Appendix E

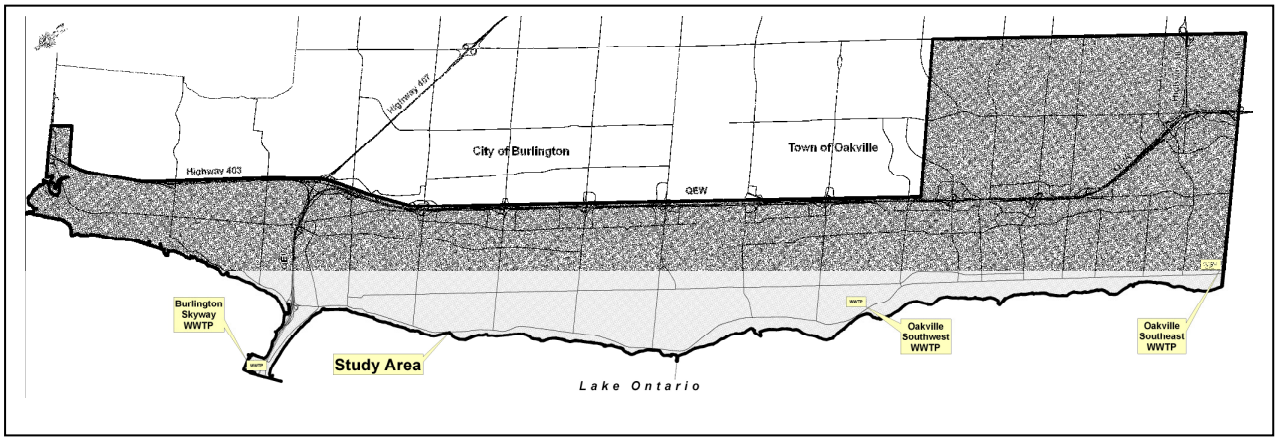
Detailed Consultation Program Information

NOTICE OF STUDY COMMENCMENT AND PUBLIC INFORMATION CENTRE #1

PUMPING STATION CAPITAL NEEDS ASSESSMENT AND MASTER PLAN CLASS ENVIRONMENTAL ASSESSMENT STUDY

The Study

The Regional Municipality of Halton is undertaking a Pumping Station Capital Needs Assessment and Master Plan Class Environmental Assessment Study (Master Plan Class EA Study) for 59 sewage pumping stations located in south Burlington and south Oakville. The aim of this study is to take an integrated approach to the planning and asset renewal of the pumping stations within the drainage areas of the Burlington Skyway, Oakville Southwest and Oakville Southeast Wastewater Treatment Plants. The Master Plan Class EA Study is addressing and integrating three important issues: normal aging and deterioration of pumping stations, capacity demands (current and future) and operational efficiency. The results of the study will be incorporated into the development of servicing options for the Sustainable Halton Water and Wastewater Servicing Master Plan Study.



The Process

The study is being conducted in accordance with the requirements for master plans under Section 4, Approach #2 of the Municipal Class Environmental Assessment (Municipal Engineers Association 2007), which is an approved process under the Ontario Environmental Assessment Act. The Master Plan Class EA Study will fulfill Phases 1 and 2 of the Municipal Class EA process. As such it will identify a range of servicing strategy solutions, evaluate the proposed alternative solutions, and recommend a Preferred Servicing Solution. Public consultation is an integral part of the planning process.

As part of the Master Plan Class EA Study, Public Information Centres (PICs) will be held in Burlington and Oakville. PIC #1 will present background information on the study and will seek public input on the Problem/Opportunity Statement, Conceptual Solutions and the draft evaluation criteria. Representatives from the Region and its consultants will be present to provide information and answer questions. The PICs are scheduled as follows:

PIC #1 for Burlington

Date: **Tuesday, March 9, 2010**
Time: **6:15 pm to 9:00 pm with presentation at 7:00 pm**
Location: **Tom Thomson School – Gym**
2171 Prospect Street, Burlington, ON

PIC #1 for Oakville

Date: **Thursday, March 11, 2010**
Time: **6:15 pm to 9:00 pm with presentation at 7:00 pm**
Location: **Oakwood School – Gym**
357 Bartos Drive, Oakville, ON (location to be confirmed)

You are encouraged to attend the PIC and provide your comments so they can be included in the study. Comments received will be considered in identifying the Preferred Servicing Solution and mitigation measures. Comments on the study and information are being collected to assist the project team meet the requirements of the Municipal Class EA process. With the exception of personal information, all comments will become part of the public record.

Upon completion, a Master Plan Report will be prepared to document the planning process followed, including conclusions and recommendations, and how public input was received and addressed. The Master Plan Report will be available for public review for 30 calendar days. At that time, a Notice of Completion will be published and mailed to those on the project contact list.

Please contact either one of the following project team members if you have any questions or comments, wish to obtain more information on the project, or if you would like to be added to the mailing list:

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This notice was first issued on February 25, 2010

Municipal Class Environmental Assessment Study

Wastewater Pumping Stations Master Plan

PUBLIC INFORMATION CENTRE #1

March 9 & 11, 2010

R.V. Anderson Associates Limited
environment · infrastructure

Project Team

Halton Region

PROJECT MANAGER

Magda Bielawski

John Duong

Consultant

R.V. Anderson Associates Limited
environment • infrastructure

PRIME CONSULTANT

Reg Andres

COMMUNICATIONS / CONSULTATION

Joanna Kidd

Kidd Consulting

ENVIRONMENTAL SCIENCES

LGL

CULTURAL HERITAGE

ASI

Public Information Centre (PIC) #1

Purpose

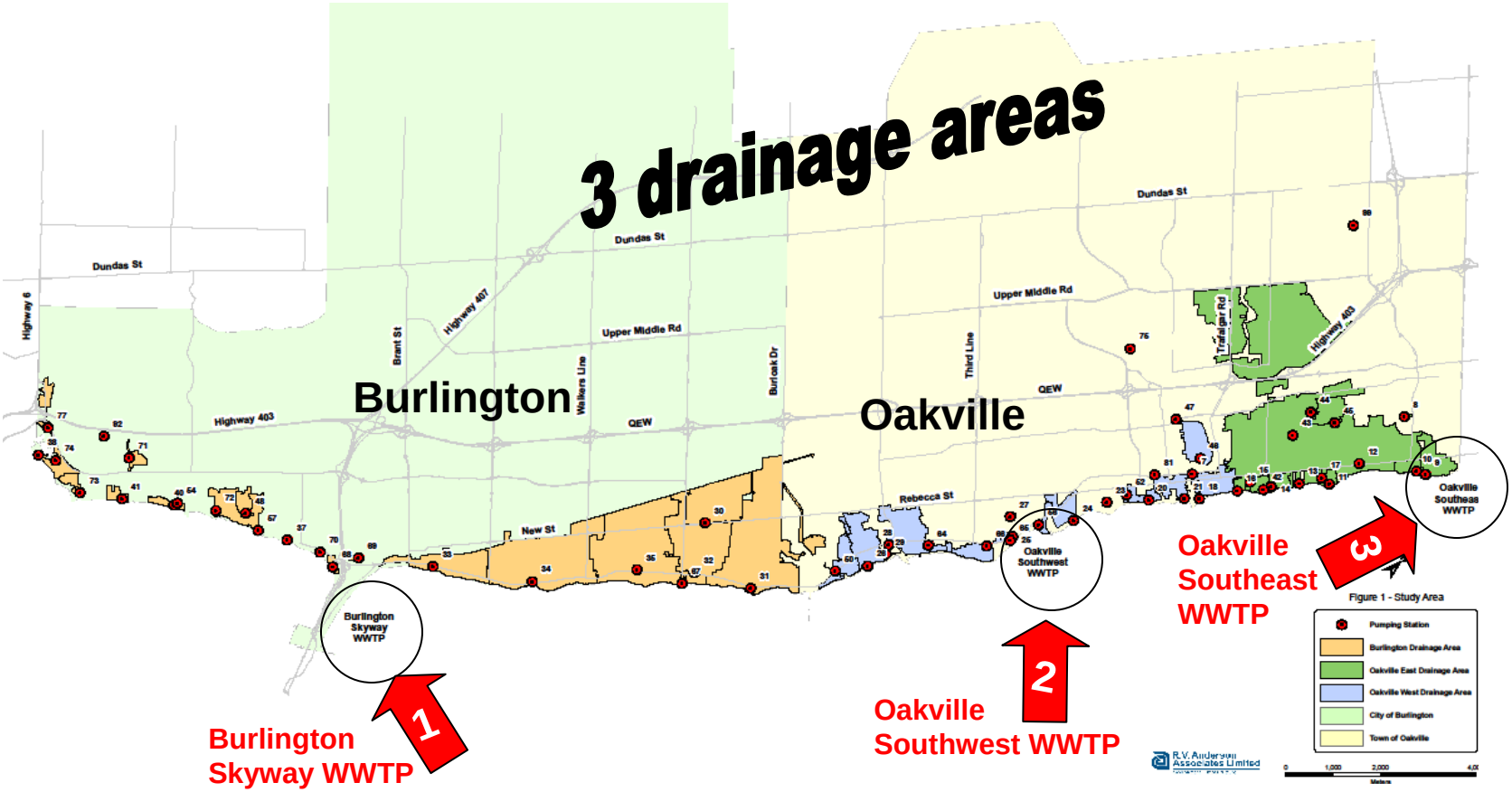
1. Present the overall objectives of the project
2. Present and get feed back on :
    - the problem / opportunity statement
    - the alternative solutions being considered
    - the evaluation criteria
3. Describe the public process

Background Information

1. The Region of Halton provides wastewater services to homes and businesses
2. The Region's wastewater collection system includes a series of pipes that transport sewage from houses and businesses to one of the Region's wastewater treatment plants where it is treated
3. Most sewage is transported by gravity from areas of higher elevation to areas of lower elevation
4. Sewage pumping stations are needed where the pipes are too deep for gravity flow.

Background Information

5. The Region has 59 of these pumping stations in the study area of this project.



Background Information

6. It is preferable to avoid pumping stations in the system – they consume energy and have higher and more complex operational requirements
7. In some cases, sewage pumping stations can be replaced by diverting the sewage they collect to deep trunk sewers
8. This eliminates the need to operate and maintain the station's electrical and mechanical systems and can reduce the potential for system overflows

Background Information

Three (3) types of pumping stations:

1. Wetwell / drywell station

2. Submersible station

3. Pre-fabricated station

Background Information

Wetwell / Drywell station

(West 18 Pumping Station)

Access to lower levels

Pump motor
– first level below grade

Pump & discharge piping
– 2nd level below grade in drywell

Background Information

Submersible station

(Joshua Creek Pumping Station)

Access to wet well

Submersible pumps in wet well

Typical piping & valves

Background Information

Pre-fabricated station

(Marine Drive Pumping Station)

External access to pump chamber and wet well

Access to pump chamber

Pump and discharge piping

Access to wet well

Project Objectives

Undertake an integrated approach to the planning and asset renewal of 59 Region of Halton sewage pumping stations in Burlington and Oakville including three primary activities:

1. *Assessment of the physical condition and renewal /replacement needs of 59 pumping stations*
2. *Assessment of the hydraulic capacity and expansion / upgrade needs of the pumping stations to meet growth requirements*
3. *Assessment of the overall efficiency in servicing the drainage areas and strategic alternatives in a Master Plan Class Environmental Assessment*

Problem / Opportunity Statement

Halton Region owns and operates 59 sewage pumping stations in the 3 drainage areas serviced by the Burlington, Oakville SW and Oakville SE Wastewater Treatment Plants.

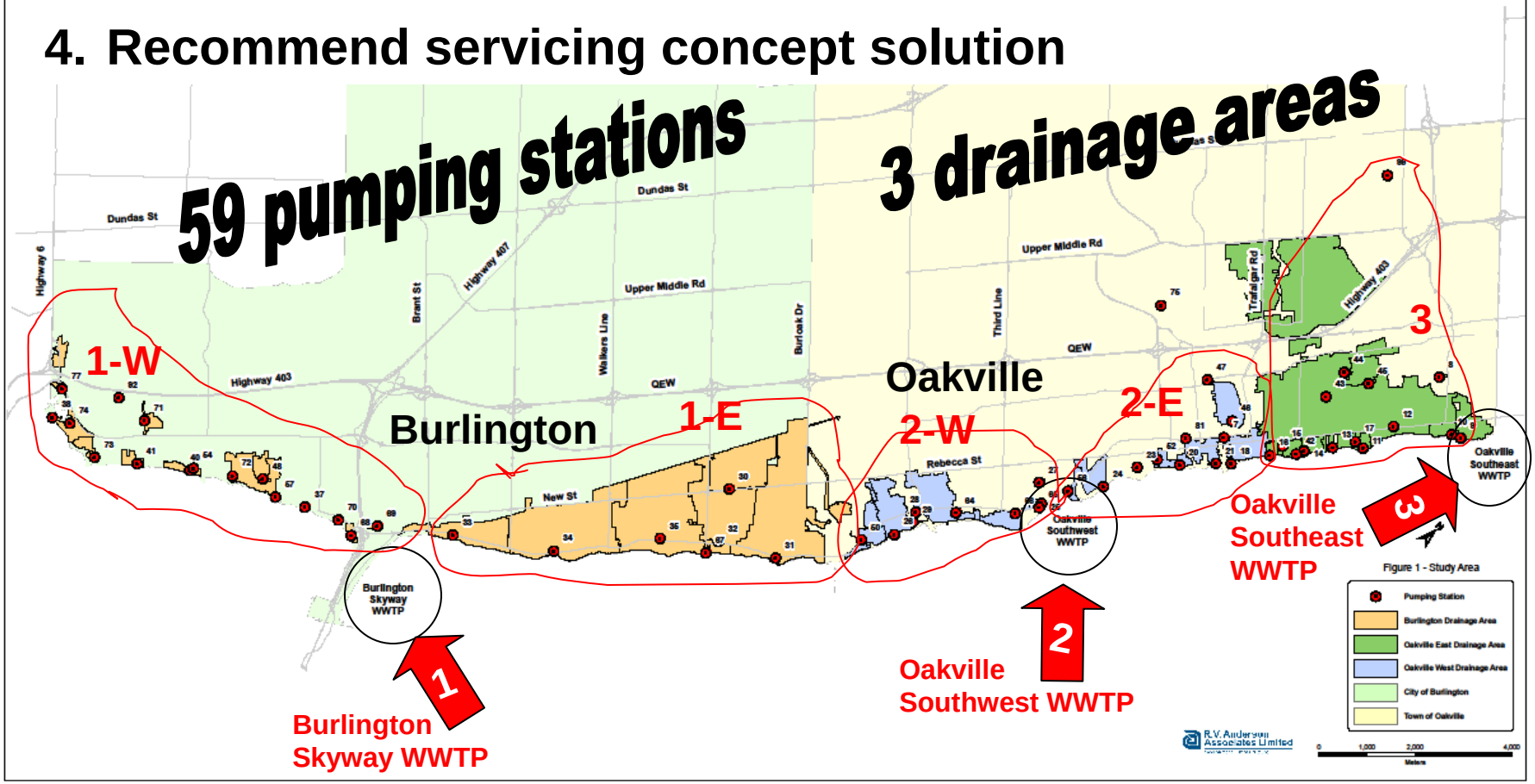
The Region is undertaking a Master Plan Class Environment Assessment (EA) to rationalize the sewage pumping system, i.e., to effectively and efficiently meet the needs of today and the future.

