Legend

Preferred Wastewater Infrastructure
- Wastewater Pumping Station

Preferred Linear Alignments
- Preferred Forcemain Alignment
- Preferred Alignment
- Potential Emergency Overflow
- Site Alternatives

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Parcel Fabric
- Lakes, Rivers and Creeks

East Sixteen Mile Creek

Local residences

Alternative 1 (Preferred)

Alternative 2

Alternative 3

Local residences

6577

6578

6571

6499

Britannia Rd E

Trafalgar Rd

Assumes pipe on road alignment

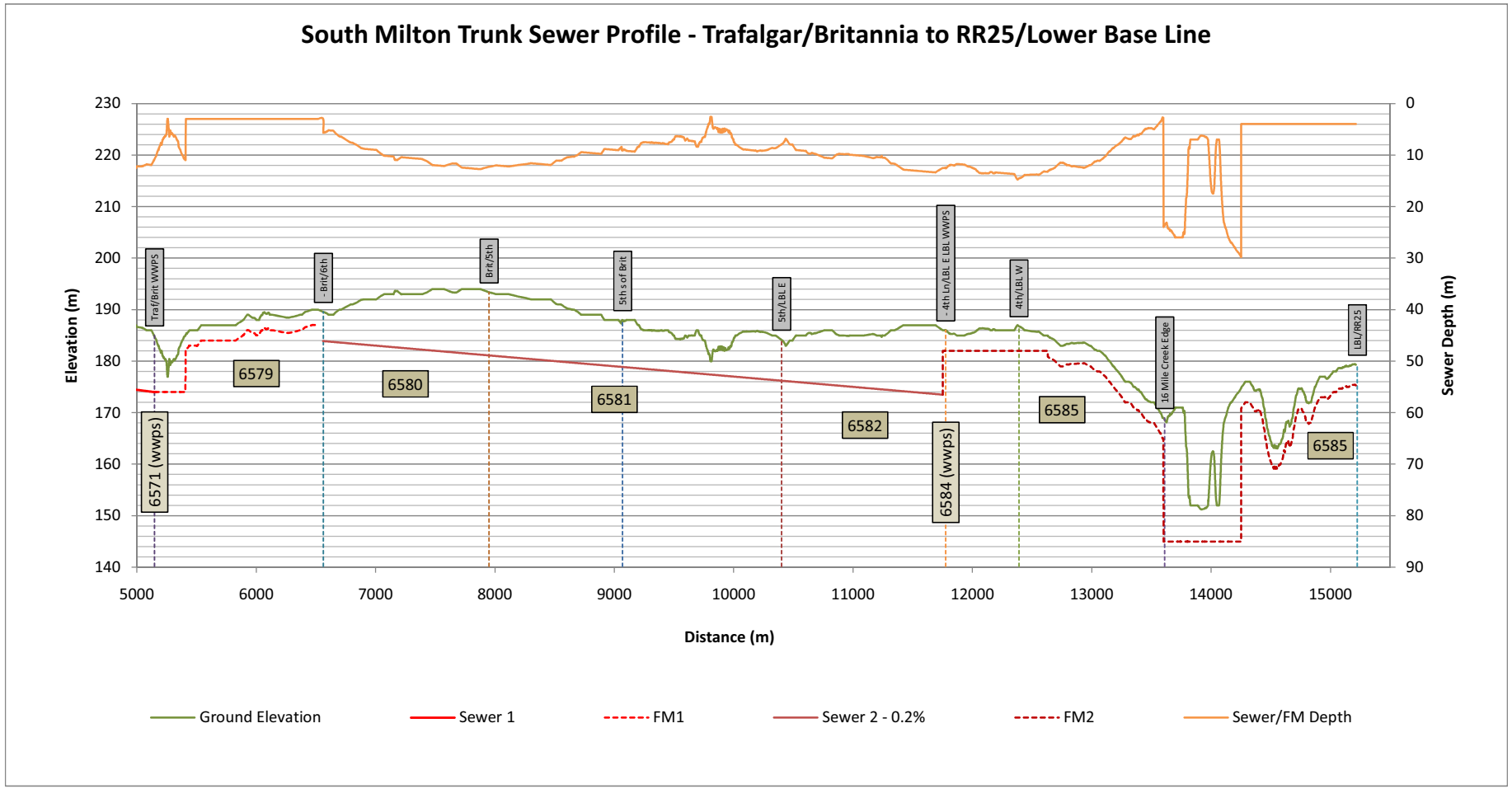
Halton Region

Sustainable Halton
Water and Wastewater Master Plan

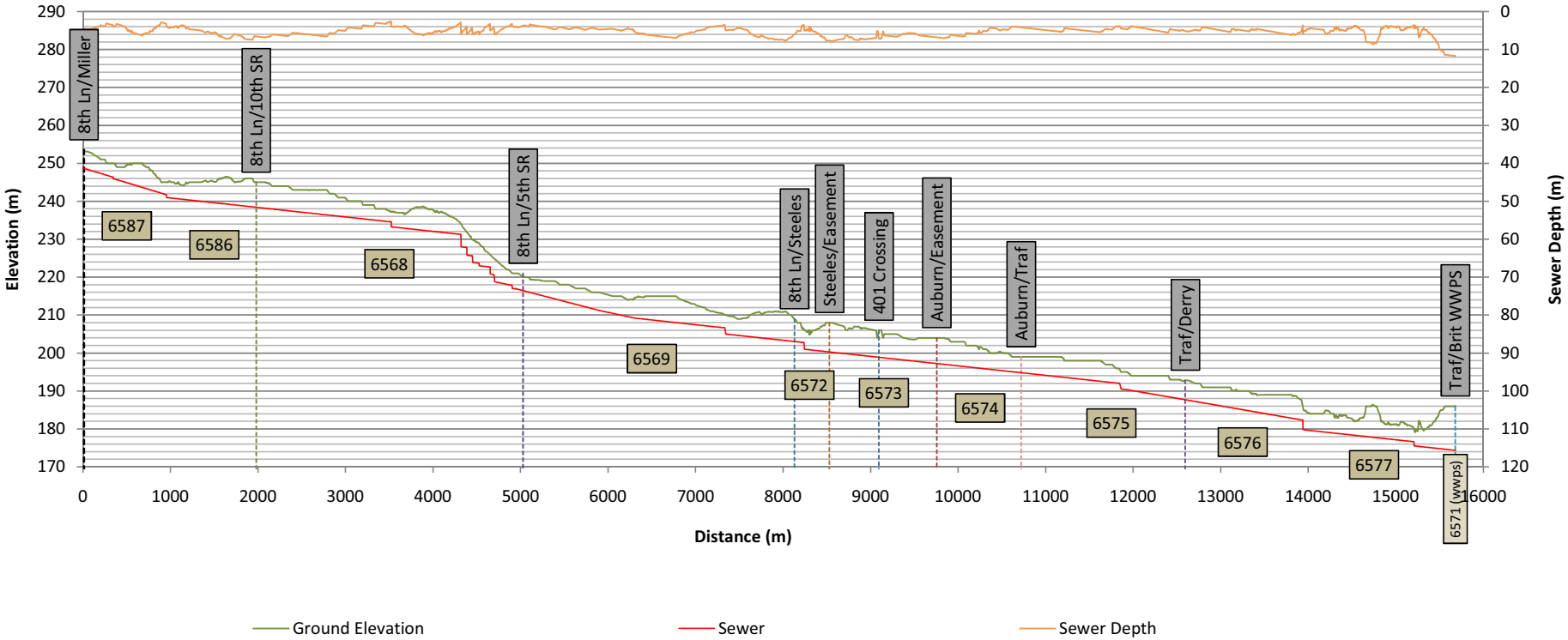
Pump Station Site Analysis: Project No. 6571
104 MLD WWPS on Trafalgar Rd/Britannia Rd

AECOM

1:3,500
30 Sep 2011
File: 60114062-156-WW


South Milton Trunk Sewer Profile - Trafalgar/Britannia to RR25/Lower Base Line
Elevation (m)
Sewer Depth (m)
Distance (m)
230
220
210
200
190
180
170
160
150
140
0
10
20
30
40
50
60
70
80
90
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
Traf/Brit WWPS
Brit/6th
Brit/Sth
Sth s of Brit
Sth/LBL E
4th Ln/LBL E LBL WWPS
4th/LBL W
16 Mile Creek Edge
LBL/RR25
6571 (wwps)
6579
6580
6581
6582
6584 (wwps)
6585
6585
Ground Elevation
Sewer 1
FM1
Sewer 2 - 0.2%
FM2
Sewer/FM Depth

8th Line Trunk Sewer Profile - Georgetown to Britannia/Trafalgar WWPS



THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Georgetown to East Milton

Average Day DWF
Res 275 L/cap/day
Ind 410 L/emp/day
Comm 260 L/emp/day
Inst 135 L/emp/day
Peak Extraneous Flow 0.286 L/s/ha
Manning's Roughness Coef. 0.013
$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Total					Adjusted					Cumulative Adjusted					Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
					Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area						
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
2031 Georgetown South Peel Off		561.00	100%	100%	2,298	146	136	-	91	2298	146	136	0	91	2,298	146	136	-	91	8.42	2,644	3.49	26.08	29.36	55.44
		562.01	100%	80%	3,316	6	34	-	77	3316	6	34	0	62	5,614	152	170	-	153	19.10	6,001	3.17	43.67	60.56	104.23
		562.02	100%	100%	19	-	-	141	6	19	0	0	141	6	5,633	152	170	141	159	19.38	6,090	3.16	45.49	61.34	106.83
		564.01	50%	10%	1,059	1	-	-	40	530	0	0	0	4	6,163	152	170	141	163	21.07	6,620	3.13	46.64	65.95	112.59
		564.03	100%	75%	4,075	4	89	95	153	4075	4	89	95	115	10,238	156	259	236	278	34.48	10,832	2.92	79.52	100.68	180.19
		563.01	100%	100%	195	-	-	-	8	195	0	0	0	8	10,433	156	259	236	286	35.10	11,027	2.91	81.78	102.22	184.00
		563.02	100%	100%	1,691	-	-	-	10	1691	0	0	0	10	12,124	156	259	236	296	40.48	12,718	2.85	84.70	115.38	200.08
		563.03	100%	100%	320	-	-	-	25	320	0	0	0	25	12,444	156	259	236	321	41.50	13,038	2.84	91.79	117.84	209.63
	#6570 & 6506 - Georgetown South WWPS	563.04	100%	100%	2,009	-	3	3	76	2009	0	3	3	76	14,454	156	262	239	396	47.91	15,052	2.78	113.39	133.03	246.42
	Flow from Main St WWPS														5,295	380	717	427	336	21.48	6,749	3.12	96.14	67.06	163.20
		558.03	100%	75%	2,374	1	94	40	42	2374	1	94	40	31	7,668	381	811	467	368	29.39	9,233	2.99	105.11	87.84	192.95
	#6587 - 8th Line Miller to Argyll	558.04	60%	60%	11,185	6	717	324	261	6711	4	430	194	157	14,380	385	1,241	662	524	52.36	16,452	2.74	149.94	143.36	293.30
		558.04	40%	40%	11,185	6	717	324	261	4474	2	287	130	105	18,854	387	1,528	791	629	67.68	21,264	2.63	179.83	177.71	357.55
	#6586 - 8th Line Argyll to 10th Sideroad	558.02	50%	50%	4,660	3	319	136	107	2330	2	160	68	53	21,184	389	1,688	859	682	75.69	23,781	2.58	195.07	195.07	390.14
		558.02	50%	50%	4,660	3	319	136	107	2330	2	160	68	53	23,514	390	1,847	927	735	83.70	26,297	2.53	210.31	212.07	422.39
	#6568 & 6569 - 8th Line 10th Sideroad to Steeles A	558.01	50%	25%	637	-	43	18	16	319	0	22	9	4	38,286	547	2,131	1,175	1,136	132.70	41,693	2.34	324.86	310.37	635.23
		555.03	100%	100%	62	1,933	498	67	124	62	1933	498	67	124	38,349	2,480	2,629	1,242	1,260	143.68	45,141	2.31	360.44	331.34	691.78
		554.02	100%	100%	-	857	189	29	44	0	857	189	29	44	38,349	3,337	2,818	1,271	1,305	148.36	46,611	2.29	373.17	340.19	713.36
		554.04	100%	100%	99	2,056	480	338	131	99	2056	480	338	131	38,447	5,393	3,298	1,609	1,436	160.40	50,395	2.26	410.75	362.73	773.47
		553.01	100%	100%	-	1,515	395	11	139	0	1515	395	11	139	38,447	6,908	3,693	1,620	1,575	168.80	53,033	2.24	450.43	378.25	828.68
		553.02	100%	100%	-	869	237	59	74	0	869	237	59	74	38,447	7,777	3,930	1,679	1,649	173.73	54,581	2.23	471.71	387.30	859.01
	#6572 - Steeles Ave	552.01	50%	50%	-	581	919	12	78	0	291	460	6	39	38,447	8,067	4,389	1,685	1,688	176.50	55,452	2.22	482.85	392.36	875.21
	#6573 - Trafalgar s of 401	436.03	50%	50%	-	1,498	-	-	114	0	749	0	0	57	38,447	8,816	4,389	1,685	1,746	180.05	56,568	2.22	499.22	398.84	898.06
	#6574 - Auburn Rd	436.03	50%	30%	-	1,498	-	-	114	0	749	0	0	34	38,447	9,565	4,389	1,685	1,780	183.60	57,685	2.21	509.04	405.29	914.33
	#6574 & 6575 - Trafalgar Trunk	436.04	100%	75%	-	785	-	-	85	0	785	0	0	64	38,447	10,350	4,389	1,685	1,843	187.33	58,856	2.20	527.21	412.03	939.24
		436.06	100%	50%	-	1,038	-	-	166	0	1038	0	0	83	38,447	11,388	4,389	1,685	1,926	192.26	60,403	2.19	550.91	420.90	971.81
	#6503 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	723	-	-	46	3.43	1,077	3.78	13.27	12.96	26.23
	#6497 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	1,445	-	-	93	6.86	2,154	3.56	26.55	24.41	50.96
2031 Peak WW Flow to Britannia/Trafalgar WWPS	#6576 - Trafalgar Trunk														38,447	12,833	4,389	1,685	2,019	199.11	62,557	2.18	577.46	433.18	1010.64
		435.05	50%	30%	9,848	33	1,259	454	401	4924	17	630	227	120	43,371	12,850	5,019	1,912	2,139	217.11	68,212	2.14	611.89	465.05	1076.95
		435.04	100%	10%	831	19	159	33	224	831	19	159	33	22	44,202	12,869	5,178	1,945	2,162	220.38	69,239	2.14	618.31	470.79	1089.10
	#6504 & 6498 - Trafalgar Sub-Trunk 2	435.05	40%	25%	9,848	33	1,259	454	401	3939	13	504	181	100	3,939	13	504	181	100	14.40	4,524	3.28	28.70	47.30	76.00
	#6577 - Trafalgar Trunk														48,141	12,882	5,681	2,127	2,262	234.78	73,763	2.11	647.01	495.88	1142.88
	Direct to WWPS	435.03	100%	60%	926	3	148	42	40	926	3	148	42	24	926	3	148	42	24						
	#6505 & 6499 - Trafalgar Sub-Trunk 4	435.05	10%	10%	9,848	33	1,259	454	401	985	3	126	45	40	985	3	126	45	40	3.60	1,131	3.76	11.48	13.55	25.03
	#6578 - Trafalgar Sub-Trunk 3	433.04	100%	90%	3,791	-	470	159	110	3791	0	470	159	99	3,791	-	470	159	99	13.73	4,313	3.30	28.43	45.36	73.79
	#6578 - Trafalgar Sub-Trunk 3	433.03	100%	90%	2,528	-	347	106	90	2528	0	347	106	81	6,319	-	817	265	181	22.98	7,221	3.09	51.66	71.10	122.76
	#6571 - Brit/Traf WWPS														56,371	12,888	6,772	2,479	2,507	264.83	83,206	2.07	717.04	547.39	1264.43