The Class EA will address and integrate three important issues:

1. normal aging and operational deterioration of the pumping stations;
2. capacity demands *(current demands and future demands associated with Sustainable Halton and Places to Grow);* and
3. operational efficiency.

Overview - STUDY AREA & SCOPE

1. Assess PS <u>condition</u> and hydraulic <u>capacity</u>
2. Servicing concepts identification / rationalization review
3. Assess alternative solutions in context of Class EA
4. Recommend servicing concept solution



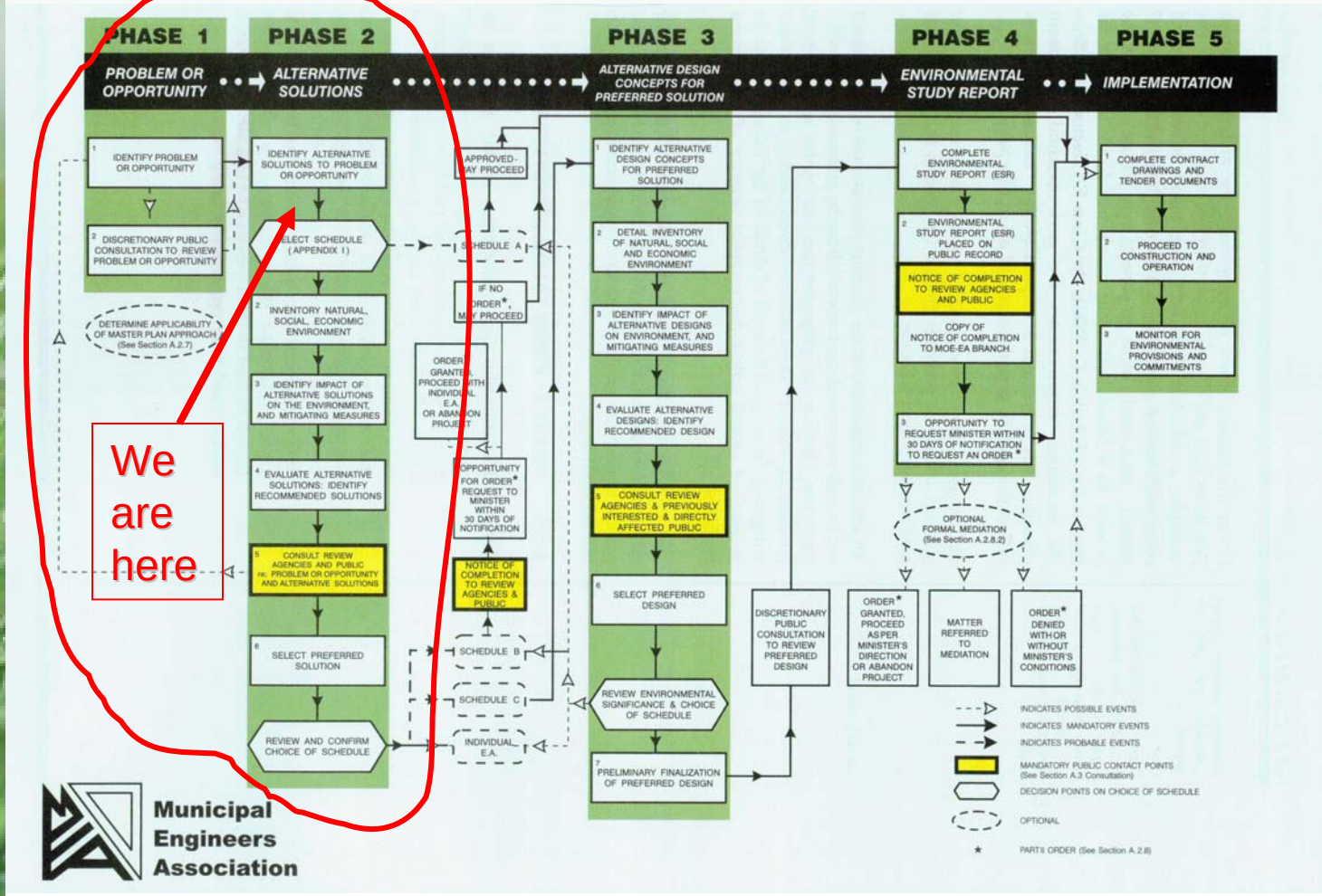
Condition Assessment

Preliminary work on pumping stations has determined:

- **Current physical condition**
- **Estimated remaining life**
- **Operating and maintenance issues**
- **Capacity to meet existing and future flows**

We are now carrying out the Master Plan Class Environmental Assessment study

Class Environmental Assessment



Master Plan

In the context of the MEA Class EA, a master plan is a Schedule B undertaking and requires Phases 1 and 2 to be completed (Conceptual solutions)

The Master Plan, in the context of MEA Class EA, does not include:

- Phase 3 – Design alternatives
- Phase 4 – Environmental Study Report documentation

Project Schedule

STAGE 1

November 2008

Project Initiation

STAGE 2

December 2008

December 2009

Condition Assessment / Site Inspections
Hydraulic Assessment / Field Verifications

STAGE 3

January 2010

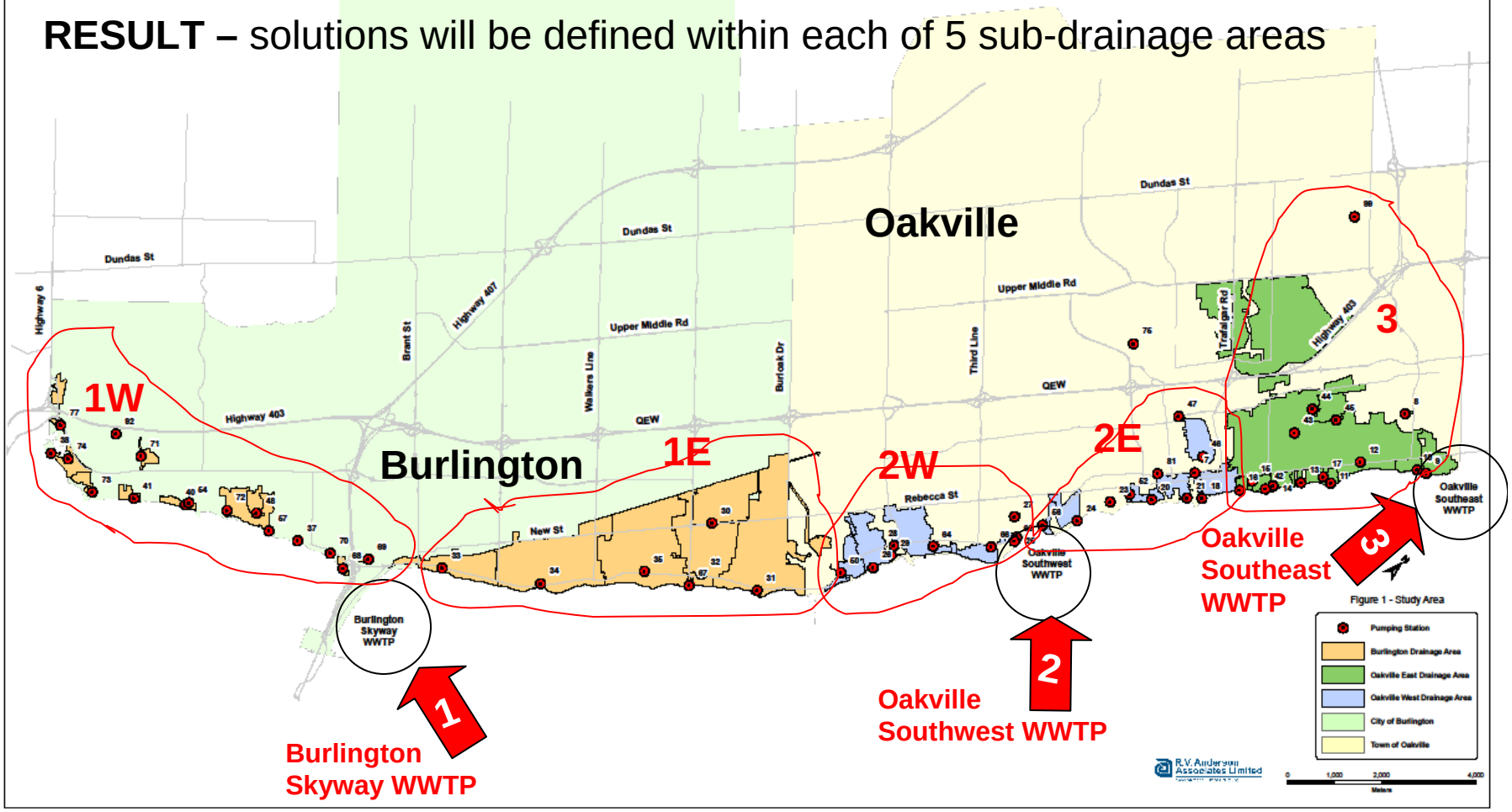
September 2010

Class EA Processes – Opportunity statement, alternatives identification & assessment, preferred alternative development, PIC's

Alternative Solutions

APPROACH – consider solutions in the context of the grouping of PS's associated with each main trunk sewer system inflow to the 3 treatment plants.

RESULT – solutions will be defined within each of 5 sub-drainage areas



Three (3) Conceptual Solutions

1. **Status quo**

   - **continue to maintain the existing pumping stations and replace and upgrade each station on its own merits and needs to address deterioration, capacity and operational efficiency**

   - **each pumping station is considered independently of other station needs**

Three (3) Conceptual Solutions

2. Partial Deep Sewer / Interceptor Tunnel

- **Eliminate groups of pumping stations within a sub-drainage area by installing sections of a deep gravity sewer / interceptor in locations that can be readily accommodated without the need for excessively deep installation as a result of natural barriers (e.g. major creek / river crossings) or deep wet wells in existing pumping stations**
- **Maintain specific individual existing pumping stations that convey sewage across natural barriers that might otherwise result in excessively deep or impractical design of a deep gravity sewer**

Three (3) Conceptual Solutions

3. Deep Sewer Interceptor / Tunnel

- **Eliminate all pumping stations by converting to a deep sewer / interceptor concept. This requires the installation of a new deep gravity sewer to be constructed from the treatment plant to the extremity of the sub-drainage area at a depth below existing PS influent sewers**
- **Local sewers may be needed to connect flows to the deep trunk sewer from the pumping station site**
- **A new lift station at the treatment plants is anticipated as a requirement to lift the sewage to the hydraulic grade of the treatment plants, if needed**

1-W… Burlington Skyway (west trunk)

Option 1

- Upgrade / renewal of 15 independent PS's

Option 2

- Eliminate 11 PS's with installation of new deep trunk (west extremity)
- Upgrade / renewal of 4 independent PS's

Option 3

- Eliminate 15 PS's with installation of new deep trunk sewer to WWTP

1-E… Burlington Skyway (east trunk)

Option 1

- Upgrade / renewal of 8 independent PS's

Option 2

- Eliminate 6 existing PS's with installation of new deep trunk (5 PS's at east extremity replaced with new deep wet well station)
- Upgrade / renewal of 2 independent PS's

Option 3

- Eliminate 8 PS's with installation of new deep trunk sewer to WWTP

2-W… Oakville Southwest (west trunk)

Option 1

- Upgrade / renewal of 9 independent PS's

Option 2

- Eliminate 5 existing PS's with installation of 2 new sections of deep trunk sewer
- Upgrade / renewal of 4 independent PS's

Option 3

- Eliminate 9 PS's with installation of new deep trunk sewer to WWTP

2-E… Oakville Southwest (east trunk)

Option 1

- Upgrade / renewal of 13 independent PS's

Option 2

- Eliminate 10 existing PS's with installation of several new sections of deep trunk sewer
- Upgrade / renewal of 3 independent PS's

Option 3

- Eliminate 13 PS's with installation of new deep trunk sewer to WWTP

3 - Oakville Southeast (west trunk)

Option 1

- Upgrade / renewal of 14 independent PS's

Option 2

- Eliminate 12 existing PS's with installation of new sections of deep trunk sewer
- Upgrade / renewal of 2 independent PS's

Option 3

- Eliminate 14 PS's with installation of new deep trunk sewer to WWTP

Categories of Evaluation Criteria

	Weighting
1. Financial criteria	(25% - ?)
2. Natural Environmental criteria	(25% - ?)
3. Social criteria	(25% - ?)
4. Operational / Technical criteria	(25% - ?)

Financial Evaluation Criteria

1. Capital construction cost
2. Lifecycle capital cost profile (timing of costs)
3. Capital + O&M lifecycle cost
4. Cost of land acquisitions
5. Others…

Environmental Evaluation Criteria

1. Impact on terrestrial environment during construction
2. Long term impact on terrestrial environment
3. Impact on aquatic environment during construction
4. Long term impact on aquatic environment
5. Ability to meet regulatory constraints
6. Reduction of system overflows
7. Others…

Social Evaluation Criteria

1. Visual / aesthetic impact on existing local community during construction
2. Long term visual / aesthetic impact on local community
3. Impact of odour / noise on local community
4. Long term impact of operations and maintenance activities on local community
5. Impact on adjacent land uses
6. Reduction of risk of basement flooding
7. Others…

Technical/Operational Evaluation Criteria

1. Constructability
2. Risk of service failure / reduced level of service
3. Complexity of operations
4. Impact on health and safety of operations and maintenance staff
5. Impact on wastewater staffing qualifications and training requirements
6. Complexity of approval processes
7. Others…

Key Questions

1. Do you have any comments on the Problem / Opportunity statement?
2. Do you have any comments on the alternative solutions being considered?
3. With respect to evaluation criteria:
   a) Are there any criteria that should be added, removed or changed?
   b) By percentage, how would you weight the relative importance of the criteria categories (financial natural environment, social and operational / technical)?

Communication

Notification of study and PIC#1:

- General public (ads in local papers, website)
- Residents near pumping stations (letter)
- Residents associations (letter)
- Councillors (e-mail)
- Environmental groups (letter)
- Municipalities, agencies, utilities, First Nations (letter)
- Developers (HDLC)

Consultation

- InTAC (Regional staff)
- ExTAC (municipalities, HRCA, agencies, regional environmental groups)
- PIC #1 (March 2010)
- PIC #2 (June 2010)
- Feedback by letter and e-mail

Next Steps

1. Summarize results of PIC
2. Prepare environmental inventories and impact statements
3. Evaluate alternatives against identified criteria and select preferred solution
4. Review of preferred solution by InTAC, ExTAC and public (at PIC#2)

Municipal Class Environmental Assessment Study

Wastewater Pumping Stations Master Plan

Contact: Region of Halton - Magda Bielawski

Phone: (905) 825 – 6000 Ext. 7426

Magda.Bielawski@halton.ca

Thank you for attending this information centre!

R.V. Anderson Associates Limited
environment · infrastructure

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY

WASTEWATER PUMPING STATIONS MASTER PLAN

WELCOME

TO

PUBLIC INFORMATION CENTRE #1

March 9 & 11, 2009

6:15 pm – 9:00 pm

Halton REGION

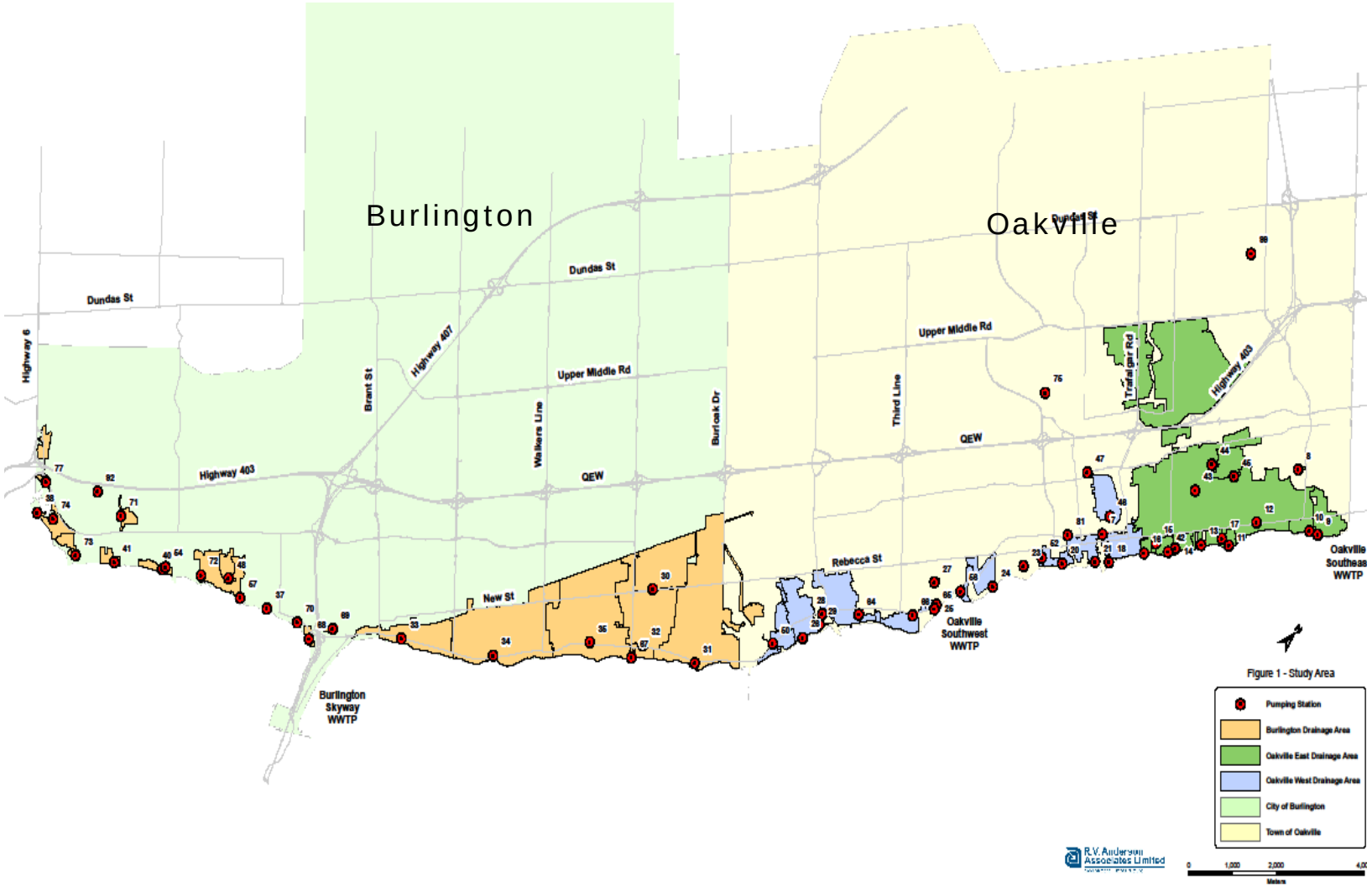
R.V. Anderson Associates Limited
engineering · environment · infrastructure

CANADA'S 50 BEST MANAGED COMPANIES

WHAT THIS PROJECT IS ABOUT

- This project relates to wastewater services in the south end of Burlington and Oakville and the pumping station facilities are an integral component of this service
- The Region of Halton has 59 wastewater pumping stations that are part of the study
- The primary purposes of this Public Information Centre are to:
  - Present the overall objectives of this project
  - Present and request feedback on:
    - our problem / opportunity statement
    - alternative solutions being considered
    - evaluation criteria
  - Describe the public process

STUDY AREA


Burlington
Oakville
Dundas St
Dundas St
Highway 6
Brant St
Highway 407
Upper Middle Rd
Walkers Line
Burloak Dr
Third Line
Upper Middle Rd
Trafalgar Rd
Highway 403
QEW
Highway 403
QEW
New St
Rebecca St
Burlington Skyway WWTP
Oakville Southwest WWTP
Oakville Southeast WWTP
Figure 1 - Study Area
Pumping Station
Burlington Drainage Area
Oakville East Drainage Area
Oakville West Drainage Area
City of Burlington
Town of Oakville
R.V. Anderson Associates Limited
0
1,000
2,000
Metres

WHAT IS A PUMPING STATION?

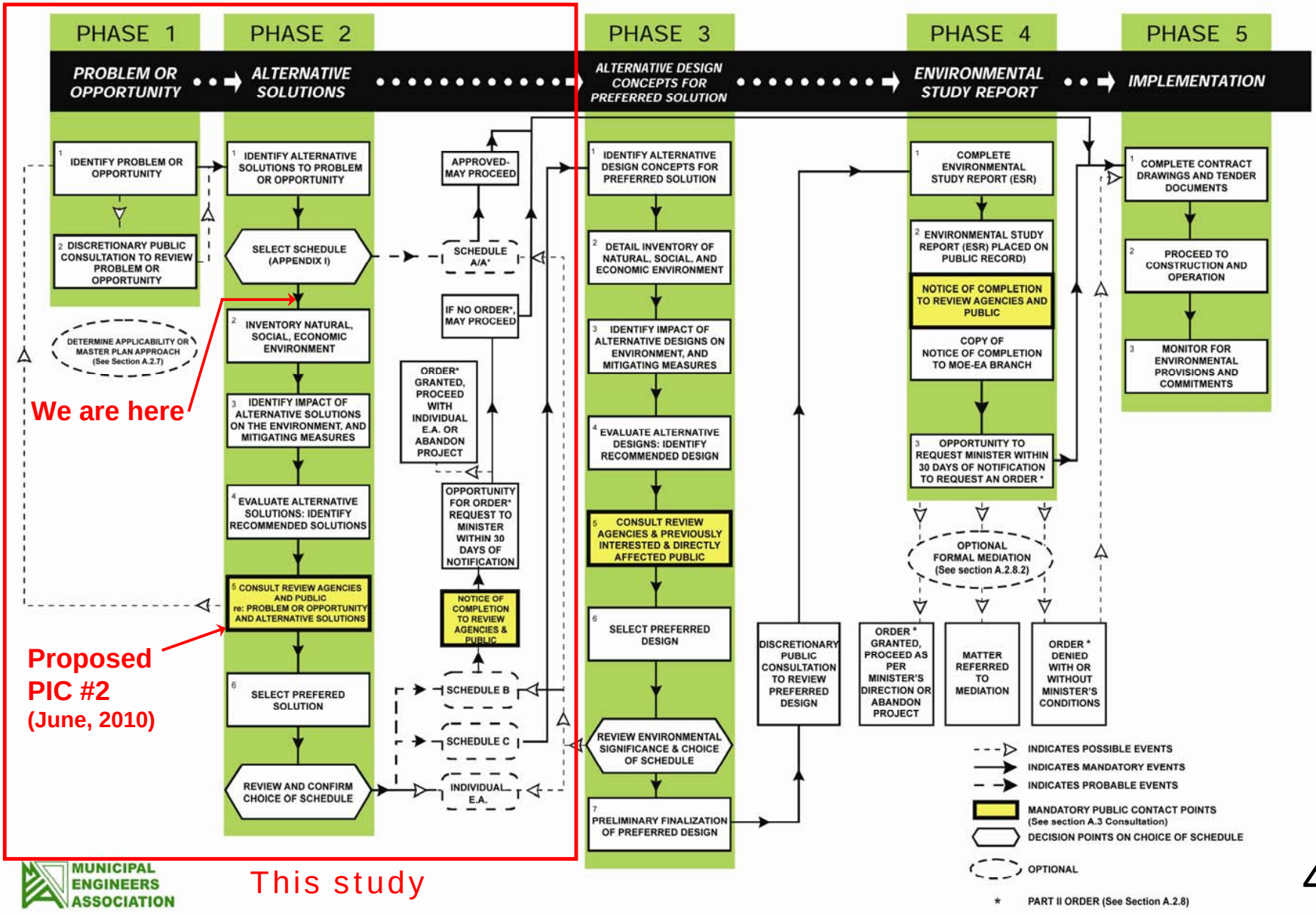
- A pumping station sends sewage from a low elevation to a high elevation using pumps
  - If an area is lower than the elevation of the main trunk gravity sewer, it's sewage from the area will drain to a pumping station;
  - The pumping station will then pump sewage through a pressurized sewer (i.e. force main) to the trunk gravity sewer.

Wet well / Dry well station

Submersible station

Pre-fabricated station

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY PROCESS



MUNICIPAL ENGINEERS ASSOCIATION

This study

PROJECT OBJECTIVES

- Condition assessment
  - Evaluate the physical condition of each pumping station and determine timeline for replacement if necessary
- Hydraulic assessment
  - Determine the capacity of each pumping station and see if they meet the projected future capacity of the areas they serve
- Servicing concept assessment master plan
  - Determine the most effective servicing concept for each drainage area