Project No. 6571 - Britannia Rd/Trafalgar Rd WWPS			
Alternatives No.	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	Pump Station site is located on the north side of Britannia Rd approximately 85 m east of Trafalgar Rd	Pump Station site is located on the south side of Britannia Road approximately 105 m east of Trafalgar Road.	Pump Station site is located on the east side of Trafalgar Rd, approximately 100 m south of Britannia Rd
Environmental	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located approximately 100 m from the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located approximately 50 m from the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located within the Conservation Halton Regulation Area No watercourses on site. No ANSIs/ESAs on site.
Technical	Site is located immediately adjacent to the preferred alignment and the environmental crossing that it is designed to mitigate. Greenfield Construction. Moderate potential for conflict with utilities. Good access to local power supply Approximately equal forcemain length All sites have short emergency overflow distance to 16 Mile Creek Good access to Britannia/Trafalgar Road.	Site is located immediately adjacent to the preferred alignment and the environmental crossing that it is designed to mitigate. Greenfield Construction. Moderate potential for conflict with utilities. Good access to local power supply Approximately equal forcemain length All sites have short emergency overflow distance to 16 Mile Creek Good access to Britannia/Trafalgar Road.	Site is located immediately adjacent to the preferred alignment and the environmental crossing that it is designed to mitigate. Greenfield Construction. Moderate potential for conflict with utilities. Good access to local power supply Approximately equal forcemain length All sites have short emergency overflow distance to 16 Mile Creek Good access to Britannia/Trafalgar Road.
Socio / Cultural	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along /Britannia/Trafalgar Road during construction. Traffic will affect local residents Site has very few local residences to the east and west; there is low potential for visual issues for local residents. Moderate potential impact on nearby landowners, but construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Located adjacent to existing severed lot	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along /Britannia/Trafalgar Road during construction. Traffic will affect local residents Site has very few local residences to the east and west; there is low potential for visual issues for local residents. Moderate potential impact on nearby landowners, but construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Site will require severing of lot	Site is located in a wooded area. Minimal traffic disruptions / disturbance expected along /Britannia/Trafalgar Road during construction. Traffic will affect local residents Site has very few local residences to the east and west; there is low potential for visual issues for local residents. High potential impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Site will require severing of lot
Financial	Pump Station construction and depth same for all alternatives Potential need for an additional 100 m of forcemain and a second crossing (Trafalgar alignment to be confirmed). Greater cost for traffic control during construction at a busy intersection.	Pump Station construction and depth same for all alternatives Potential need for an additional 100 m of forcemain and a second crossing (Trafalgar alignment to be confirmed). Possibility of an additional road crossing (to be confirmed in detailed design stage).	Pump Station construction and depth same for all alternatives Reduces the need for the additional 100 m of forcemain and the second road crossing of Trafalgar Road (To be confirmed). Alternative should entail one less road crossing than alternatives 1 and 2, plus the extra 100 m main will not be required. Potential for further savings on tunnelling costs.
Legal / Jurisdictional	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 0.25 ha) is required Implementation risk due to limited property availability.
Overall Score	**High**	**Moderate**	**Moderate**

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6571
Prepared/Updated By:	AECOM		

Project Description:

104 ML/d WWPS on Trafalgar Rd/ Britannia Rd (1200 L/s)

Scope of Work:

New 104 ML/d (1200 L/s) WWPS on the north side of Britannia Rd, approximately 85m east of Trafalgar Rd. This project will pump flows from Georgetown, HH/401 Corridor and East Milton eastwards via WWFM project # 6579. The pump station is not within Conservation Halton Regulated Area. An emergency overflow is planned to run from the station to approximately 200 m west, discharging to 16 Mile Creek

Project Justification:

New wastewater pumping station is designed to pump upstream flow generated from Georgetown, Milton east & HH 401 growth corridor over the East Sixteen Mile Creek environmental feature. Initially, the flow will be conveyed to WWPS #5069/6427 via #6507 and #5067 as an interim servicing solution. Ultimately, the flows will be conveyed south via projects 6580, 6581 and 6582 and pumped west by the new Lower Base Line WWPS/WWFM #6584/6585 to the new RR25/Boyne trunk sewer.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population and employment growth in the south of Georgetown and Milton East

Project Timing:

In Service:	2020	Design:	2017
Class EA:	B	Construction:	2018

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

Land acquisition required (approximately 0.25 ha)
Property cost included in cost estimate

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		Wet well construction
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Direct Submission
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Phase 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Evaluation Matrix attached
Site Alternative Map attached
Alternative #1 Preferred

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

• 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.

Circulation:	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6572/6573/6574

Project Description: 1050 mm WWM crossing Highway 401 on Trafalgar Road

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET SUMMARY

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6572 6573 6574
Prepared/Updated By:	AECOM		

Project Name/Description:

1050 mm WWM on Steeles Ave from 8th Line to Crossing Easement, 1050 mm WWM on Crossing Easement from Steeles Ave to Auburn Rd and 1050 mm WWM on Auburn Rd from Crossing Easement to Trafalgar Rd

Project Need:

Wastewater network upgrade required to service future lakebased growth area in south Georgetown. These projects include two major environmental crossings and one Hwy 401 crossing. Opportunity to coordinate the crossing of the environmental feature with WM projects #4985 and #6689 for cost savings and potential efficiencies. These projects will receive flow diverted from Halton Hills WWPS #3, enabling the station to be decommissioned

Evaluation:

This sewer alignment involves two creek crossings as well as one Highway 401 crossing east of Trafalgar Rd. Alternative crossings were identified and evaluated based on the potential impacts to the natural features, elevations of creeks, depth of sewer and ability to decommission Halton Hills WWPS #3. Minimizing overall capital cost was also considered.

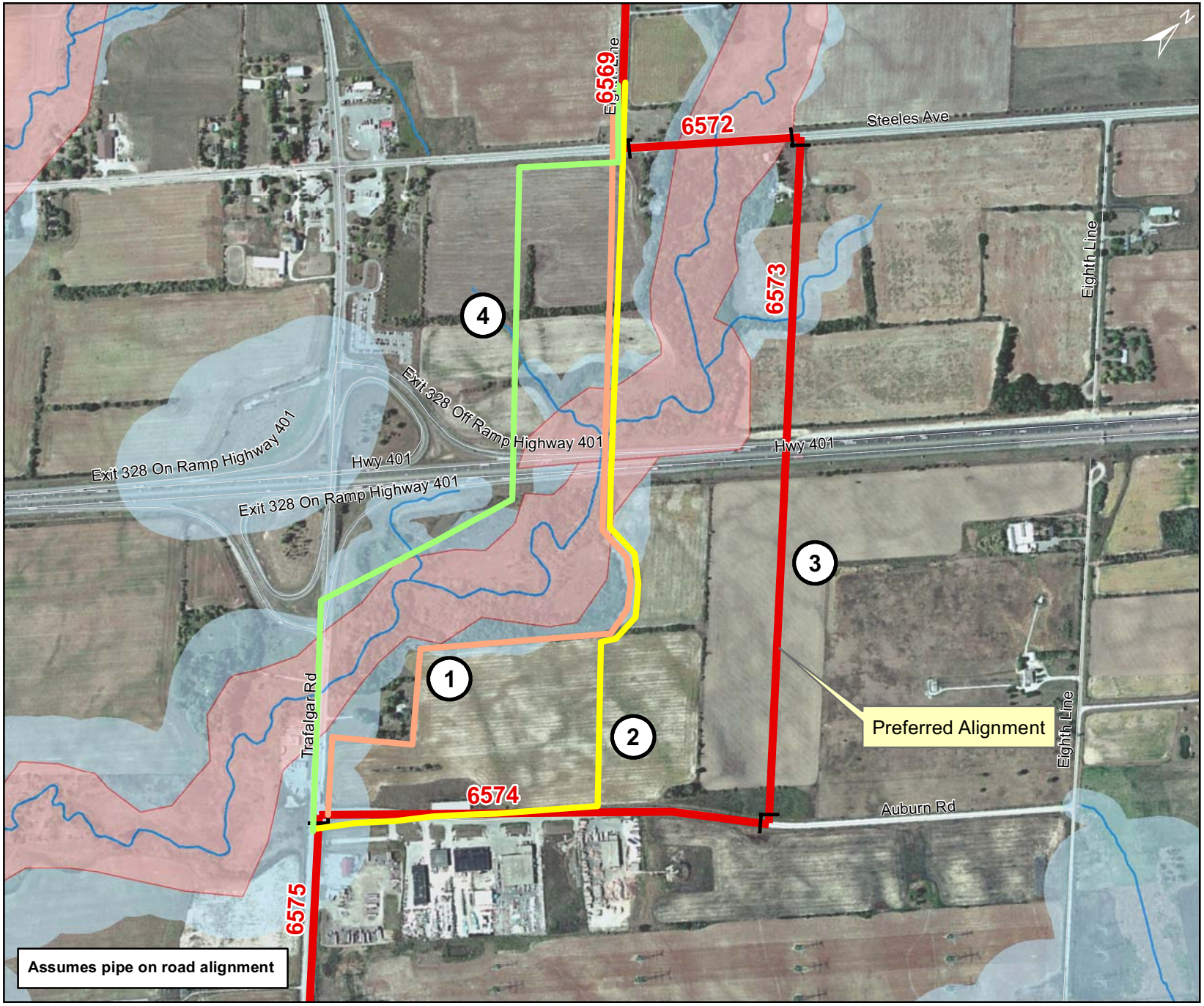
Special Consideration:

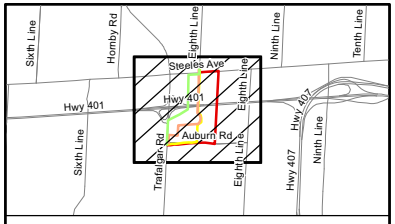
There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Alignment crosses two creeks and an ESA
- Cultural/Heritage: Existing land use is agricultural farming and employment. No significant impacts anticipated.
- Bridge Crossing: No bridge crossings are involved.
- Long Term Servicing: Not applicable.