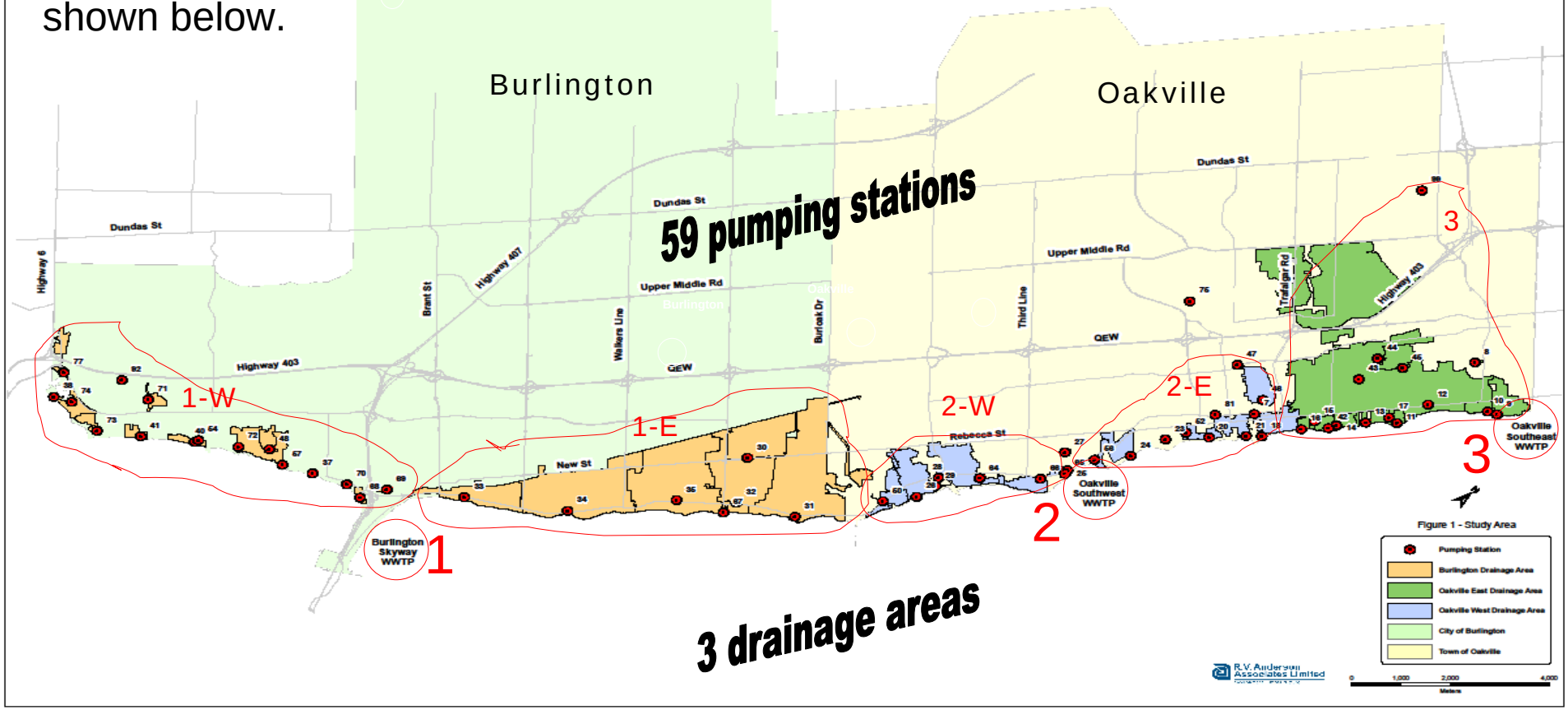
PROBLEM / OPPORTUNITY STATEMENT

- Halton Region owns and operates 59 pumping stations in three primary drainage areas. These areas are defined by the service area for each of Halton's three wastewater treatment plants.
- The Region is undertaking a Master Plan Class Environment Assessment (EA) to ensure the sewage pumping system effectively and efficiently meet the needs of today and the future.
- The Class EA will address and integrate three important issues:

    1. normal aging and operational wear and tear of the pumping stations;
    2. capacity demands *(current demands and future demands associated with Sustainable Halton and Places to Grow);* and
    3. operational efficiency.

ALTERNATIVE SOLUTIONS - APPROACH

Solutions will be developed by grouping the pumping stations into five sub-draining areas, based on how they reach Halton's three wastewater treatment plants as shown below.



SOLUTION CONCEPTS

- Alternative 1 - Status Quo
  - Leave all pumping stations in their current capacity and assess each one independently.
  - Upgrade pumping stations if necessary
- Alternative 2 - Partial Deep Sewer / Tunnel
  - Eliminate certain groups of pumping stations within a drainage area and replace with deep gravity sewers
  - Maintain existing pumping stations are not ideal to be replaced depending on decision making criteria
- Alternative 3 - Deep Sewer / Tunnel
  - Eliminate all existing pumping stations and replace with deep sewers / tunnels
  - Connect all local flows to deep sewers / tunnels via the old pumping stations and new manholes

BURLINGTON – West Trunk

Alt. 1

Alt. 2

Alt. 3

BURLINGTON – East Trunk

Alt. 1

Alt. 2

Alt. 3

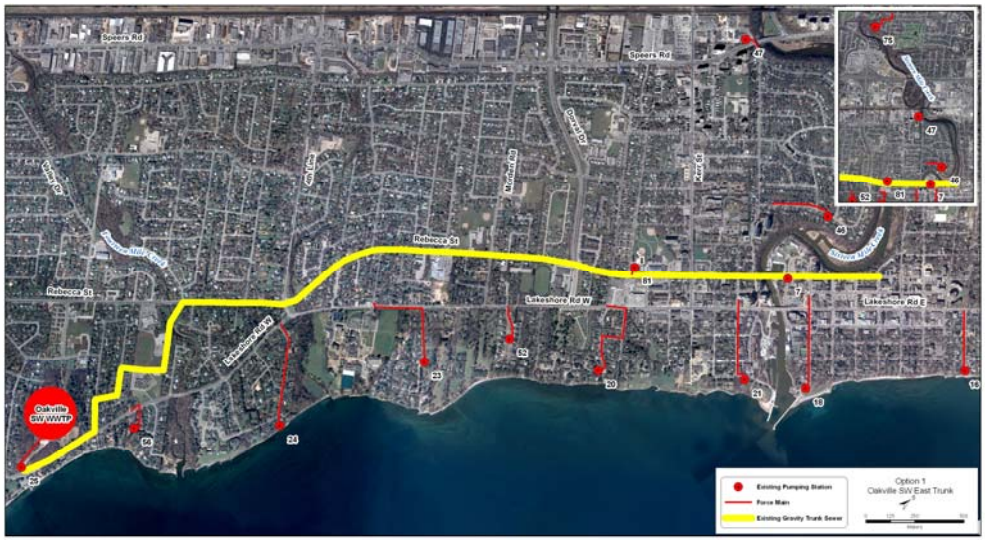
OAKVILLE SW – West Trunk

Alt. 1

Alt. 2

Alt. 3

OAKVILLE SW – East Trunk



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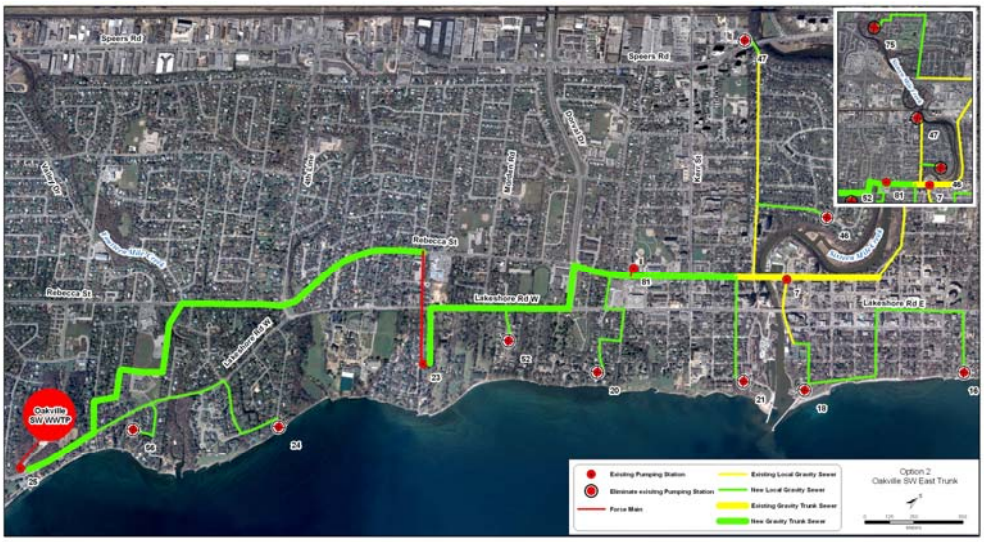

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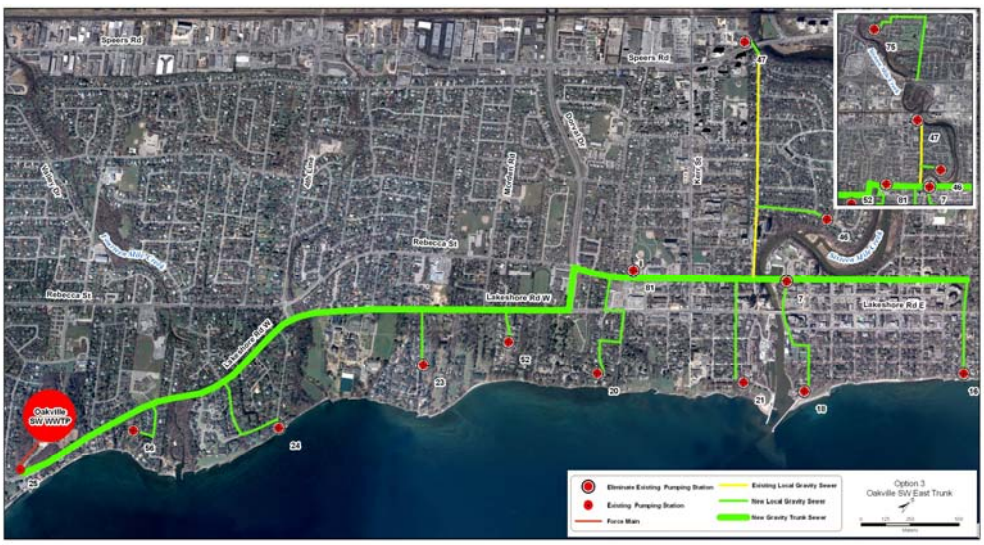
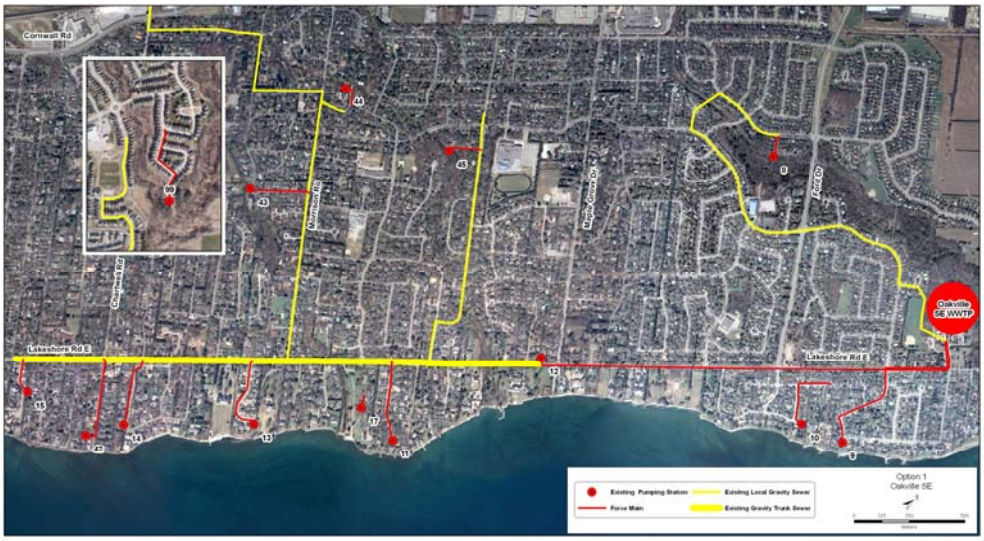


Alt. 3

OAKVILLE SE



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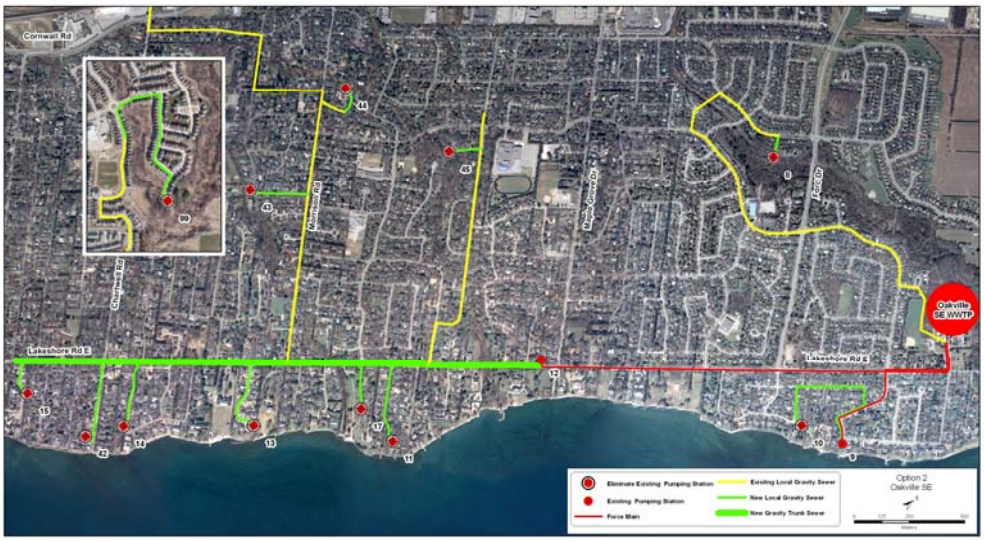

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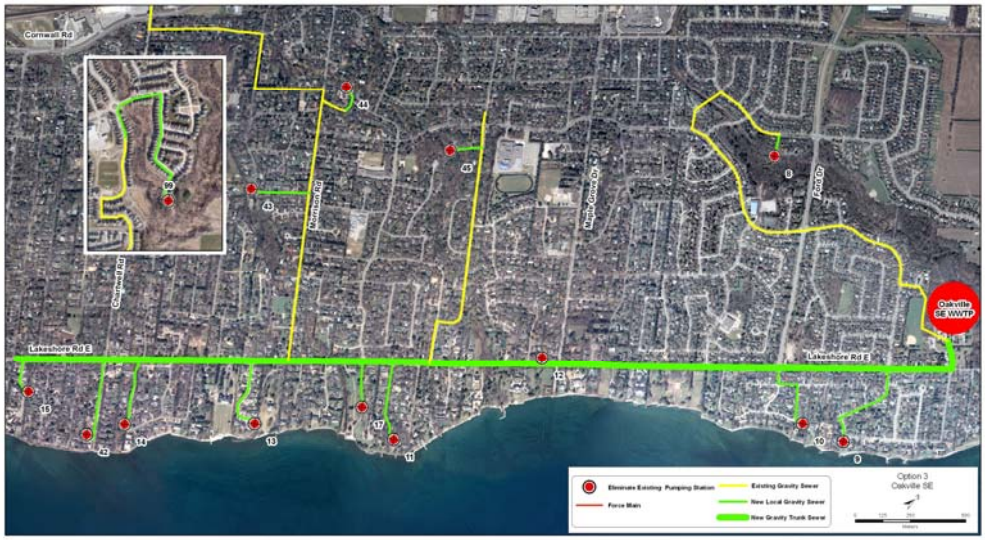

Alt. 3

EVALUATION CRITERIA CATEGORIES

Alternative solutions are proposed to be assessed based on the following criteria categories:

	Relative Weighting
▪ Financial……..	25% (?)
▪ Environmental …….	25% (?)
▪ Social ……..	25% (?)
▪ Technical / Operational ……	25% (?)

We need to determine the relative importance or weighting of each of these categories in selecting a preferred solution.

The above weighting suggests these criteria are all of equal importance

FINANCIAL CRITERIA

The following financial criteria are being considered. The relative importance or per cent weighting of each criteria will also need to be identified. The numbers shown are examples only.

	Relative Weighting
1. Capital construction cost ……..	30% (?)
2. Lifecycle capital cost profile (i.e. timing of these costs) ……	15% (?)
3. Capital + O&M lifecycle cost ……..	45% (?)
4. Cost of land acquisitions ……..	10% (?)
5. Others (?)	
	100%

ENVIRONMENTAL CRITERIA

The following <u>environmental</u> criteria are being considered. The relative importance or per cent weighting of each criteria will also need to be identified. The numbers shown are examples only.

	Relative Weighting
1. Impact on terrestrial environment during construction …….	5% (?)
2. Long term impact on terrestrial environment …….	10% (?)
3. Impact on aquatic environment during construction …….	10% (?)
4. Long term impact on aquatic environment …….	15% (?)
5. Ability to meet regulatory constraints ……..	25% (?)
6. Reduction of system overflows …….	35% (?)
7. Others (?)	
	100%

SOCIAL CRITERIA

The following social criteria are being considered. The relative importance or per cent weighting of each criteria will also need to be identified. The numbers shown are examples only.

		Relative Weighting
1.	Visual / aesthetic impact during construction	5% (?)
2.	Long term visual / aesthetic impact ……	10% (?)
3.	Impact of odour / noise ……	10% (?)
4.	Long term impact of operations and maintenance activities ….	25% (?)
5.	Impact on adjacent land uses ……	25% (?)
6.	Reduction of risk of basement flooding ……	25% (?)
7.	Others (?)	
		100%

TECHNICAL / OPERATIONAL CRITERIA

The following technical criteria are being considered. The relative importance or per cent weighting of each criteria will also need to be identified. The numbers shown are examples only.

Relative Weighting

1. Ease of construction …….. 25% (?)
2. Risk of service failure / level of service reduction ……. 25% (?)
3. Complexity of operations …….. 25% (?)
4. Impact of health and safety of operations and maintenance staff…10% (?)
5. Impact on wastewater staffing qualifications and training needs…. 5% (?)
6. Complexity of approval processes ……..10% (?)
7. Others (?)

100%

EVALUATION PROCESS

Criteria	Criteria Weight	Alternative 1 Status Quo	Alternative 2 Partial Deep Gravity Sewer	Alternative 3 Deep Gravity Sewer
Financial	25%			
Social	25%			
Environmental	25%			
Technical	25%			

- **Each alternative will be rated against each criteria.**
- **A "Do Nothing" alternative will be included in the comparison as a matter of Class EA practice**

YOUR INPUT IS REQUESTED

Input Forms are available for you to provide information on:

- The “Problem / Opportunity” statement
- The alternative solutions being considered
- The evaluation criteria – we are interested in your opinion with respect to the weighting for the assessment categories and the individual criteria within each category
- Any other comments and information you would like to convey to the project team

NEXT STEPS

- Compile public/stakeholder input from Public Information Centre #1
- Prepare environmental inventories and impact assessments for each alternative
- Evaluate alternatives to identify recommended solution
- Present recommended solution at Public Information Centre #2
- Confirm preferred solution

CONTACTS

Please contact us with any questions or concerns you may have:

- Magda Bielawski, P. Eng. – Region of Halton
  Project Manager
  905-825-6000 Ext. 7426
  Magda.Bielawski@halton.ca

Pumping Station Capital Needs Assessment and Master Plan Class Environmental Assessment Study

PUBLIC INFORMATION CENTRE #1

Tuesday March 9, 2010
Burlington Art Centre
6:15 pm to 9:00 pm

Welcome to the first Public Information Centre for the Halton Region Pumping Station Capital Needs Assessment and Master Plan Class Environmental Assessment Study. The display panels provide background information on the Study, the Problem/ Opportunity Statement, the Alternative Solutions being considered, and Draft Evaluation Criteria. Regional staff and consultants are available to answer any questions you may have. The Study Team will make a presentation at 7:00 pm, followed by a Question and Answer Session (see Agenda below).

Please use the attached Comment Form to provide any questions, comments or suggestions that you might have on the Study. Your input is important to us and it will be considered in the Master Plan Class Environmental Assessment Study.

Thank you for your interest in the Study!

AGENDA FOR PRESENTATION

7:00	**Welcome** • Introductions • Purpose of the meeting • Agenda review	Joana Kidd, Kidd Consulting
7:05	**Presentation** • Background • Study Process • Problem/Opportunity Statement • Conceptual Solutions • Draft Evaluation Criteria • Next Steps	Reg Andres, R.V. Anderson
7:45	**Discussion** • Q&A	Joanna Kidd
8:45	**Adjourn** • Meeting Report • PIC #2	Joanna Kidd

Problem/Opportunity Statement

Halton Region owns and operates 59 sewage pumping stations which are located in the drainage areas of Burlington Skyway, Oakville SW and Oakville SE Wastewater Treatment Plants. The Region is undertaking a Master Plan Class Environment Assessment (EA) Study to rationalize the sewage pumping system, i.e., to effectively and efficiently meet the needs of today and the future.

The Class EA will address and integrate three important issues:

1. normal aging and operational deterioration of the pumping stations;
2. capacity demands (current demands and future demands associated with Sustainable Halton and Places to Grow); and
3. operational efficiency.

Categories of Evaluation Criteria

1. Financial criteria ……... (25% ?)
2. Natural Environmental criteria ……. (25% ?)
3. Social criteria …….. (25% ?)
4. Operational / Technical criteria ……. (25% ?)

Financial Evaluation Criteria

1. Capital construction cost
2. Lifecycle capital cost profile (timing of costs)
3. Capital + Operation & Maintenance lifecycle cost
4. Cost of land acquisitions

Environmental Evaluation Criteria

1. Impact on terrestrial environment during construction
2. Long term impact on terrestrial environment
3. Impact on aquatic environment during construction
4. Long term impact on aquatic environment
5. Ability to meet regulatory constraints
6. Reduction of system overflows

Social Evaluation Criteria

1. Visual / aesthetic impact on existing local community during construction
2. Long term visual / aesthetic impact on local community
3. Impact of odour / noise on local community
4. Long term impact of operations and maintenance activities on local community
5. Impact on adjacent land uses
6. Reduction of risk of basement flooding

Technical/Operation Evaluation Criteria

1. Constructability
2. Risk of service failure / reduced level of service
3. Complexity of operations
4. Impact on health and safety of operations and maintenance staff
5. Impact on wastewater staffing qualifications and training requirements
6. Complexity of approval processes

Pumping Station Capital Needs Assessment and
Master Plan Class Environmental Assessment Study

PUBLIC INFORMATION CENTRE #1
March 9, 2010 Burlington

1) Do you have any comments on the Problem/Opportunity Statement?

2) Do you have any comments on the Alternative Solutions being considered?

3) With respect to the evaluation criteria:

- **Are there any criteria that should be added, removed or changed?**
- **By percentage, how would you weight the criteria categories (financial, natural environment, social and operational/technical)?**

4) Do you have any other comments on the Study?

Thank you for taking part. Please hand in your Comment Form at the registration table or mail, fax or e-mail it to:

Magda Bielawski, P. Eng.
Senior Project Manager
Wastewater Planning, Public Works
Regional Municipality of Halton
1151 Bronte Road
Oakville, Ontario L6M 3L1
Tel: 905-825-6000 ext.7426
Fax: 905-825-8822
E-mail: Magda.Bielawski@halton.ca

Pumping Station Capital Needs Assessment and Master Plan Class Environmental Assessment Study

PUBLIC INFORMATION CENTRE #1

Thursday March 11, 2010
Halton Regional Centre
6:15 pm to 9:00 pm

Welcome to the first Public Information Centre for the Halton Region Pumping Station Capital Needs Assessment and Master Plan Class Environmental Assessment Study. The display panels provide background information on the Study, the Problem/ Opportunity Statement, the Alternative Solutions being considered, and Draft Evaluation Criteria. Regional staff and consultants are available to answer any questions you may have. The Study Team will make a presentation at 7:00 pm, followed by a Question and Answer Session (see Agenda below).

Please use the attached Comment Form to provide any questions, comments or suggestions that you might have on the Study. Your input is important to us and it will be considered in the Master Plan Class Environmental Assessment Study.

Thank you for your interest in the Study!

AGENDA FOR PRESENTATION

7:00	**Welcome** • Introductions • Purpose of the meeting • Agenda review	Joana Kidd, Kidd Consulting
7:05	**Presentation** • Background • Study Process • Problem/Opportunity Statement • Conceptual Solutions • Draft Evaluation Criteria • Next Steps	Reg Andres, R.V. Anderson
7:45	**Discussion** • Q&A	Joanna Kidd
8:45	**Adjourn** • Meeting Report • PIC #2	Joanna Kidd

Problem/Opportunity Statement
Halton Region owns and operates 59 sewage pumping stations which are located in the drainage areas of Burlington Skyway, Oakville SW and Oakville SE Wastewater Treatment Plants. The Region is undertaking a Master Plan Class Environment Assessment (EA) Study to rationalize the sewage pumping system, i.e., to effectively and efficiently meet the needs of today and the future.

The Class EA will address and integrate three important issues:

1. normal aging and operational deterioration of the pumping stations;
2. capacity demands (current demands and future demands associated with Sustainable Halton and Places to Grow); and
3. operational efficiency.

Categories of Evaluation Criteria

1. Financial criteria ……..... (25% ?)
2. Natural Environmental criteria ……. (25% ?)
3. Social criteria …….. (25% ?)
4. Operational / Technical criteria ……. (25% ?)

Financial Evaluation Criteria

1. Capital construction cost
2. Lifecycle capital cost profile (timing of costs)
3. Capital + Operation & Maintenance lifecycle cost
4. Cost of land acquisitions

Environmental Evaluation Criteria

1. Impact on terrestrial environment during construction
2. Long term impact on terrestrial environment
3. Impact on aquatic environment during construction
4. Long term impact on aquatic environment
5. Ability to meet regulatory constraints
6. Reduction of system overflows

Social Evaluation Criteria

1. Visual / aesthetic impact on existing local community during construction
2. Long term visual / aesthetic impact on local community
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4. Long term impact of operations and maintenance activities on local community
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Technical/Operation Evaluation Criteria

1. Constructability
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4. Impact on health and safety of operations and maintenance staff
5. Impact on wastewater staffing qualifications and training requirements
6. Complexity of approval processes

Pumping Station Capital Needs Assessment and
Master Plan Class Environmental Assessment Study

PUBLIC INFORMATION CENTRE #1
March 11, 2010 Oakville

1) Do you have any comments on the Problem/Opportunity Statement?

2) Do you have any comments on the Alternative Solutions being considered?

3) With respect to the evaluation criteria:

- **Are there any criteria that should be added, removed or changed?**
- **By percentage, how would you weight the criteria categories (financial, natural environment, social and operational/technical)?**

4) Do you have any other comments on the Study?

Thank you for taking part. Please hand in your Comment Form at the registration table or mail, fax or e-mail it to:

Magda Bielawski, P. Eng.
Senior Project Manager
Wastewater Planning, Public Works
Regional Municipality of Halton
1151 Bronte Road
Oakville, Ontario L6M 3L1
Tel: 905-825-6000 ext.7426
Fax: 905-825-8822
E-mail: Magda.Bielawski@halton.ca