Selection of Preferred Servicing Alternative:

Four alternative alignments were evaluated as follows:
- Alternative 1 – Wastewater gravity main runs from Steeles Ave/8th Line to Trfalgar Rd/Auburn Rd via the edge of the Greenlands
- Alternative 2 – Wastewater gravity main runs from Steeles Ave/8th Line to Trfalgar Rd/Auburn Rd via the edge of the Greenlands, crossing farmland
- Alternative 3 – Wastewater gravity main runs from Steeles Ave/8th Line to Trfalgar Rd/Auburn Rd via Steeles Ave, Auburn Rd and Crossing Easement approximately 375 m east of 8th Line.
- Alternative 4 – Wastewater gravity main runs from Steeles Ave/8th Line to trafalcar Rd/Auburn Rd via Steeles Ave, Trafalgar Rd and Crossing Easement near the Hwy 401 on/off ramps.

Alternative 3 was selected as the preferred alignment for the crossing of the environmental features and Hwy 401. This alignment facilitates the decommissioning of Halton Hills WWPS #3 and minimizes sewer length that lies within the Conservation Halton Regulated Area and ESAs. Tunnelling will be required for Creek and Hwy Crossings. The projects (6572, 6573) have been classified as Schedule “B” because they involve the crossing of a major highway and have potential for environmental impacts.





- Project Area

Legend

Existing Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant
- Wastewater Main

Proposed/Upgrade Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Pumping Station

Preferred Wastewate Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Lakes Rivers and Creeks
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

175 87.5 0 175 Meters

Halton Region
Sustainable Halton

Halton Wastewater Servicing - 401 Crossing Alternatives
IPFS ID: 6572/6573/6574

AECOM
Oct 03, 2011
1:10,000
60114062-315-WW

THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Georgetown to East Milton

Average Day DWF
Res 275 L/cap/day
Ind 410 L/emp/day
Comm 260 L/emp/day
Inst 135 L/emp/day
Peak Extraneous Flow 0.286 L/s/ha
Manning's Roughness Coef. 0.013
$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Total					Adjusted					Cumulative Adjusted					Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
					Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area						
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
2031 Georgetown South Peel Off		561.00	100%	100%	2,298	146	136	-	91	2298	146	136	0	91	2,298	146	136	-	91	8.42	2,644	3.49	26.08	29.36	55.44
		562.01	100%	80%	3,316	6	34	-	77	3316	6	34	0	62	5,614	152	170	-	153	19.10	6,001	3.17	43.67	60.56	104.23
		562.02	100%	100%	19	-	-	141	6	19	0	0	141	6	5,633	152	170	141	159	19.38	6,090	3.16	45.49	61.34	106.83
		564.01	50%	10%	1,059	1	-	-	40	530	0	0	0	4	6,163	152	170	141	163	21.07	6,620	3.13	46.64	65.95	112.59
		564.03	100%	75%	4,075	4	89	95	153	4075	4	89	95	115	10,238	156	259	236	278	34.48	10,832	2.92	79.52	100.68	180.19
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		563.02	100%	100%	1,691	-	-	-	10	1691	0	0	0	10	12,124	156	259	236	296	40.48	12,718	2.85	84.70	115.38	200.08
		563.03	100%	100%	320	-	-	-	25	320	0	0	0	25	12,444	156	259	236	321	41.50	13,038	2.84	91.79	117.84	209.63
	#6570 & 6506 - Georgetown South WWPS	563.04	100%	100%	2,009	-	3	3	76	2009	0	3	3	76	14,454	156	262	239	396	47.91	15,052	2.78	113.39	133.03	246.42
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		558.03	100%	75%	2,374	1	94	40	42	2374	1	94	40	31	7,668	381	811	467	368	29.39	9,233	2.99	105.11	87.84	192.95
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	#6586 - 8th Line Argyll to 10th Sideroad	558.02	50%	50%	4,660	3	319	136	107	2330	2	160	68	53	21,184	389	1,688	859	682	75.69	23,781	2.58	195.07	195.07	390.14
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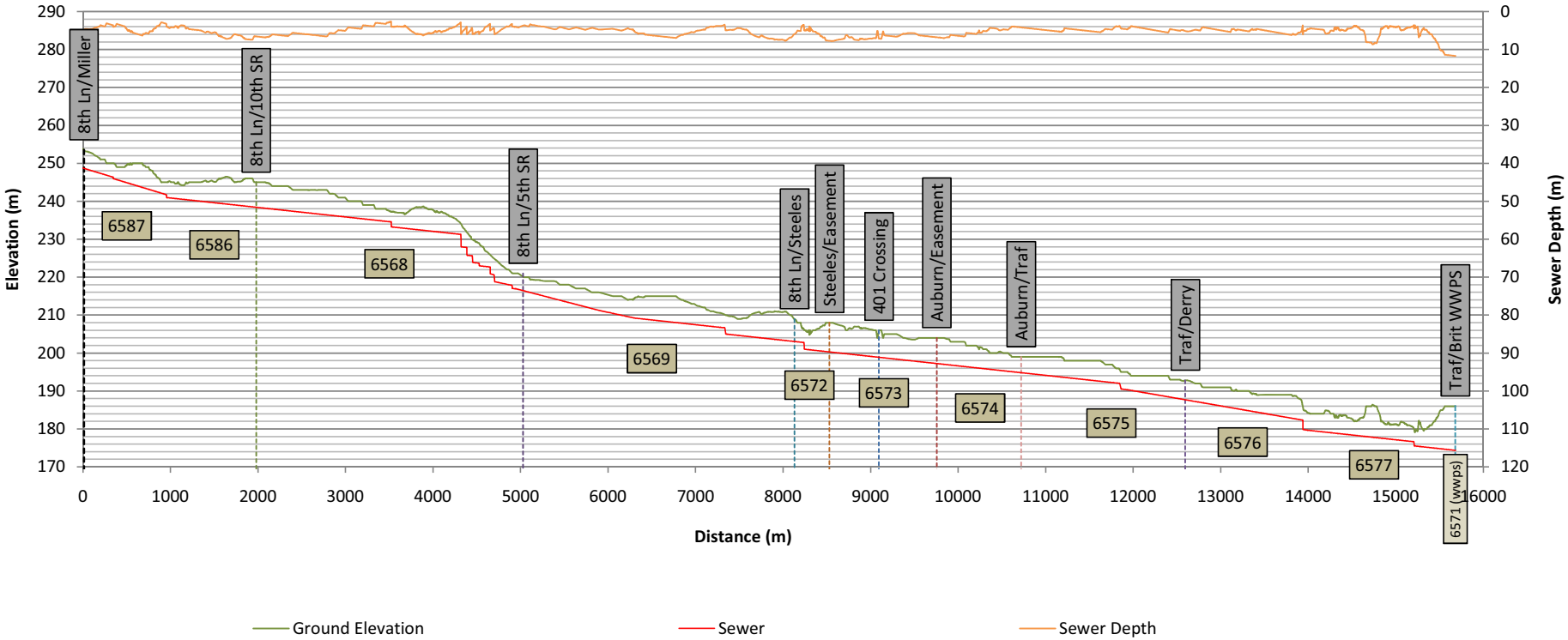
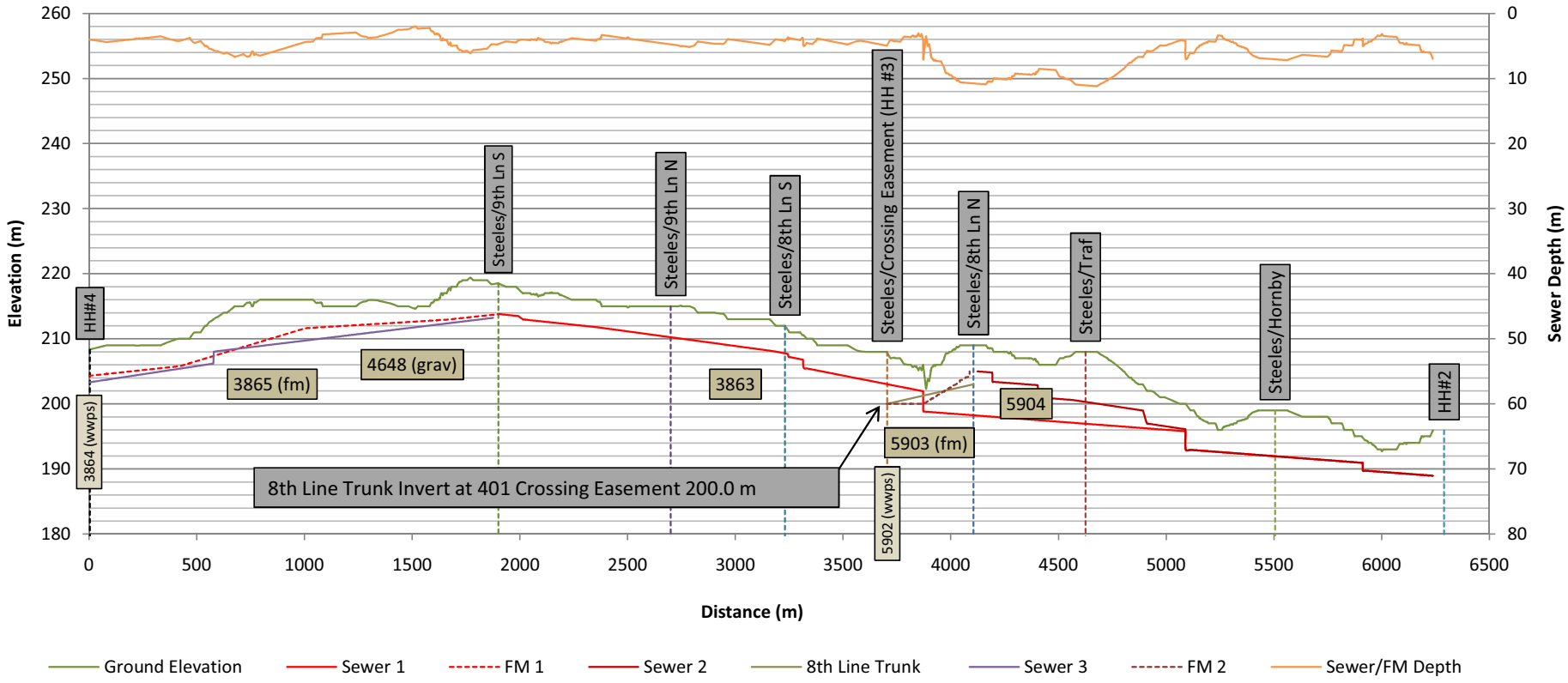
	#6568 & 6569 - 8th Line 10th Sideroad to Steeles A	558.01	50%	25%	637	-	43	18	16	319	0	22	9	4	38,286	547	2,131	1,175	1,136	132.70	41,693	2.34	324.86	310.37	635.23
		555.03	100%	100%	62	1,933	498	67	124	62	1933	498	67	124	38,349	2,480	2,629	1,242	1,260	143.68	45,141	2.31	360.44	331.34	691.78
		554.02	100%	100%	-	857	189	29	44	0	857	189	29	44	38,349	3,337	2,818	1,271	1,305	148.36	46,611	2.29	373.17	340.19	713.36
		554.04	100%	100%	99	2,056	480	338	131	99	2056	480	338	131	38,447	5,393	3,298	1,609	1,436	160.40	50,395	2.26	410.75	362.73	773.47
		553.01	100%	100%	-	1,515	395	11	139	0	1515	395	11	139	38,447	6,908	3,693	1,620	1,575	168.80	53,033	2.24	450.43	378.25	828.68
		553.02	100%	100%	-	869	237	59	74	0	869	237	59	74	38,447	7,777	3,930	1,679	1,649	173.73	54,581	2.23	471.71	387.30	859.01
	#6572 - Steeles Ave	552.01	50%	50%	-	581	919	12	78	0	291	460	6	39	38,447	8,067	4,389	1,685	1,688	176.50	55,452	2.22	482.85	392.36	875.21
	#6573 - Trafalgar s of 401	436.03	50%	50%	-	1,498	-	-	114	0	749	0	0	57	38,447	8,816	4,389	1,685	1,746	180.05	56,568	2.22	499.22	398.84	898.06
	#6574 - Auburn Rd	436.03	50%	30%	-	1,498	-	-	114	0	749	0	0	34	38,447	9,565	4,389	1,685	1,780	183.60	57,685	2.21	509.04	405.29	914.33
	#6574 & 6575 - Trafalgar Trunk	436.04	100%	75%	-	785	-	-	85	0	785	0	0	64	38,447	10,350	4,389	1,685	1,843	187.33	58,856	2.20	527.21	412.03	939.24
		436.06	100%	50%	-	1,038	-	-	166	0	1038	0	0	83	38,447	11,388	4,389	1,685	1,926	192.26	60,403	2.19	550.91	420.90	971.81
	#6503 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	723	-	-	46	3.43	1,077	3.78	13.27	12.96	26.23
	#6497 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	1,445	-	-	93	6.86	2,154	3.56	26.55	24.41	50.96
2031 Peak WW Flow to Britannia/Trafalgar WWPS	#6576 - Trafalgar Trunk														38,447	12,833	4,389	1,685	2,019	199.11	62,557	2.18	577.46	433.18	1010.64
		435.05	50%	30%	9,848	33	1,259	454	401	4924	17	630	227	120	43,371	12,850	5,019	1,912	2,139	217.11	68,212	2.14	611.89	465.05	1076.95
		435.04	100%	10%	831	19	159	33	224	831	19	159	33	22	44,202	12,869	5,178	1,945	2,162	220.38	69,239	2.14	618.31	470.79	1089.10
	#6504 & 6498 - Trafalgar Sub-Trunk 2	435.05	40%	25%	9,848	33	1,259	454	401	3939	13	504	181	100	3,939	13	504	181	100	14.40	4,524	3.28	28.70	47.30	76.00
	#6577 - Trafalgar Trunk														48,141	12,882	5,681	2,127	2,262	234.78	73,763	2.11	647.01	495.88	1142.88
	Direct to WWPS	435.03	100%	60%	926	3	148	42	40	926	3	148	42	24	926	3	148	42	24						
	#6505 & 6499 - Trafalgar Sub-Trunk 4	435.05	10%	10%	9,848	33	1,259	454	401	985	3	126	45	40	985	3	126	45	40	3.60	1,131	3.76	11.48	13.55	25.03
	#6578 - Trafalgar Sub-Trunk 3	433.04	100%	90%	3,791	-	470	159	110	3791	0	470	159	99	3,791	-	470	159	99	13.73	4,313	3.30	28.43	45.36	73.79
	#6578 - Trafalgar Sub-Trunk 3	433.03	100%	90%	2,528	-	347	106	90	2528	0	347	106	81	6,319	-	817	265	181	22.98	7,221	3.09	51.66	71.10	122.76
	#6571 - Brit/Traf WWPS														56,371	12,888	6,772	2,479	2,507	264.83	83,206	2.07	717.04	547.39	1264.43