Municipal Class Environmental Assessment Study

Wastewater Pumping Stations Master Plan

PUBLIC INFORMATION CENTRE #2

June 15 & 16, 2010

R.V. Anderson Associates Limited
environment · infrastructure

Project Team

Halton Region

PROJECT MANAGER

Magda Bielawski

John Duong

Consultant

R.V. Anderson Associates Limited
environment • infrastructure

PRIME CONSULTANT

Reg Andres

COMMUNICATIONS / CONSULTATION

Joanna Kidd

Kidd Consulting

ENVIRONMENTAL SCIENCES

LGL

CULTURAL HERITAGE

ASI

Public Information Centre (PIC) #2

Purpose

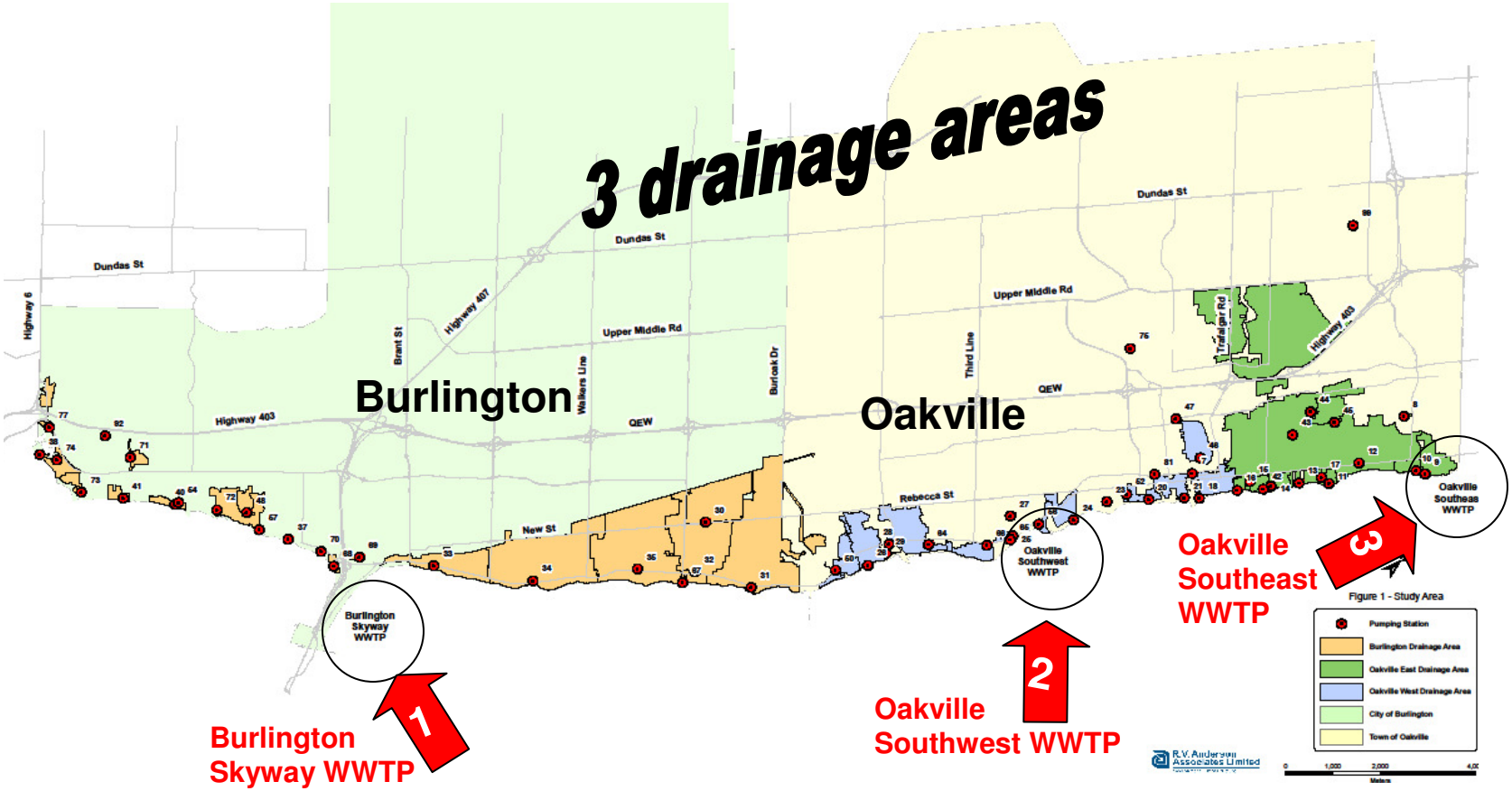
1. Present and get feed back on :
   - the evaluation approach used
   - recommended servicing concept

Background Information

1. The Region of Halton provides wastewater services to homes and businesses
2. The Region's wastewater collection system includes a series of pipes that transport sewage from houses and businesses to one of the Region's wastewater treatment plants where it is treated
3. Most sewage is transported by gravity from areas of higher elevation to areas of lower elevation
4. Sewage pumping stations are needed where the pipes are too deep for gravity flow.

Background Information

5. The Region has 59 of these pumping stations in the study area of this project.



Background Information

6. It is preferable to avoid pumping stations in the system – they consume energy and have higher and more complex operational requirements
7. In some cases, sewage pumping stations can be replaced by diverting the sewage they collect to deep trunk sewers
8. This eliminates the need to operate and maintain the station's electrical and mechanical systems and can reduce the potential for system overflows

Background Information

Three (3) types of pumping stations:

1. Wetwell / drywell station

13 in Study Area

2. Submersible station

21 in Study Area

3. Pre-fabricated station

23 in Study Area

Problem / Opportunity Statement

Halton Region owns and operates 59 sewage pumping stations in the 3 drainage areas serviced by the Burlington, Oakville SW and Oakville SE Wastewater Treatment Plants.

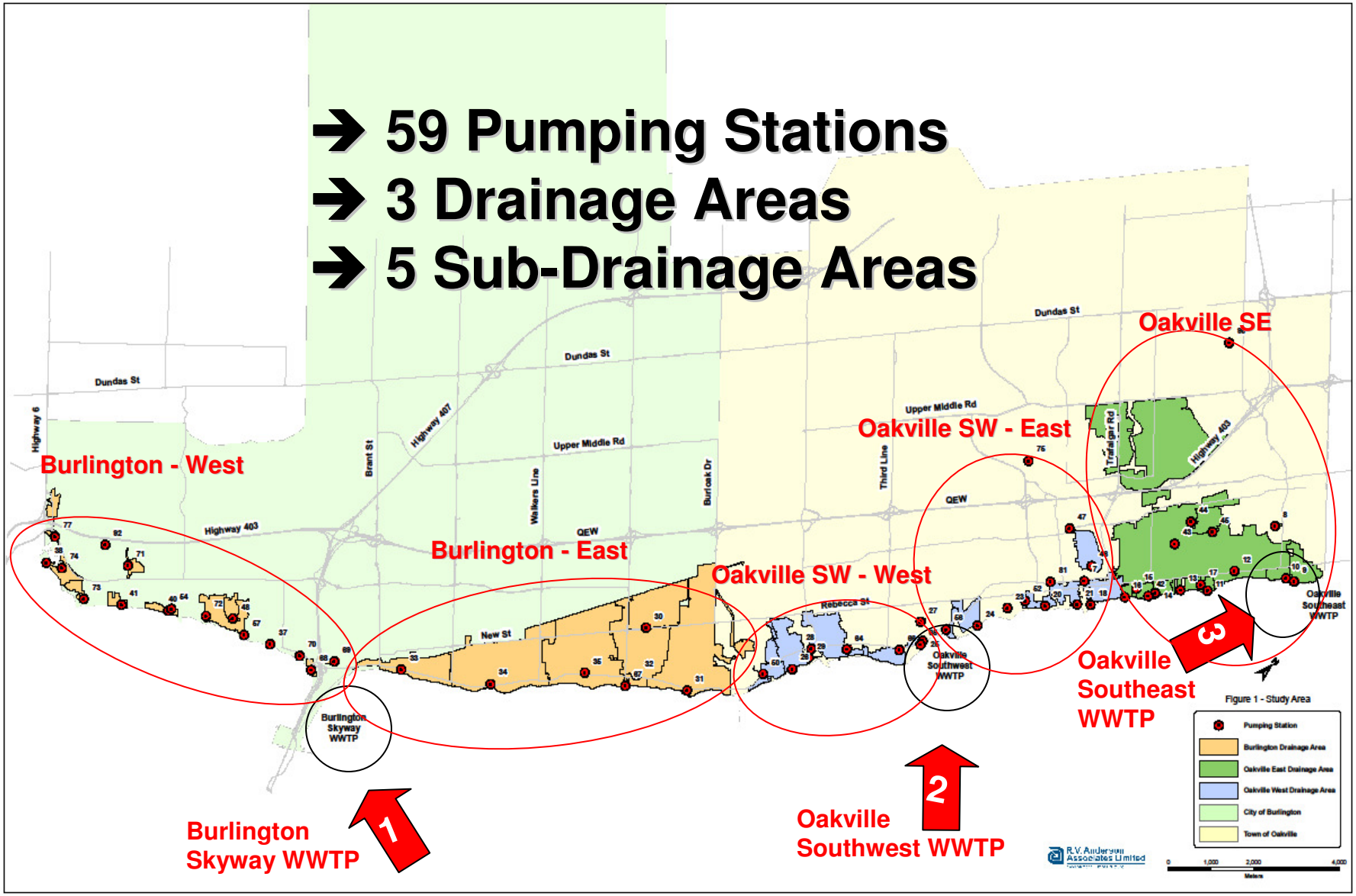
The Region is undertaking a Master Plan Class Environment Assessment (EA) to rationalize the sewage pumping system, i.e., to effectively and efficiently meet the needs of today and the future.

The Class EA will address and integrate three important issues:

1. normal aging and operational deterioration of the pumping stations;
2. capacity demands (current demands and future demands associated with Sustainable Halton and Places to Grow); and
3. operational efficiency.

STUDY AREA & SCOPE

➔ 59 Pumping Stations
➔ 3 Drainage Areas
➔ 5 Sub-Drainage Areas



Conceptual Solutions

Three concepts have been identified as potential alternatives.

Alternative 1 - Status Quo

- Maintain all existing pumping stations and assess each one independently
- Upgrade individual pumping stations as needed

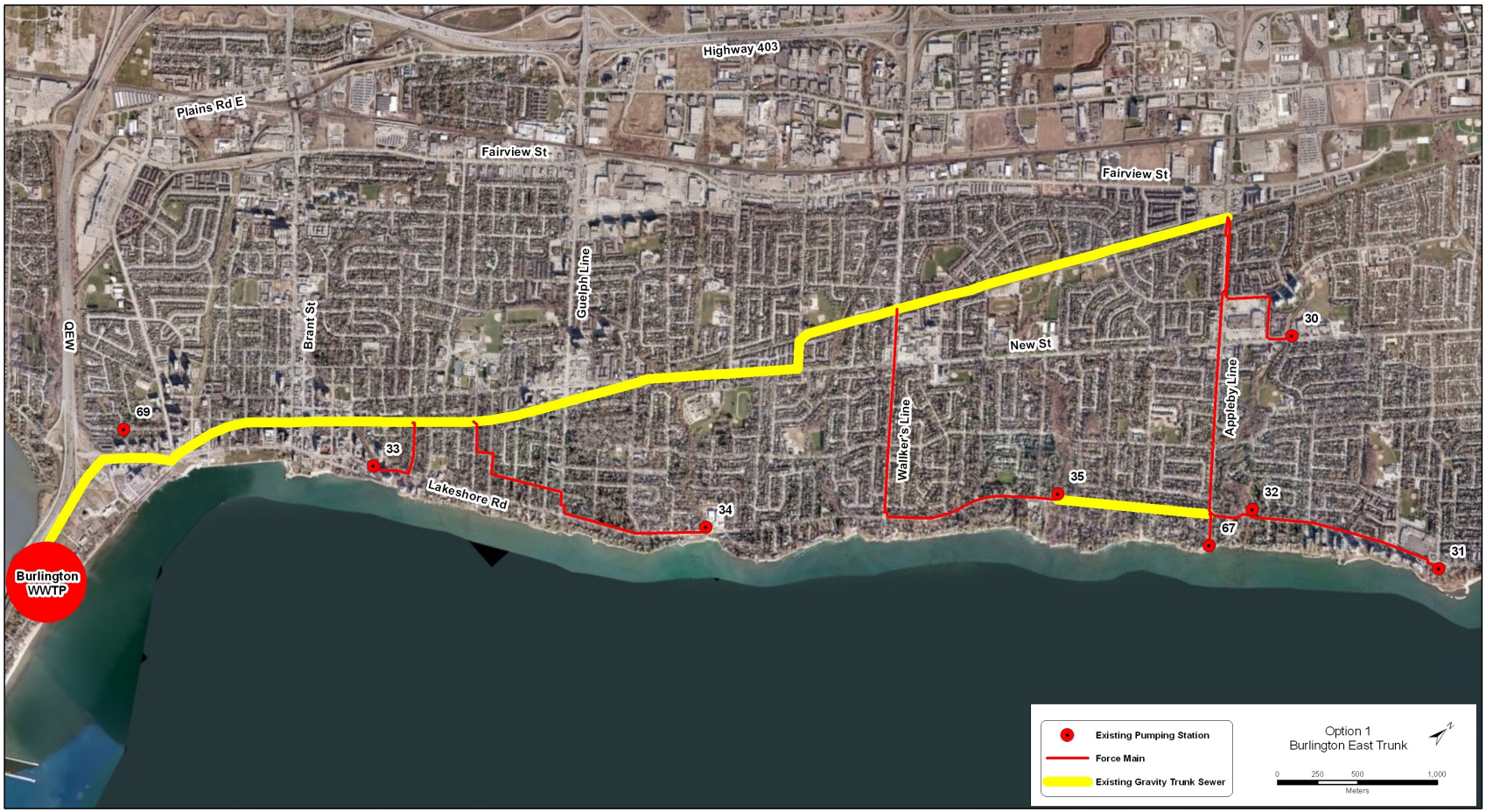
Alternative 2 – Partial Deep Gravity Sewer / Tunnel

- Eliminate certain groupings of pumping stations within a drainage area and replace them with deep gravity sewers
- Maintain existing pumping stations that are not ideal to be replaced based on decision-making criteria

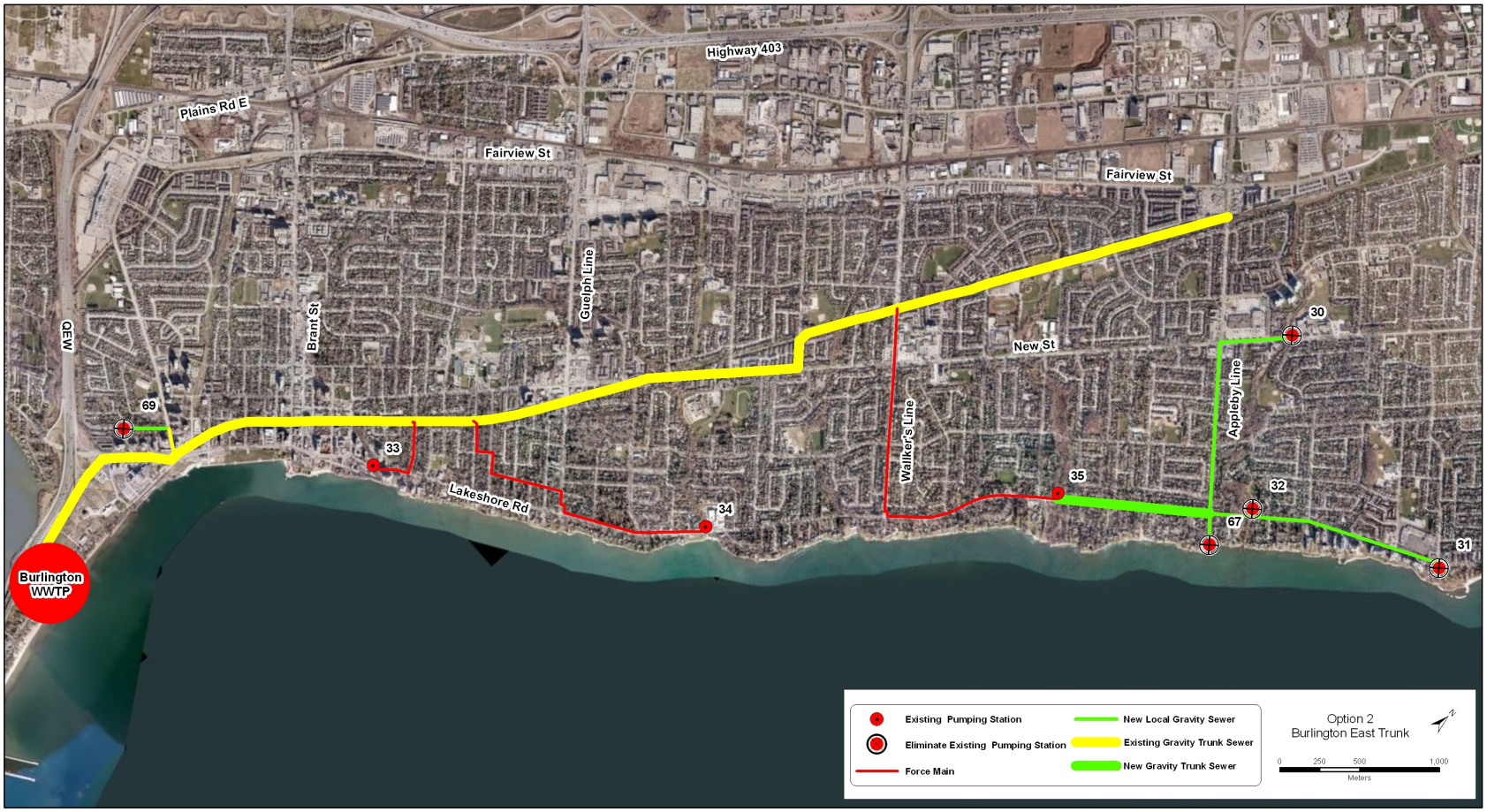
Alternative 3 – Deep Gravity Sewer / Tunnel

- Eliminate all existing pumping stations and replace with deep sewers and tunnels
- Connect all local flows from the pumping station sites to new deep sewers and tunnels

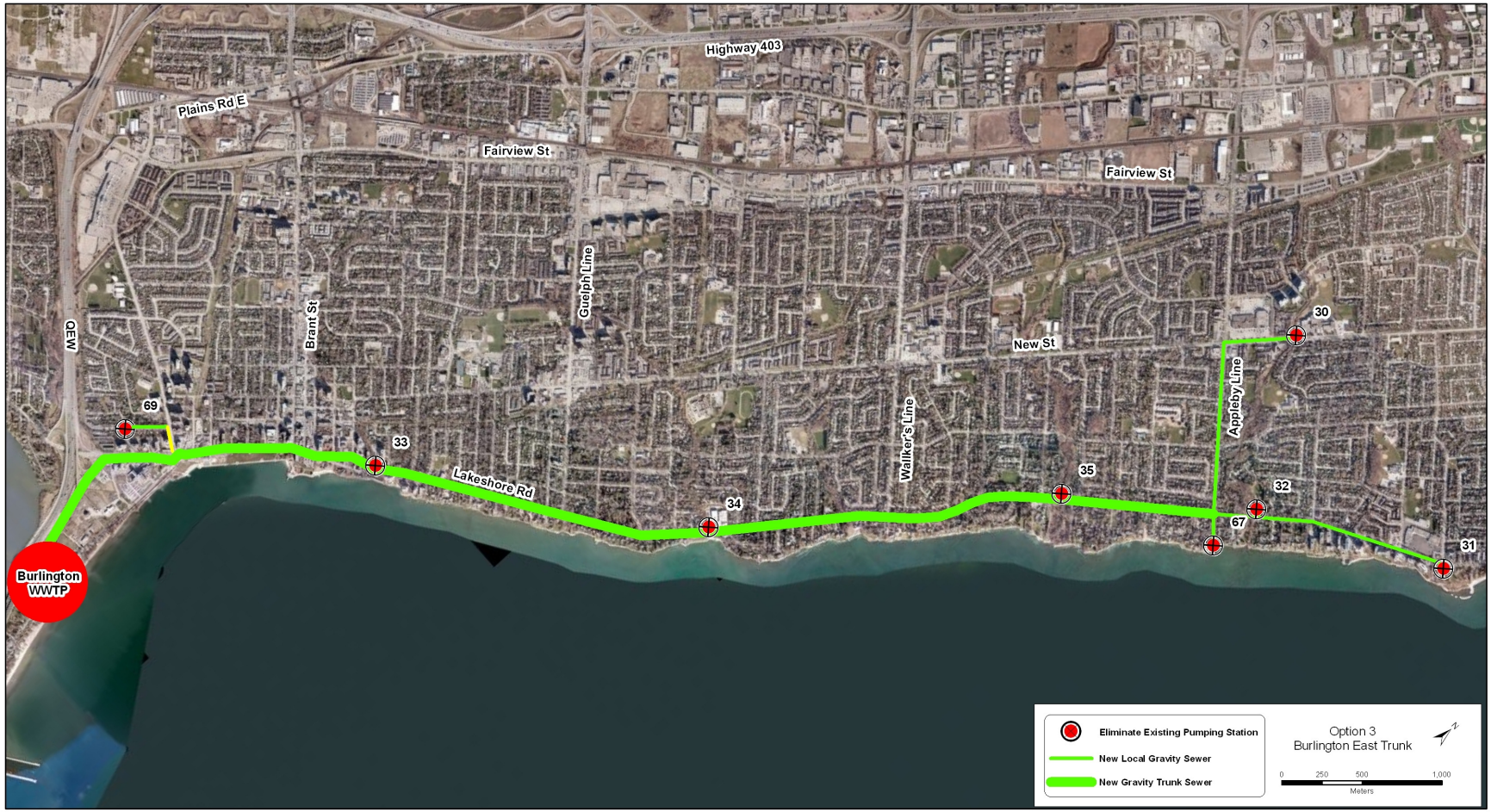
Option 1 – Burlington East



Option 2 – Burlington East



Option 3 – Burlington East



The Evaluation Approach

Categories of Evaluation Criteria

	Weighting
1. Financial criteria	40%
2. Natural Environmental criteria	25%
3. Social criteria	20%
4. Operational / Technical criteria	15%

Financial Evaluation Criteria

O&M Cost	10%
Financing Flexibility	15%
Total LCC Cost	75%
TOTAL	**100%**

Environmental Evaluation Criteria

Terrestrial environment impact during construction	5%
Terrestrial environment long term impact	20%
Aquatic environment impact during construction	15%
Aquatic environment long term impact	40%
Ability to meet regulatory constraints	20%
TOTAL	**100%**

Social Evaluation Criteria

Visual/Aesthetic Impact during construction	5%
Visual/Aesthetic Impact – Long Term	15%
Odour/Noise	20%
Impact on Adjacent Land (General/Land Use Planning)	10%
Archaeological	10%
Heritage	10%
Reduction of Risk of Basement Flooding	30%
TOTAL	**100%**

Technical/Operational Evaluation Criteria

Operations issues	30%
Ease of maintenance	30%
Constructability	30%
Approvals (design compliance)	10%
TOTAL	**100%**

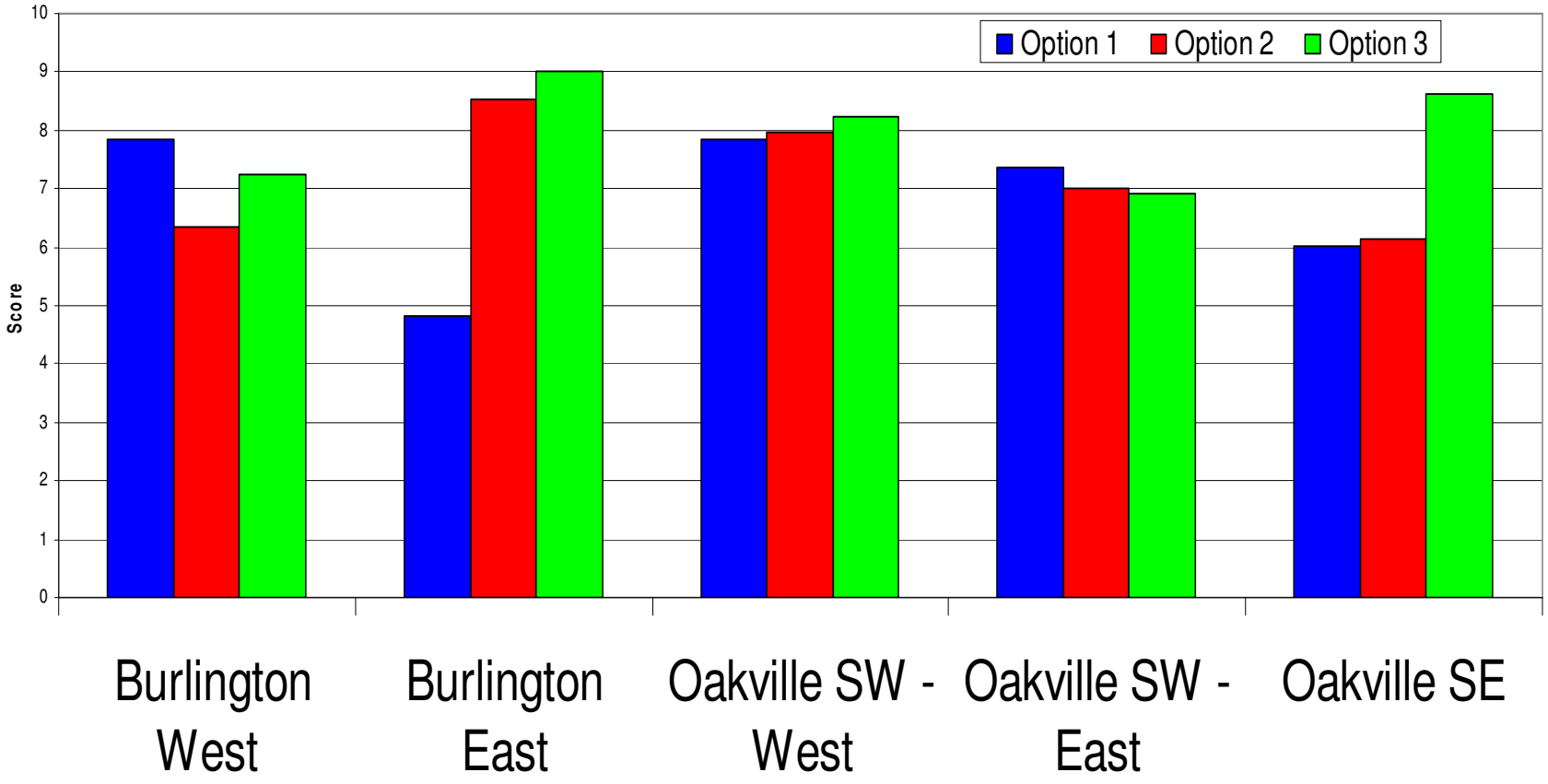
Evaluation Process

- Performed for each sub-drainage area separately
- Each option evaluated based on impacts
- Impacts scored by staff and study team in a consensus process
- Option best meeting each criterion = 10, others scored relative to the best
- Individual scores multiplied by weighting and then totalled

Summary of Scoring

DRAINAGE AREAS	Option 1	Option 2	Option 3
Burlington West	7.83	6.35	7.25
Burlington East	4.83	8.53	9.02
Oakville SW - West	7.84	7.97	8.22
Oakville SW - East	7.36	7.00	6.91
Oakville SE	6.03	6.13	8.61
COMBINED TOTALS	**33.89**	**35.98**	**40.01**

Summary of Scoring



Results of Scoring

DRAINAGE AREAS	Option 1	Option 2	Option 3
Burlington West	7.83	6.35	7.25
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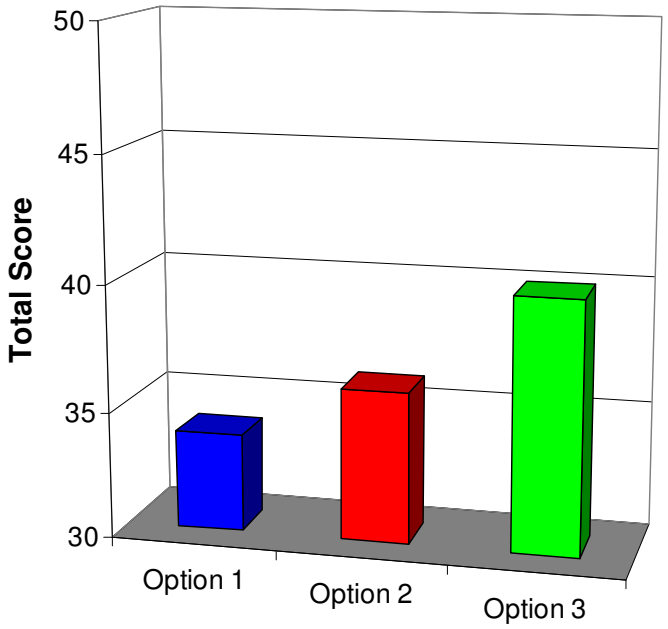
Combined Totals



Recommended Servicing Approach

- Preferred servicing strategy is to eliminate as many PS's as possible
- Replacement of all PS's may not be appropriate at this time for all sub-drainage areas (due to size of PS's, distance, etc.)
- Implementation needs to be staged to reflect:
  - Existing condition of PS
  - Current capacity issues
  - Current development pressures
  - Future capacity needs

Next Steps

- Summarize results of PIC #2
- Address issues raised at PIC #2
- Develop implementation plan
- Prepare Study Report
- Issue Notice of Completion
- 30 day review period

Municipal Class Environmental Assessment Study

Wastewater Pumping Stations Master Plan

Contact: Region of Halton - Magda Bielawski

Phone: (905) 825 – 6000 Ext. 7426

Magda.Bielawski@halton.ca

Thank you for attending this information centre!