8th Line Trunk Sewer Profile - Georgetown to Britannia/Trafalgar WWPS

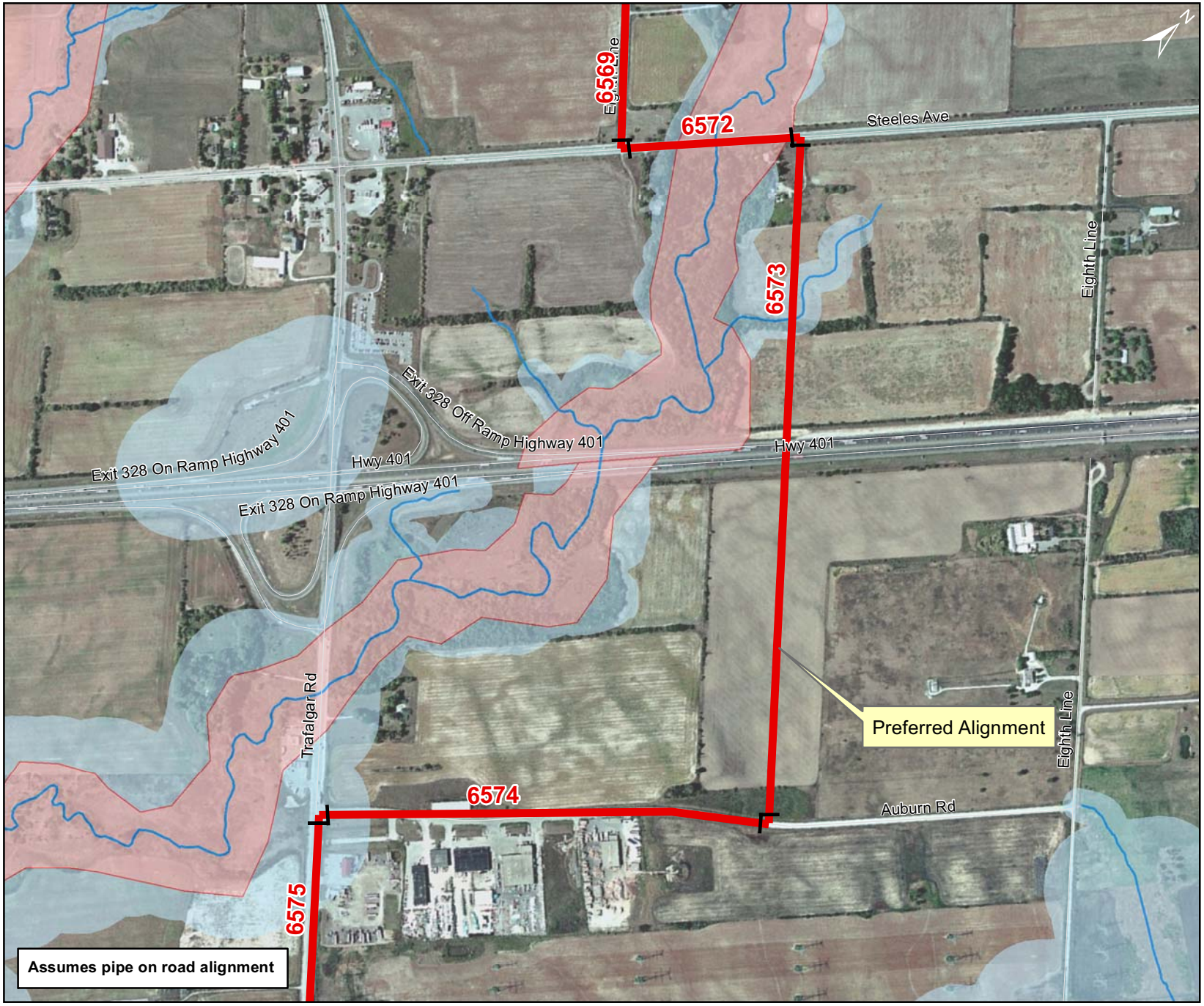


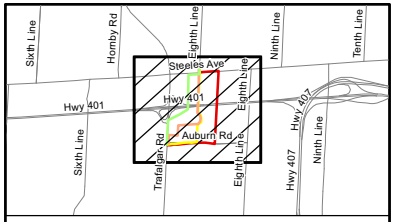
Steeles Ave Sewer and Forcemain Profile - HH#4 (3864) to HH#2



Wastewater Project # 6572, 6573 & 6574 - Crossing Evaluation Table

Project #6572, 6573 & 6574 Highway 401 Crossing Alternatives				
Alternatives	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	1050 mm gravity main from Eighth Line/Steeles Ave intersection to Trafalgar Rd/Auburn Rd Intersection 1050 mm gravity main (401 Crossing & East Sixteen Mile Creek) following the edge of the agricultural lands/Greenland.	1050 mm gravity main from Eighth Line/Steeles Ave intersection to Trafalgar Rd/Auburn Rd Intersection 1050 mm gravity main (401 Crossing & East Sixteen Mile Creek) following generally the same route as Alternative 1. Alternative 2 crosses directly across farmland to Auburn Rd.	1050 mm gravity main from Eighth Line/Steeles Ave intersection to Trafalgar Rd/Auburn Rd Intersection 1050 mm gravity main (401 Crossing & East Sixteen Mile Creek) travelling approximately 375 east along Steeles Avenue, south along crossing easement and west on Auburn Rd	1050 mm gravity main from Eighth Line/Steeles Ave intersection to Trafalgar Rd/Auburn Rd Intersection 1050 mm gravity main (401 Crossing & East Sixteen Mile Creek) travelling west on Steeles Ave, south through easement, and following the northen side of environmental feature to Trafalgar Rd.
Environmental	Wastewater main passes through agricultural designated lands, 401 employment designated lands. Passes through designated Greenland's at East Sixteen Mile Creek Crossing Watercourses: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing). Large sections of alignment cross Conservation Halton Regulated Area Land is predominantly agricultural lands with trees in ESA crossing.	Wastewater main passes through agricultural designated lands, 401 employment designated lands. Passes through designated Greenland's at East Sixteen Mile Creek Crossing Watercourses: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing). Large sections of alignment cross Conservation Halton Regulated Area Land is predominantly agricultural lands with trees in ESA crossing.	Wastewater main passes through agricultural designated lands, 401 employment designated lands. Passes through designated Greenland's at East Sixteen Mile Creek Crossing Watercourses: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing). -One (1) minor Tributary of East Sixteen Mile Creek Alignment crosses Conservation Halton Regulated Area in 2 locations Land is predominantly agricultural lands with trees in ESA crossing.	Wastewater main passes through agricultural designated lands, 401 employment designated lands. Passes through designated Greenland's at East Sixteen Mile Creek Crossing Watercourses: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing). - Two (2) minor Tributaries of East Sixteen Mile Creek Large sections of alignment cross Conservation Halton Regulated Area Land is predominantly agricultural lands with trees in ESA crossing.
Technical	Alignment crosses agricultural lands and the crossing over East Sixteen Mile Creek is approximately 300 m in length. Moderate feedermain distance (approx 1830 m). Crossings: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing) -One (1) Highway 401 -One (1) minor Steeles Ave Some sections of Greenfield Construction. Tunnelling required due to length of crossing It may be possible to construct in accordance with the timings given the Transport Master Plan i.e. the Trafalgar Road widening scheduled in 2026. Access issues due to the need for temporary access to the bridge, one carriageway would potentially be made inoperable. Low potential for conflict with utilities.	Alignment crosses agricultural lands and the crossing over East Sixteen Mile Creek is approximately 300 m in length. Moderate feedermain distance (approx 1832 m). Crossings: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing) -One (1) Highway 401 -One (1) minor Steeles Ave Some sections of Greenfield Construction. Tunnelling required due to length of crossing There may be access issues for the tunnelling rig due to the close proximity to Exit 328 of the 401 Highway. Low potential for conflict with utilities.	Alignment crosses agricultural lands and the crossing over East Sixteen Mile Creek is approximately 300 m in length. Longest feedermain distance (approx 2397 m). Crossings: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing) -One (1) minor Tributary of East Sixteen Mile Creek -One (1) Highway 401 -One (1) minor Steeles Ave Some sections of Greenfield Construction. Tunnelling required due to length of crossing Passes proposed Halton Hills WWPS #3. Alignment facilitates decommissioning of the station. There may be access issues for the tunnelling rig due to the close proximity to Exit 328 of the 401 Highway. Low potential for conflict with utilities.	Alignment follows planned road corridors. Shortest feedermain distance (approx 1665 m). Crossings: -One (1) major East Sixteen Mile Creek Crossing. (ANSI/ESA crossing) -Two (2) minor Tributaries of East Sixteen Mile Creek -One (1) Highway 401 -One (1) minor Steeles Ave Some sections of Greenfield Construction. Could be mitigated with the application of the following techniques: directional drill, tunnelling or Jack and Bore. It may be possible to construct in accordance with the timings given the Transport Master Plan i.e. the Trafalgar Road widening scheduled in 2026. There may be access issues for the tunnelling rig due to the close proximity to Exit 328 of the 401 Highway. Low potential for conflict with utilities.
Socio / Cultural	Moderate traffic disruptions / disturbance expected along Trafalgar Rd during construction. Minimal visual impact as there are few local residences within the area. Small number of properties may be affected during construction. There will be temporary works, but the impact will be limited with precautions taken for noise disturbance. Construction will take place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas.	Moderate traffic disruptions / disturbance expected along Trafalgar Rd/Auburn Rd during construction. Minimal visual impact as there are few local residences within the area. Small number of properties may be affected during construction. There will be temporary works, but the impact will be limited with precautions taken for noise disturbance. Construction will take place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas.	Moderate traffic disruptions / disturbance expected along Steeles Ave/Auburn Rd during construction. Minimal visual impact as there are few local residences within the area. Small number of properties may be affected during construction. There will be temporary works, but the impact will be limited with precautions taken for noise disturbance. Construction will take place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas.	Potential for major traffic disruptions / disturbance on Trafalgar Rd and Steeles Ave and the potential need for heavy machinery at Exit 328. Minimal visual impact as there are few local residences within the area. Small number of properties may be affected during construction. There will be temporary works, but the impact will be limited with precautions taken for noise disturbance. Construction will take place during normal working hours. Dust will be controlled through construction contract obligations. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas.
Financial	Moderate sewer main alignment. High cost associated with tunnelling requirement due to length of the crossing Moderate gravity sewer cost than other alternatives	Moderate sewer main alignment. Tunnelling required due to length of crossing Moderate gravity sewer cost than other alternatives	Longest sewer main alignment. Tunnelling required due to length of crossing Highest gravity sewer cost than other alternatives	Shortest sewer main alignment. Jack and Bore or Directional Drilling would be a lower cost solution than the tunnelling option required in all of the other solutions. However, tunnelling may be required. Lower gravity sewer cost than other alternatives
Legal / Jurisdictional	MOE Guidelines need to be adhered to - as regards to the tunnelling the MOE Guidelines stipulate that a minimum of 0.5 m between water pipes and sewers. Conservation Halton Permits required Easement(s) required for crossings and tunnel shafts MTO encroachment permit required for work by Hwy 401	MOE Guidelines need to be adhered to - as regards to the tunnelling the MOE Guidelines stipulate that a minimum of 0.5 m between water pipes and sewers. Conservation Halton Permits required Easement(s) required for crossings and tunnel shafts MTO encroachment permit required for work by Hwy 401	MOE Guidelines need to be adhered to - as regards to the tunnelling the MOE Guidelines stipulate that a minimum of 0.5 m between water pipes and sewers. Conservation Halton Permits required Easement(s) required for crossings and tunnel shafts MTO encroachment permit required for work by Hwy 401	MOE Guidelines need to be adhered to - as regards to the tunnelling the MOE Guidelines stipulate that a minimum of 0.5 m between water pipes and sewers. Conservation Halton Permits required Easement(s) required for crossings and tunnel shafts MTO encroachment permit required for work by Hwy 401
Overall Score	**Moderate**	**Moderate**	**High**	**Low**





- Project Area

Legend

Existing Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant
- Wastewater Main

Proposed/Upgrade Wastewater Infrastructure
- Wastewater Pumping Station
- Wastewater Pumping Station

Preferred Wastewate Infrastructure
- Wastewater Pumping Station
- Wastewater Treatment Plant

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Regional Wetlands
- Provincial Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Lakes Rivers and Creeks
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit

175 87.5 0 175 Meters

Halton Region
Sustainable Halton

Halton Wastewater Servicing - Preferred 401 Crossing
IPFS ID: 6572/6573/6574

AECOM

Oct 03, 2011
1:10,000
60114062-315-WW

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6572
Prepared/Updated By:	AECOM		

Project Description:

1050 mm WWM on Steeles Ave from 8th Line to Crossing Easement

Scope of Work:

The new 1050 mm WWM will be constructed on Steeles Avenue from 8th Line to Crossing Easement. The sewer depth is approximately 10 m. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies. This project connects downstream to #6573, which crosses Hwy 401 from Steeles to Auburn Rd

Project Justification:

Wastewater network upgrade required to service future lakebased growth area in south Georgetown. This project includes one major environmental crossing. Opportunity to coordinate the crossing of the environmental feature with WM projects #4985 and #6689 for cost savings and potential efficiencies.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population growth in south Georgetown

Project Timing:

In Service:	2020	Design:	2017
Class EA:	B	Construction:	2018

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

Property may be required depending on construction methodology (shaft locations if tunelling)

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		10 m Depth - Dewatering
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Transfer of Review
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit		X	
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Aligment related to WWM projects #6573 and #6574
Opportunity for aligment to be coordinated with watermain crossings #4895 and #6689 of Hwy 401
The alignments for wastewater projects #6572 and #6573 will be in close proximity to the Halton Hills WWPS #3. The trunk wastewater main inlet to the WWPS will be diverted to the 8th Line Trunk which will allow de-commissioning of the station.

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6573
Prepared/Updated By:	AECOM		

Project Description:

1050 mm WWM Hwy 401 Crossing from Steeles Ave to Auburn Rd

Scope of Work:

The new 1050 mm WWM will be constructed from ID 6572 on Steeles Ave to Auburn Rd, crossing Hwy 401. The project will require one major Hwy 401 crossing, plus one environmental crossing over an unnamed tributary of East Sixteen Mile Creek. The sewer depth is approximately 10m and sewer length is approximately 1,250m. The alignment will lie within Conservation Halton Designated Lands but will be constructed in the road right of way where possible. Environmental crossing construction methodology will be determined during detailed design stages in consultation with Review/Permitting Agencies.

Project Justification:

Wastewater network upgrade required to service future lake-based growth area in south Georgetown. The project will include one environmental crossing and Hwy 401 crossing. Opportunity to coordinate the crossing of Hwy 401 and environmental feature with WM projects #4985 and #6689 for cost savings and potential efficiencies.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population and employment growth in southwest Georgetown and HH/401 Corridor.

Project Timing:

In Service:	2020	Design:	2017
Class EA:	B	Construction:	2018

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

Easement will be required from Steeles Ave to Auburn Rd

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		10 m Depth - Dewatering
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit	X		
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order	X		Within 395 m of Hwy 401
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Aligment related to WWM projects #6572 and #6574
Opportunity for crossing aligment to be coordinated with watermain crossings #4895 and #6689 of Hwy 401
The alignments for wastewater projects #6572 and #6573 will be in close proximity to the Halton Hills WWPS #3. The trunk wastewater main inlet to the WWPS will be diverted to the 8th Line Trunk which will allow de-commissioning of the station.

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	2	IPFS:	6574
Prepared/Updated By:	AECOM		

Project Description:

1050 mm WWM on Auburn Rd from Hwy 401 crossing easement to Trafalgar Rd

Scope of Work:

The new 1050 mm WWM will be constructed on Auburn Rd from the 401 crossing easement to Trafalgar Rd. The project will require one (1) road crossing of Trafalgar Rd. Sewer depth is approximately 5 m.

Project Justification:

Wastewater network upgrade required to service future lakebased growth area in south Georgetown. Opportunity to coordinate the crossing of Hwy 401 and environmental feature with WM projects #4985 and #6689 for cost savings and potential efficiencies.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule A+

Triggers Affecting Project Need:

Projected population growth in Georgetown and East Milton.

Project Timing:

In Service:	2020	Design:	2017
Class EA:	A+	Construction:	2018

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

No property requirements

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water		X	
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		
MOE Certificate of Approval - Air		X	
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4		X	
Marine Archaeological		X	
Site Plan		X	
Building Permit	X		
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Aligment related to WWM projects #6572 and #6573
Opportunity for aligment to be coordinated with watermain crossings #4895 and #6689 of Hwy 401
The alignments for wastewater projects #6572 and #6573 will be in close proximity to the Halton Hills WWPS #3. The trunk wastewater main inlet to the WWPS will be diverted to the 8th Line Trunk which will allow de-commissioning of the station.

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)
		Staging	_____ (yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID:6584

Project Description: 156 ML/d WWPS at Lower Base Line and 4th Line (1805 L/s)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6584
Prepared/Updated By:	AECOM		

Project Name/Description:

156 ML/d WWPS at Lower Base Line and 4th Line (1805 L/s)

Project Need:

New wastewater pumping station designed to pump the upstream flow generated from Georgetown, Milton east south east & HH 401 growth corridor from project #'s 6582 and 6500 over the Sixteen Mile Creek environmental feature. The flow will be conveyed via project #6585 south and then westwards to the new RR25/Boyne trunk sewer. 6584/6585 are the most critical pieces of wastewater infrastructure to service the 2021-2031 growth within the Region. The station/forcemain will move a significant amount of Halton's growth flow across the 16 Mile Creek

Evaluation:

WWPS sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. A gravity only solution was not considered feasible due to significant crossing of 16 Mile Creek. The alternative pumping station sites considered in the evaluation varied in distance from 16 Mile Creek and would require significantly different lengths of gravity sewer and forcemain.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site is not within any Niagara Escarpment or other environmentally sensitive area. Site lies approximately 500m from the Conservation Halton Regulation Limit Area. Wastewater forcemain #6585 alignment crosses Conservation Halton Regulation Limit Area, Greenbelt, ESA and 16 Mile Creek.
- Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
- Transport: The site fronts existing roads right-of-way (4th Line and Lower Base Line (east))
- Crossing: One Bridge/Creek Crossing for wastewater forcemain #6585

Selection of Preferred Servicing Alternative:

Four alternative station sites were evaluated as follows:
- Alternative 1 – Site located on the south side of Lower Base Line, adjacent to 16 Mile Creek.
- Alternative 2 – Site located on the northeast corner of Lower Base Line (west) and 4th Line.
- Alternative 3 – Site located on the southeast corner of Lower Base Line (east) and 4th Line.
- Alternative 4 – Site located on the south side of Lower Base Line (east), approximately 125m west of 5th Line

Alternative 3 was selected as the preferred site for the Lower Base Line Wastewater Pumping Station. This site is located just outside of the future urban boundary expansion area and is not within the Conservation Halton Designated Lands. The preferred site reduces the length of large deep sewer required. Approximately 1.0ha will be required.

Site Requirements:

- Feasible and technically viable option in line with current planning
- Minimize impact on local population and the environment
- Minimize financial outlay
- The construction of 1800 L/s wastewater pumping station will require a footprint of approximately 100m x 100m or 1.00 ha
- Power availability

6500
6581
6582
6584
6585
Unnamed Tributaries of East Sixteen Mile Creek
Alternative 4
Fifth Line
Lower Base Line W
Alternative 3 (Preferred)
Fourth Line
Alternative 2
Sixteen Mile Creek
Lower Base Line
Alternative 1
Assumes pipe on road alignment

Legend

Preferred Wastewater Infrastructure
- Wastewater Pumping Station

Preferred Linear Alignment
- Preferred Forcemain Alignment
- Preferred Gravity Alignment
- Potential Emergency Overflow
- Site Alternatives

Environmental Features
- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Parcel Fabric
- Lakes Rivers and Creeks

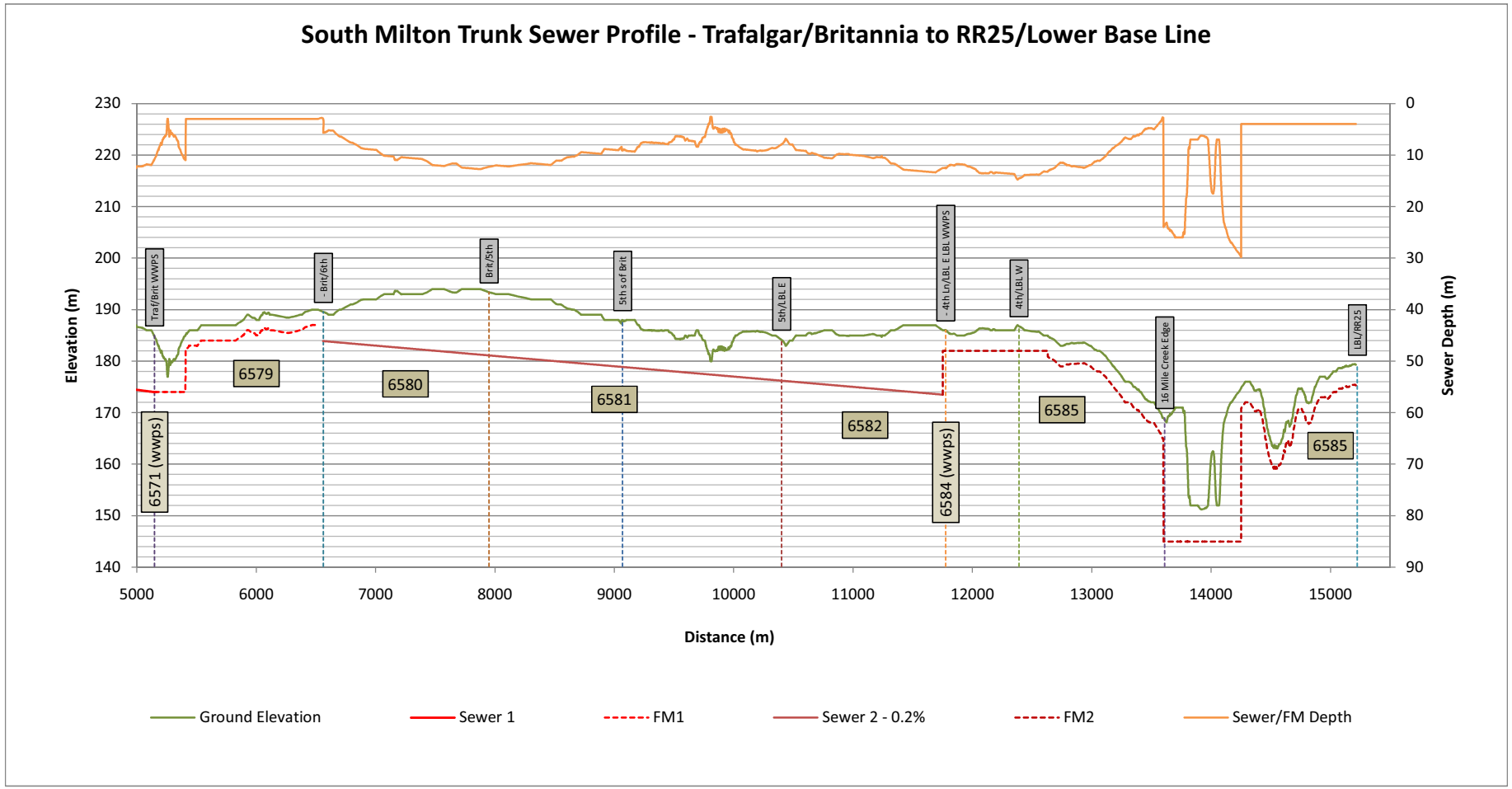
Halton REGION

Sustainable Halton
Water and Wastewater Master Plan

Pump Station Site Analysis: Project No. 6584
155.5 MLD WWPS at Lower Base Line and 4th Line

AECOM

1:7,500
30 Sep 2011
File: 60114062-369-WW


South Milton Trunk Sewer Profile - Trafalgar/Britannia to RR25/Lower Base Line
Elevation (m)
Sewer Depth (m)
Distance (m)
230
220
210
200
190
180
170
160
150
140
0
10
20
30
40
50
60
70
80
90
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
Traf/Brit WWPS
Brit/6th
Brit/Sth
Sth s of Brit
Sth/LBL E
4th Ln/LBL E LBL WWPS
4th/LBL W
16 Mile Creek Edge
LBL/RR25
6571 (wwps)
6579
6580
6581
6582
6584 (wwps)
6585
6585
Ground Elevation
Sewer 1
FM1
Sewer 2 - 0.2%
FM2
Sewer/FM Depth

THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Georgetown to Lower Base Line

Average Day DWF
- Res 275 L/cap/day
- Ind 410 L/emp/day
- Comm 260 L/emp/day
- Inst 135 L/emp/day

Peak Extraneous Flow 0.286 L/s/ha
Manning's Roughness Coef. 0.013

$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Total Pop.	Total Employees Ind	Total Employees Comm	Total Employees Inst	Total Area (ha)	Adjusted Pop.	Adjusted Employees Ind	Adjusted Employees Comm	Adjusted Employees Inst	Adjusted Area (ha)	Cumulative Adjusted Pop.	Cumulative Adjusted Employees Ind	Cumulative Adjusted Employees Comm	Cumulative Adjusted Employees Inst	Cumulative Adjusted Area (ha)	Average Day DWF (L/s)	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow (L/s)	Peak DWF (L/s)	Peak WWF (L/s)
2031 Georgetown South Peel Off		561.00	100%	100%	2,298	146	136	-	91	2298	146	136	0	91	2,298	146	136	-	91	8.42	2,644	3.49	26.08	29.36	55.44
		562.01	100%	80%	3,316	6	34	-	77	3316	6	34	0	62	5,614	152	170	-	153	19.10	6,001	3.17	43.67	60.56	104.23
		562.02	100%	100%	19	-	-	141	6	19	0	0	141	6	5,633	152	170	141	159	19.38	6,090	3.16	45.49	61.34	106.83
		564.01	50%	10%	1,059	1	-	-	40	530	0	0	0	4	6,163	152	170	141	163	21.07	6,620	3.13	46.64	65.95	112.59
		564.03	100%	75%	4,075	4	89	95	153	4075	4	89	95	115	10,238	156	259	236	278	34.48	10,832	2.92	79.52	100.68	180.19
		563.01	100%	100%	195	-	-	-	8	195	0	0	0	8	10,433	156	259	236	286	35.10	11,027	2.91	81.78	102.22	184.00
		563.02	100%	100%	1,691	-	-	-	10	1691	0	0	0	10	12,124	156	259	236	296	40.48	12,718	2.85	84.70	115.38	200.08
		563.03	100%	100%	320	-	-	-	25	320	0	0	0	25	12,444	156	259	236	321	41.50	13,038	2.84	91.79	117.84	209.63
	#6570 & 6506 - Georgetown South WWPS	563.04	100%	100%	2,009	-	3	3	76	2009	0	3	3	76	14,454	156	262	239	396	47.91	15,052	2.78	113.39	133.03	246.42
	Flow from Main St WWPS														5,295	380	717	427	336	21.48	6,749	3.12	96.14	67.06	163.20
		558.03	100%	75%	2,374	1	94	40	42	2374	1	94	40	31	7,668	381	811	467	368	29.39	9,233	2.99	105.11	87.84	192.95
	#6587 - 8th Line Miller to Argyll	558.04	60%	60%	11,185	6	717	324	261	6711	4	430	194	157	14,380	385	1,241	662	524	52.36	16,452	2.74	149.94	143.36	293.30
		558.04	40%	40%	11,185	6	717	324	261	4474	2	287	130	105	18,854	387	1,528	791	629	67.68	21,264	2.63	179.83	177.71	357.55
	#6586 - 8th Line Argyll to 10th Sideroad	558.02	50%	50%	4,660	3	319	136	107	2330	2	160	68	53	21,184	389	1,688	859	682	75.69	23,781	2.58	195.07	195.07	390.14
		558.02	50%	50%	4,660	3	319	136	107	2330	2	160	68	53	23,514	390	1,847	927	735	83.70	26,297	2.53	210.31	212.07	422.39
	#6568 & 6569 - 8th Line 10th Sideroad to Steeles A	558.01	50%	25%	637	-	43	18	16	319	0	22	9	4	38,286	547	2,131	1,175	1,136	132.70	41,693	2.34	324.86	310.37	635.23
		555.03	100%	100%	62	1,933	498	67	124	62	1933	498	67	124	38,349	2,480	2,629	1,242	1,260	143.68	45,141	2.31	360.44	331.34	691.78
		554.02	100%	100%	-	857	189	29	44	0	857	189	29	44	38,349	3,337	2,818	1,271	1,305	148.36	46,611	2.29	373.17	340.19	713.36
		554.04	100%	100%	99	2,056	480	338	131	99	2056	480	338	131	38,447	5,393	3,298	1,609	1,436	160.40	50,395	2.26	410.75	362.73	773.47
		553.01	100%	100%	-	1,515	395	11	139	0	1515	395	11	139	38,447	6,908	3,693	1,620	1,575	168.80	53,033	2.24	450.43	378.25	828.68
		553.02	100%	100%	-	869	237	59	74	0	869	237	59	74	38,447	7,777	3,930	1,679	1,649	173.73	54,581	2.23	471.71	387.30	859.01
	#6572 - Steeles Ave	552.01	50%	50%	-	581	919	12	78	0	291	460	6	39	38,447	8,067	4,389	1,685	1,688	176.50	55,452	2.22	482.85	392.36	875.21
	#6573 - Trafalgar s of 401	436.03	50%	50%	-	1,498	-	-	114	0	749	0	0	57	38,447	8,816	4,389	1,685	1,746	180.05	56,568	2.22	499.22	398.84	898.06
	#6574 - Auburn Rd	436.03	50%	30%	-	1,498	-	-	114	0	749	0	0	34	38,447	9,565	4,389	1,685	1,780	183.60	57,685	2.21	509.04	405.29	914.33
	#6574 & 6575 - Trafalgar Trunk	436.04	100%	75%	-	785	-	-	85	0	785	0	0	64	38,447	10,350	4,389	1,685	1,843	187.33	58,856	2.20	527.21	412.03	939.24
		436.06	100%	50%	-	1,038	-	-	166	0	1038	0	0	83	38,447	11,388	4,389	1,685	1,926	192.26	60,403	2.19	550.91	420.90	971.81
	#6503 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	723	-	-	46	3.43	1,077	3.78	13.27	12.96	26.23
	#6497 Trafalgar Sub-Trunk 1	436.05	50%	50%	-	1,445	-	-	93	0	723	0	0	46	-	1,445	-	-	93	6.86	2,154	3.56	26.55	24.41	50.96
2031 Peak WW Flow to Britannia/Trafalgar WWPS	#6576 - Trafalgar Trunk														38,447	12,833	4,389	1,685	2,019	199.11	62,557	2.18	577.46	433.18	1010.64
		435.05	50%	30%	9,848	33	1,259	454	401	4924	17	630	227	120	43,371	12,850	5,019	1,912	2,139	217.11	68,212	2.14	611.89	465.05	1076.95
		435.04	100%	10%	831	19	159	33	224	831	19	159	33	22	44,202	12,869	5,178	1,945	2,162	220.38	69,239	2.14	618.31	470.79	1089.10
	#6504 & 6498 - Trafalgar Sub-Trunk 2	435.05	40%	25%	9,848	33	1,259	454	401	3939	13	504	181	100	3,939	13	504	181	100	14.40	4,524	3.28	28.70	47.30	76.00
	#6577 - Trafalgar Trunk														48,141	12,882	5,681	2,127	2,262	234.78	73,763	2.11	647.01	495.88	1142.88
	Direct to WWPS	435.03	100%	60%	926	3	148	42	40	926	3	148	42	24	926	3	148	42	24						
	#6505 & 6499 - Trafalgar Sub-Trunk 4	435.05	10%	10%	9,848	33	1,259	454	401	985	3	126	45	40	985	3	126	45	40	3.60	1,131	3.76	11.48	13.55	25.03
	#6578 - Trafalgar Sub-Trunk 3	433.04	100%	90%	3,791	-	470	159	110	3791	0	470	159	99	3,791	-	470	159	99	13.73	4,313	3.30	28.43	45.36	73.79
	#6578 - Trafalgar Sub-Trunk 3	433.03	100%	90%	2,528	-	347	106	90	2528	0	347	106	81	6,319	-	817	265	181	22.98	7,221	3.09	51.66	71.10	122.76
	#6571 - Brit/Traf WWPS														56,371	12,888	6,772	2,479	2,507	264.83	83,206	2.07	717.04	547.39	1264.43
		435.01	100%	10%	1,138	12	218	51	143	1138	12	218	51	14	57,509	12,900	6,990	2,530	2,521						
		433.01	100%	40%	1,174	-	115	50	72	1174	0	115	50	29	58,683	12,900	7,105	2,580	2,550						
		434.01	100%	90%	1,452	7	192	60	43	1452	7	192	60	39	60,136	12,907	7,297	2,640	2,589						
6th Line to 5th Line	#6580 - Britannia Trunk														60,136	12,907	7,297	2,640	2,589	278.74	87,574	2.05	740.42	570.87	1311.29
		434.02	10%	10%	8,930	48	881	378	297	893	5	88	38	30	61,029	12,912	7,385	2,678	2,619	281.93	88,576	2.04	748.91	576.22	1325.13
		433.02	50%	50%	1,986	-	193	83	53	993	0	97	42	26	62,021	12,912	7,482	2,720	2,645	285.44	89,681	2.04	756.49	582.12	1338.60
	#6583 - Britannia Sub-Trunk	434.02	70%	70%	8,930	48	881	378	297	6251	34	617	265	208	6,251	34	617	265	208	22.32	7,014	3.11	59.44	69.34	128.78
	#6580 - Britannia Trunk														68,273	12,946	8,098	2,984	2,853	307.77	96,695	2.01	815.93	619.24	1435.17
		434.02	20%	20%	8,930	48	881	378	297	1786	10	176	76	59	70,059	12,955	8,275	3,060	2,912	314.15	98,699	2.00	832.91	629.76	1462.67
		433.02	50%	50%	1,986	-	193	83	53	993	0	97	42	26	71,051	12,955	8,371	3,101	2,939	317.66	99,803	2.00	840.49	635.55	1476.03
5th Line - Brit to LBL	#6581 - 5th Line Trunk														71,051	12,955	8,371	3,101	2,939	317.66	99,803	2.00	840.49	635.55	1476.03
		432.03	15%	15%	15,089	56	1,626	697	444	2263	8	244	104	67	73,315	12,964	8,615	3,206	3,005	325.80	102,361	1.99	859.55	648.90	1508.44
	#6581 - 5th Line Trunk														73,315	12,964	8,615	3,206	3,005	325.80	102,361	1.99	859.55	648.90	1508.44
		432.03	45%	45%	15,089	56	1,626	697	444	6790	25	732	313	200	80,105	12,989	9,347	3,519	3,205	350.23	110,035	1.97	916.72	688.61	1605.34
LBL - 5th Ln to 4th Ln	#6582 - Lower Baseline Trunk														80,105	12,989	9,347	3,519	3,205	350.23	110,035	1.97	916.72	688.61	1605.34
	#6502 - 4th Line Sub-Trunk	432.01	100%	100%	1,447	7	184	78	56	1447	7	184	78	56	1,447	7	184	78	56	5.31	1,669	3.65	15.93	19.37	35.30
	#6502 - 4th Line Sub-Trunk	432.03	10%	10%	15,089	56	1,626	697	444	1509	6	163	70	44	2,956	13	347	148	100	10.74	3,374	3.40	28.64	36.50	65.14
4th Line Sub-Trunk	#6501 - 4th Line Sub-Trunk	432.03	10%	10%	15,089	56	1,626	697	444	1509	6	163	70	44	1,509	6	163	70	44	5.43	1,705	3.64	12.71	19.75	32.45
	#6500 - 4th Line Sub-Trunk	432.03	10%	10%	15,089	56	1,626	697	444	1509	6	163	70	44	1,509	6	163	70	44	5.43	1,705	3.64	12.71	19.75	32.45
	#6500 - 4th Line Sub-Trunk	432.03	10%	10%	15,089	56	1,626	697	444	1509	6	163	70	44	3,018	11	325	139	89	10.85	3,410	3.39	25.41	36.85	62.26
	#6500 - 4th Line Sub-Trunk														7,482	29	834	357	233	27.02	8,490	3.02	66.76	81.74	148.50
Flow to Lower Base Line WWPS	Direct to WWPS	432.02	100%	100%	867	4	93	40	31	867	4	93	40	31	867	4	93	40	31	3.12	980	3.81	9.00	11.88	20.88
	#6500 - 4th Line Sub-Trunk														7,482	29	834	357	233	27.02	8,490	3.02	66.76	81.74	148.50
	#6582 - Lower Baseline Trunk														80,105	12,989	9,347	3,519	3,205	350.23	110,035	1.97	916.72	688.61	1605.34
	#6584 - Lower Base Line WWPS														88,454	13,022	10,274	3,916	3,470	380.37	119,505	1.94	992.48	737.00	1729.48

Project No. 6584 - Lower Base Line WWPS				
Alternatives No.	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Description	Pump Station is located on Lower Base Line, adjacent to 16 Mile Creek	Pump Station located on the northeast corner of Lower Base Line (west) and 4th Line; opposite the existing Golf Course	Pump Station is located on the southeast corner of Lower Base Line (east) and 4th Line	Pump Station is located on the south side of Lower Base Line (east), approximately 125 m west of 5th Line
Environmental	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located adjacent to the Conservation Halton Regulation Area, Greenbelt and Greenlands No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is not within any environmental designated areas. No watercourses on site. No ANSIs/ESAs on site.	Land is currently comprised of (Prime) Agricultural Lands. Lands have no natural vegetation (crops only). Site is located adjacent to the Conservation Halton Regulation Area, Greenbelt and Greenlands No watercourses on site. No ANSIs/ESAs on site.
Technical	Site is located well outside of growth area, and will require 1,500m of deep trunk sewer extending past the urban boundary to reach the station. This location increases trunk sewer lengh required but minimizes twin/triple forcemain length Site located adjacent to 16 Mile Creek, providing a short distance for emergency overflow pipe Site is located outside of planned urban boundary expansion area Greenfield Construction. Low potential for conflict with utilities. Good access to Lower Base Line, truck access via RR25/Lower Base Line could be a construction issue Site is located at a low elevation, near 16 Mile Creek, which will facilitate mature state gravity servicing of the surrounding white lands	Site is located just outside of growth area, and will require 600m of deep trunk sewer extending past the urban boundary to reach the station. This location slightly increases trunk sewer lengh required and decreases twin/triple forcemain length Site located slightly further east from 16 Mile Creek, requiring a longer emergency overflow pipe Site is located outside of planned urban boundary expansion area Greenfield Construction. Low potential for conflict with utilities Good access to Lower Base Line and 4th Line, truck access via RR25/Lower Base Line could be a construction issue Site is located in the middle of potenital mature state white lands. Mature state gravity servicing is feasible	Site is located on the southwest corner of the growth area, and will require a long (3,400m) forcemain to reach the Boyne Trunk Sewer. This location shortens the length of deep trunk sewer required and increases the twin/triple forcemain length Opportunity for shorter overflow pipe to the east to smaller tributary of East 16 Mile Creek Site is located within planned urban boundary expansion area Greenfield Construction. Low potential for conflict with utilities. Good access to Lower Base Line and 4th Line, truck access via RR25/Lower Base Line could be a construction issue Site is located at the southwest edge of the urban boundary expansion. Mature state gravity servicing is feasible	Site is located just outside the growth area, and will require a very long (4,800m) forcemain to reach the Boyne Trunk Sewer. This location shortens the length of deep trunk sewer required and greatly increases the twin/triple forcemain length Site located close to the east branch of 16 Mile Creek, providing a short distance for emergency overflow pipe Site is located outside of planned urban boundary expansion area Greenfield Construction. Low potential for conflict with utilities. Good access to Lower Base Line and 5th Line, truck access via RR25/Lower Base Line could be a construction issue Site is located just outside of the southeast edge of the urban boundary expansion. Mature state gravity servicing may not be feasible
Socio / Cultural	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Lower Base Line during construction. Site is located near of a residential farm . Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. The noise from the working pump station should be minimal though there are some residential properties nearby.	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Lower Base Line during construction. Site is located near of a residential farm . Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract The noise from the working pump station should be minimal though there are some residential properties nearby.	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Lower Base Line during construction. Site is located near of a residential farm . Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. The noise from the working pump station should be minimal though there are some residential properties nearby.	Site is located on (Prime) Agricultural Lands. Some traffic disruptions / disturbance expected along Lower Base Line during construction. Site is located near of a residential farm . Potential for minimal visual impact of the pump station to local residents. Low potential for impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. The noise from the working pump station should be minimal though there are some residential properties nearby.
Financial	Pump Station construction same as other alternatives. Lowest forcemain distance/cost. Short overflow distance Highest deep gravity main distance/cost.	Pump Station construction same as other alternatives. Moderate forcemain distance/cost. Longer overflow distance Moderate deep gravity main distance/cost.	Pump Station construction same as other alternatives. Moderate forcemain distance/cost. Moderate overflow distance Moderate deep gravity main distance/cost.	Pump Station construction same as other alternatives. Longest forcemain distance/ highest cost. Short overflow distance Shorter deep gravity main distance/ lower cost, however, additional gravity sewer from west Milton required from west to east along Lower Base Line to reach station
Legal / Jurisdictional	Property acquisition (approx 1.0 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 1.0 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 1.0 ha) is required Implementation risk due to limited property availability.	Property acquisition (approx 1.0 ha) is required Implementation risk due to limited property availability.
Overall Score	**Low**	**Moderate**	**High**	**Low**

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	August 31 2011	Project Number:	N/A
Version Number:	2	IPFS:	6584
Prepared/Updated By:	AECOM		

Project Description:

156 ML/d WWPS at Lower Base Line and 4th Line (1805 L/s)

Scope of Work:

New 156 ML/d (1805 L/s) WWPS located at the southeast corner of Lower Base Line and 4th Ln. This project will pump flows from projects 6500 and 6582 via WWFM project #6585 and will discharge to the new RR25/Boyne trunk sewer, which ultimately discharges to the Mid-Halton WWTP. The pump station is not within Conservation Halton Regulated Area. An emergency overflow is planned to run from the station to approximately 400m east, discharging to a branch of the 16 Mile Creek.

Project Justification:

New wastewater pumping station designed to pump the upstream flow generated from Georgetown, Milton east south east & HH 401 growth corridor from project #'s 6582 and 6500 over the Sixteen Mile Creek environmental feature. The flow will be conveyed via project #6585 south and then westwards to the new RR25/Boyne trunk sewer. 6584/6585 are the most critical pieces of wastewater infrastructure to service the 2021-2031 growth within the Region. The station/forcemain will move a significant amount of Halton's growth flow across the 16 Mile Creek

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population and employment growth in Georgetown, east and south east Milton & HH 401 corridor in excess of the pumping capacity of th Britannia Rd/3rd Line WWPS (#5069/6427)

Project Timing:

In Service:	2025	Design:	2022
Class EA:	B	Construction:	2023

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing Justification

No oversizing or benefit to existing

Property Requirements:

Land acquisition required (approximately 1.0 ha)

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		Wet well construction
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Direct Submission
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in 2011 MP
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Phase 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit	X		Req consultation with CH
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Evaluation matrix attached
Site Alternative Map attached
Alternative #3 preferred

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

• 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.

Circulation:			
	Manager		(date/initial)
	Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)

Sustainable Halton Capital Program

IPFS ID: 6589

Project Description: 3.6 ML/d WWPS on 10th Side Rd in Georgetown Southeast (42 L/s)

Project Documentation

1. Project Tracking Sheet Summary
2. Alternative Solutions on Map
3. Additional Technical Support (if applicable)
4. Additional Data - Site Descriptions, Profiles, etc. (if applicable)
5. Alternatives Evaluation Table
6. Preferred Solution on Map
7. Tracking Sheet

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	Overview
Version Number:	1	IPFS:	6589
Prepared/Updated By:	AECOM		

Project Name/Description:

3.6 ML/d WWPS on 10th Side Rd in Georgetown Southeast Greenfield Growth Area (42 L/s)

Project Need:

Wastewater network upgrade required to service future growth area in Georgetown. This project will be constructed in order to pump flow convey from the future growth areas in southeast Georgetown (Near Norval) via the new Twinned 250 mm WWFM from Norval WWPS to Argyll Rd (Project #6496). Flows will ultimately drain through existing network towards the Georgetown WWTP. Flow can be intercepted by the new Georgetown South connection sewer #6506 and sent south to Mid-Halton WWTP or can flow to the Georgetown WWTP

Evaluation:

WWPS sites were screened on the basis of their technical, environmental, legal/jurisdictional, socio-cultural, and economic impacts. A gravity only solution was not considered feasible due to topography. The alternative pumping station sites considered in the evaluation were all in the same approximate area of lower elevations.

Special Consideration:

There were a few specific factors that played key roles in the screening process, such as:
- Environmental/Natural Heritage: Site lies adjacent to the Credit Valley Conservation Regulation Limit.
- Cultural/Heritage: Existing land use is agricultural farming. No significant impacts anticipated.
- Transport: The site fronts existing roads right-of-way (Winston Churchill Blvd and No 10 Sideroad)
- Crossing: No significant crossings
- Other:

Forcemain alignment (within Road ROW) and WWPS location is based on connection to the existing wastewater collection system and will provide opportunity to send flows from the Georgetown Southeast Greenfield Growth Area to the existing Georgetown WWTP. Flow diversion (peel off) from the Georgetown South area to Mid-Halton WWTP is achieved by project #6506 which could also provide the opportunity to divert flow from Georgetown Southeast. Pumping from #6590 directly to #6506 at 9th Ln/10th Sideroad is also a feasible solution for sending Georgetown Southeast flows to the Mid-Halton WWTP catchment area. It is anticipated that if a gravity collection network is planned for Norval in the future, the overall strategy for Georgetown Southeast will be updated in order to develop a combined servicing solution for the two areas.

Selection of Preferred Servicing Alternative:

Three alternative station sites were evaluated as follows:
- Alternative 1 – Site located on the northwest corner of Adamson St S and No 10 Sideroad.
- Alternative 2 – Site located on the southwest corner of Adamson St S and No 10 Sideroad.
- Alternative 3 – Site located on the north side of No 10 Sideroad, approximately 375m west of the No 10 Sideroad/Adamson St S intersection.

Alternative 1 was selected as the preferred site for the Georgetown Southeast Wastewater Pumping Station. This site is located at the southeast corner of the future urban boundary expansion adjacent to the Credit Valley Conservation Regulation Limit. Approximately 0.04ha will be required.

Site Requirements:

- Feasible and technically viable option in line with current planning
- Minimize impact on local population and the environment
- Minimize financial outlay
- The construction of 40 L/s wastewater pumping station will require a footprint of approximately 20m x 20m or 0.04 ha
- Power availability

Legend

Preferred Wastewater Infrastructure

- Wastewater Pumping Station

Preferred Linear Alignment

- Preferred Forcemain Alignment
- Preferred Gravity Alignment
- Potential Emergency Overflow
- Site Alternatives
- Parcel Fabric

Environmental Features

- Greenbelt
- Greenland - A
- Greenland - B
- ANSI
- ESA
- Provincial Wetlands
- Regional Wetlands
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Natural Area
- Conservation Halton - Regulation Limit
- Credit Valley Conservation - Regulation Limit
- Grand River Conservation Authority - Regulation Limit
- Lakes Rivers and Creeks

Alternative 1 (Preferred)

Alternative 3

Alternative 2

6589

6496

No 10 Sideroad

Green St

Adamson St S

Winston Churchill Blvd

Unnamed tributary of Levi's Creek

Assumes pipe on road alignment

Halton Region

Sustainable Halton
Water and Wastewater Master Plan

Pump Station Site Analysis: Project No. 6589
3.5 MLD WWPS at Norval

AECOM

1:2,500
03 Oct 2011
File: 60114062-194-WW

THE REGIONAL MUNICIPALITY OF HALTON

2031 ALTERNATIVE A POPULATION & EMPLOYMENT FLOW GENERATION

May 2011 BPEs

PROJECT NO: 60114062
LOCATION: Georgetown Southeast

Average Day DWF	Res	275	L/cap/day
	Ind	410	L/emp/day
	Comm	260	L/emp/day
	Inst	135	L/emp/day
Peak Extraneous Flow		0.286	L/s/ha
Manning's Roughness Coef.		0.013	

$M = 1 + 14 / (4 + (P / 1000)^{0.5})$
where P = Population

					Total					Adjusted					Cumulative Adjusted									
Location	Branch	Traffic Zone	% of TZ (Pop & Jobs)	% of TZ (Area)	Pop.	Employees			Area	Pop.	Employees			Area	Pop.	Employees			Area	Average Day DWF	Total Equiv Pop	Peaking Factor (M)	Peak Ext. Flow	Peak DWF	Peak WWF
						Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)		Ind	Comm	Inst	(ha)	(L/s)			(L/s)	(L/s)	(L/s)
Georgetown Southeast	#6589, #6496 - Georgetown SE WWPS	560.01	100%	75%	2,730	-	76	35	51	2730	0	76	35	39	2,730	-	76	35	39	8.97	2,819	3.47	11.04	31.09	42.12

Project No. 6589 - Georgetown Southeast WWPS			
Alternatives No.	**Alternative 1**	**Alternative 2**	**Alternative 3**
Description	Pump Station site is located on the northwest corner of Adamson St S and 10th Sideroad	Pump Station site is located on the southwest corner of Adamson St S and 10th Sideroad	Pump Station site is located on the north side of 10th Sideroad, adjacent to creek, approx 375 m west of the 10th Sideroad/Adamson St S intersection.
Environmental	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only) Site is not within any environmental designated areas Emergency overflow to cross through ESA and CVC Regulated Area No watercourses on site No ANSIs/ESAs on site Site is 200 m from the nearest significant ESA, and is close to one of unnamed tributary of Levi's Creek (permanent warm water) to the west.	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only) Site is not within any environmental designated areas Emergency overflow to cross through ESA and CVC Regulated Area No watercourses on site No ANSIs/ESAs on site Site is 200 m from the nearest significant ESA, and is close to one of unnamed tributary of Levi's Creek (permanent warm water) to the west.	Land is currently comprised of (Prime) Agricultural Lands Lands have no natural vegetation (crops only) Site is not within any environmental designated areas Emergency overflow to cross through ESA and CVC Regulated Area No watercourses on site No ANSIs/ESAs on site Site is 1650 m from the nearest significant ESA, but is directly adjacent to unnamed tributary of Levi's Creek (permanent warm water) to the west.
Technical	Site is approximately 300 m further from forcemain discharge point than Alternative 3 Greenfield Construction Low potential for conflict with utilities Site is located at low elevation within new development area Short distance to Silver Creek for emergency overflow pipe Longest forcemain distance required Good access to 10th Sideroad and Winston Churchill Blvd/Adamson St S	Site is approximately 105 m further from to forcemain discharge point than Alternative 1. Greenfield Construction. Low potential for conflict with utilities. Site is located at low elevation near new development area Short distance to Silver Creek for emergency overflow pipe Longest forcemain distance required Good access to 10th Sideroad and Winston Churchill Blvd/Adamson St S	Site is approximately 300 m closer to forcemain discharge point than Alternative 1 Greenfield Construction Low potential for conflict with utilities Site is located at a relatively low elevation within new development area, may need slightly deeper sewers to reach station Longer distance to Silver Creek for emergency overflow pipe Shortest forcemain distance required Good access to No. 10 Sideroad
Socio / Cultural	Site is located on (Prime) Agricultural Lands. Minimal traffic disruptions / disturbance expected along 10 Sideroad during construction. Moderate impact on several residences are located to the east of the site. The site is adjacent to a cemetery, located near the intersection of 10th Sideroad and Winston Churchill Boulevard. Site is located within new development, and with frontage on 10th Sideroad Moderate potential impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Site is located directly across from a cemetery, therefore extra safety precautions will be necessary during construction. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Moderate socio/cultural impacts due to proximity to local residences.	Site is located on (Prime) Agricultural Lands. Moderate traffic disruptions / disturbance expected along 10 Sideroad and Winston Churchill Boulevard during construction. Moderate impact on several residences are located to the east of the site. The site is adjacent to a cemetery, located near the intersection of 10th Sideroad and Winston Churchill Boulevard. Site is located outside of planned urban boundary expansion, and with frontage on 10th Sideroad and Winston Churchill Blvd Moderate potential impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Site is located directly across from a cemetery, therefore extra safety precautions will be necessary during construction. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Greatest socio/cultural impacts due to proximity to a local residences and local church.	Site is located on (Prime) Agricultural Lands, land could be of little use due the presence of a small unnamed tributary of Levis Creek. Moderate traffic disruptions / disturbance expected along 10 Sideroad during construction. No existing residential areas within 800 m of the proposed site, lowest potential impact to local residents during construction Site is located within new development, and with frontage on 10th Sideroad and Adamson St S Low potential impact on nearby landowners, as construction will be confined to existing property limits and outside residential areas. Any noise disturbance will be limited by ensuring construction takes place during normal working hours. Any dust will be controlled through construction contract obligations. Lowest socio/cultural impacts due to proximity to local residences.
Financial	Pump Station construction and depth same as other alternatives. Lower emergency overflow distance/cost Higher forcemain distance/cost.	Pump Station construction and depth same as other alternatives. Lower emergency overflow distance/cost Higher forcemain distance/cost.	Pump Station construction and depth same as other alternatives. Highest emergency overflow distance/cost Lowest forcemain distance/cost.
Legal / Jurisdictional	Property acquisition (approx 0.04 ha) is required. Emergency overflow to cross through ESA and CVC Regulated Area Low implementation risk due to limited property availability.	Property acquisition (approx 0.04 ha) is required. Emergency overflow to cross through ESA and CVC Regulated Area Low implementation risk due to limited property availability.	Property acquisition (approx 0.04 ha) is required. Emergency overflow to cross through ESA and CVC Regulated Area Low implementation risk due to limited property availability.
Overall Score	**Moderate**	**High**	**Moderate**

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Date Prepared/Updated:	29-Sep-11	Project Number:	N/A
Version Number:	3	IPFS:	6589
Prepared/Updated By:	AECOM		

Project Description:

3.6 ML/d WWPS on 10th Side Rd in Georgetown Southeast Greenfield Growth Area (42 L/s)

Scope of Work:

New 3.6 ML/d (42 L/s) WWPS on the southwest corner of 10th Sideroad and Winston Churchill Blvd in Georgetown Southeast Greenfield Growth Area. This project will be constructed to pump flow from the future growth areas in southeast Georgetown north via the new Twinned 250 mm WWFM to the existing Georgetown wastewater network. An emergency overflow is planned to run from the station to approximately 350m north, then east through an ESA, discharging to Silver Creek.

Project Justification:

Wastewater network upgrade required to service future growth area in Georgetown. This project will be constructed in order to pump flow from the future growth areas in southeast Georgetown (Near Norval) via the new Twinned 250 mm WWFM (Project # 6496) from Norval WWPS to Argyll Rd. Flows will ultimately drain through existing network towards the Georgetown WWTP.

Class EA Requirements (Special Studies Required, Schedule A, A+, B or C and Justification):

Schedule B

Triggers Affecting Project Need:

Projected population and employment growth in southeast Georgetown (Near Norval)

Project Timing:

In Service:	2025	Design:	2022
Class EA:	B	Construction:	2023

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Oversizing/Benefit to Existing

No oversizing and benefit to existing.

Property Requirements:

Land acquisition required (approximately 0.04 ha)

Cost Estimate (2012 Dollars): Refer to Cost Estimate Spreadsheet Attachment

Permits and Approvals Required:

	Yes	No	If yes, describe type:
MOE Permit to Take Water	X		Wet well construction
MOE Certificate of Approval - Water		X	
MOE Certificate of Approval - Sewage	X		Direct Submission
MOE Certificate of Approval - Air	X		Diesel Generator
Class Environmental Assessment		X	Covered in MP (2011)
Ministry of Natural Resources	X		Consultation re: Endagered Species Act
Department of Fisheries Approval		X	
Transport Canada/Navigable Waters		X	
Archaeological Stage 1,2,3,4	X		Phase 1
Marine Archaeological		X	
Site Plan	X		
Building Permit	X		
Conservation Permit	X		Req consultation with CVC
Ministry of Transport - Encroachment Order		X	
Rail Crossing		X	
Gas Pipeline Crossing		X	
Other		X	

Public Works

DEVELOPMENT PROJECT TRACKING SHEET

Attachments

		Comment
i.	Plan & Profiles	
ii.	Sketch Of Facility	
iii.	Cost Estimates	
iv.	Calcs/Spreadsheet	
v.	Other	

Additional Comments:

Evaluation Matrix attached
Site Alternative Map attached
Alternative #3 Preferred
Forcemain alignment (within Road ROW) and WWPS location is based on connection to the existing wastewater collection system and will provide opportunity to send flows from the Georgetown Southeast Greenfield Growth Area to the existing Georgetown WWTP. Flow diversion (peel off) from the Georgetown South area to Mid-Halton WWTP is achieved by project #6506 which could also provide the opportunity to divert flow from Georgetown Southeast. Pumping from #6590 directly to #6506 at 9th Ln/10th Sideroad is also a feasible solution for sending Georgetown Southeast flows to the Mid-Halton WWTP catchment area. It is anticipated that if a gravity collection network is planned for Norval in the future, the overall strategy for Georgetown Southeast will be updated in order to develop a combined servicing solution for the two areas.

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

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• Final refinement of construction methodologies
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• 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.

Circulation:

Manager		(date/initial)
Project Manager		(date/initial)

To be completed by Infrastructure Planning Department

Component ID	_____	Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)
		Staging	_____	(yr)	_____ ($)