R.V. Anderson Associates Limited
environment · infrastructure

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY

WASTEWATER PUMPING STATIONS MASTER PLAN

WELCOME

TO

PUBLIC INFORMATION CENTRE #2

June 15 & 16, 2010

6:30 pm – 9:00 pm

Halton REGION

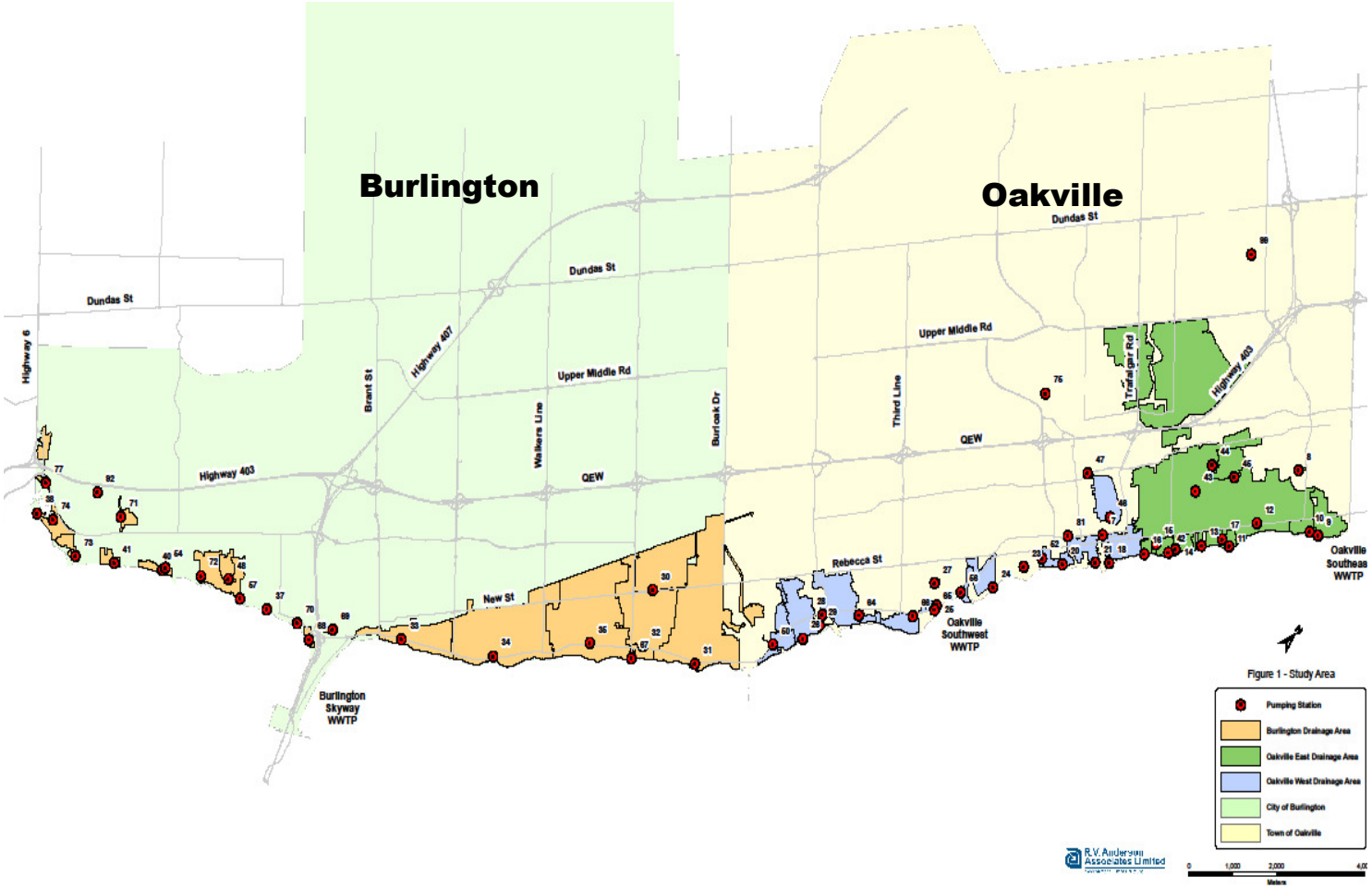
R.V. Anderson Associates Limited
engineering · environment · infrastructure

CANADA'S 50 BEST MANAGED COMPANIES

WHAT THIS PROJECT IS ABOUT

- This project relates to wastewater services in the southern portion of Burlington and Oakville and the pumping station facilities that are an integral component of this service
- The Region of Halton has 59 wastewater pumping stations that are part of the study
- The purpose of this Public Information Centre is to present and gather feedback on:
  - The evaluation approach used and
  - The recommended servicing concept

STUDY AREA


Burlington
Oakville
Dundas St
Dundas St
Dundas St
Highway 6
Brant St
Highway 407
Upper Middle Rd
Upper Middle Rd
Walkers Line
Burloak Dr
Third Line
Trafalgar Rd
Highway 403
QEW
QEW
Highway 403
New St
Rebecca St
Burlington Skyway WWTP
Oakville Southwest WWTP
Oakville Southeast WWTP
Figure 1 - Study Area
Pumping Station
Burlington Drainage Area
Oakville East Drainage Area
Oakville West Drainage Area
City of Burlington
Town of Oakville
R.V. Anderson Associates Limited
0
1,000
2,000
Meters

WHAT IS A PUMPING STATION?

- A pumping station sends sewage from a low elevation to a high elevation using pumps
  - If an area is lower than the elevation of the main trunk gravity sewer, it's sewage from the area will drain to a pumping station;
  - The pumping station will then pump sewage through a pressurized sewer (i.e. force main) to the trunk gravity sewer.

Wet well / Dry well station
(13 in Study Area)

Submersible station
(21 in Study Area)

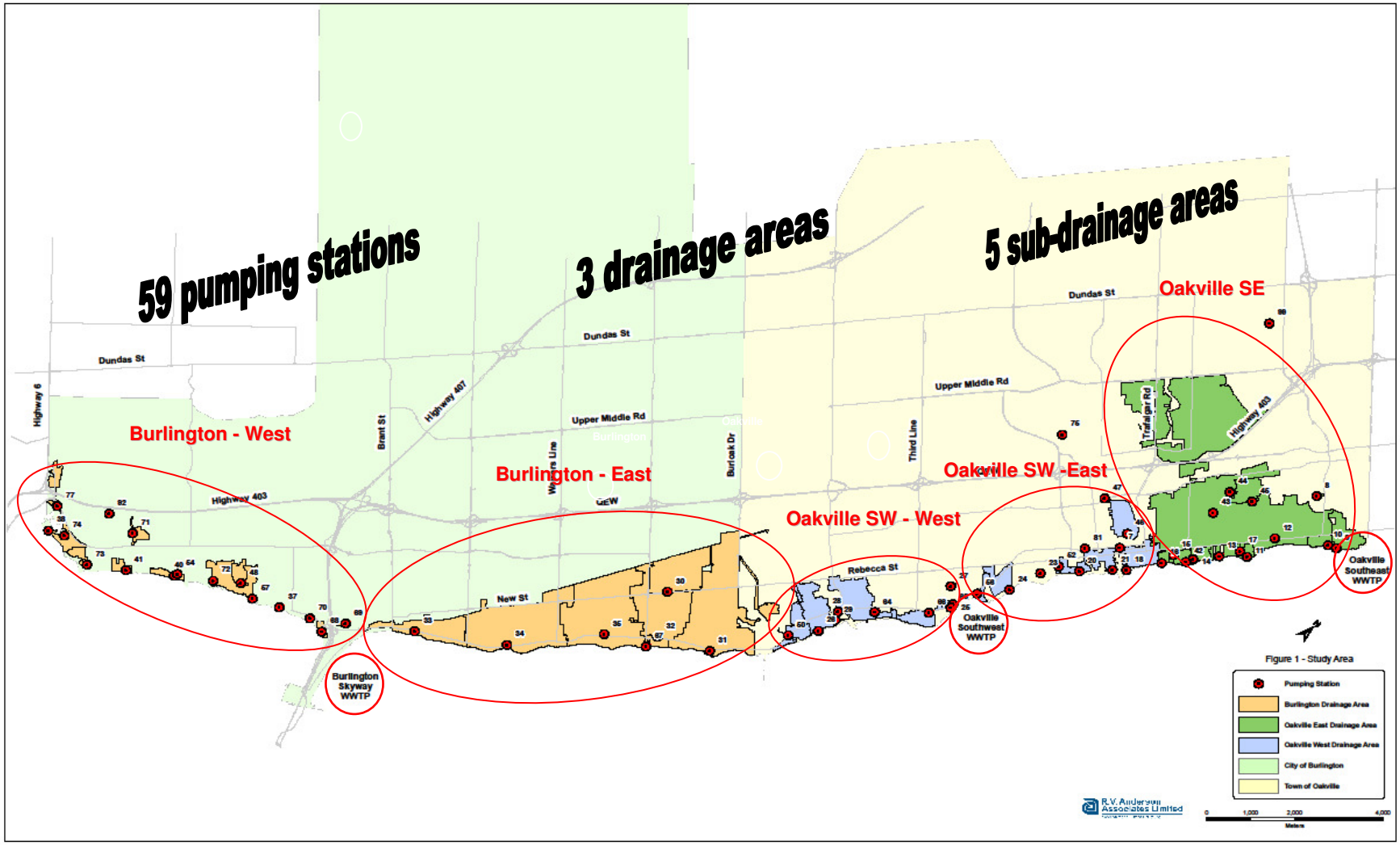
Pre-fabricated station
(23 in Study Area)

PROBLEM / OPPORTUNITY STATEMENT

- Halton Region owns and operates 59 pumping stations in three primary drainage areas. These areas are defined by the service area for each of Halton's three wastewater treatment plants.
- The Region is undertaking a Master Plan Class Environment Assessment (EA) to ensure the sewage pumping system effectively and efficiently meet the needs of today and the future.
- The Class EA will address and integrate three important issues:

    1. normal aging and operational wear and tear of the pumping stations;
    2. capacity demands *(current demands and future demands associated with Sustainable Halton and Places to Grow);* and
    3. operational efficiency.

ALTERNATIVE SOLUTIONS - APPROACH



CONCEPTUAL SOLUTIONS

Three concepts have been identified as potential alternatives.

Alternative 1 - Status Quo

- Maintain all existing pumping stations and assess each one independently
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Alternative 3 – Deep Gravity Sewer / Tunnel

- Eliminate all existing pumping stations and replace with deep sewers and tunnels
- Connect all local flows from the pumping station sites to new deep sewers and tunnels

EVALUATION CRITERIA CATEGORIES

Alternative solutions were assessed based on the following criteria categories and weightings:

	Relative Weighting
Financial……..	40%
Environmental …….	25%
Social ……..	20%
Technical / Operational ……	15%

EVALUATION SUB-CRITERIA

Criteria		Sub-Criteria	
Description	**Weighting**	**Description**	**Sub-Weighting**
Financial	**40%**	O&M Cost	10%
		Financing Flexibility	15%
		Total Lifecycle Cost	75%
		TOTAL	**100%**
Environmental	**25%**	Terrestrial environment impact during construction	5%
		Terrestrial environment long term impact	20%
		Aquatic environment impact during construction	15%
		Aquatic environment long term impact	40%
		Ability to meet regulatory constraints	20%
		TOTAL	**100%**
Social	**20%**	Visual/Aesthetic Impact during construction	5%
		Visual/Aesthetic Impact – Long Term	15%
		Odour/Noise	20%
		Impact on Adjacent Land (General/Land Use Planning)	10%
		Archaeological	10%
		Heritage	10%
		Reduction of Risk of Basement Flooding	30%
		TOTAL	**100%**
Operations/ Technical	**15%**	Operations issues	30%
		Ease of maintenance	30%
		Constructability	30%
		Approvals (design compliance)	10%
		TOTAL	**100%**

EVALUATION PROCESS AND SCORING SUMMARY

- For each sub-drainage area each option was evaluated in terms of impact
- Impacts were scored by staff and study team in a consensus process
- Option best meeting each criterion was given a score of 10, others were scored relative to the best
- Individual scores were multiplied by weighting and then totalled

DRAINAGE AREAS	Option 1	Option 2	Option 3
Burlington West	7.83	6.35	7.25
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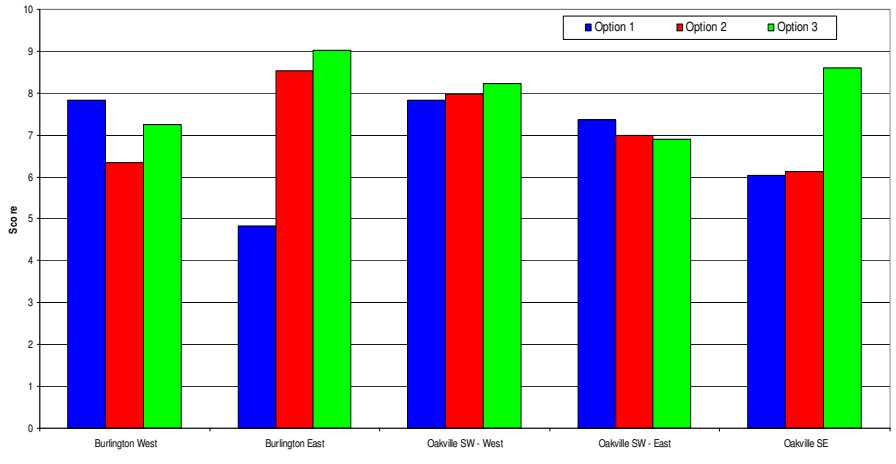
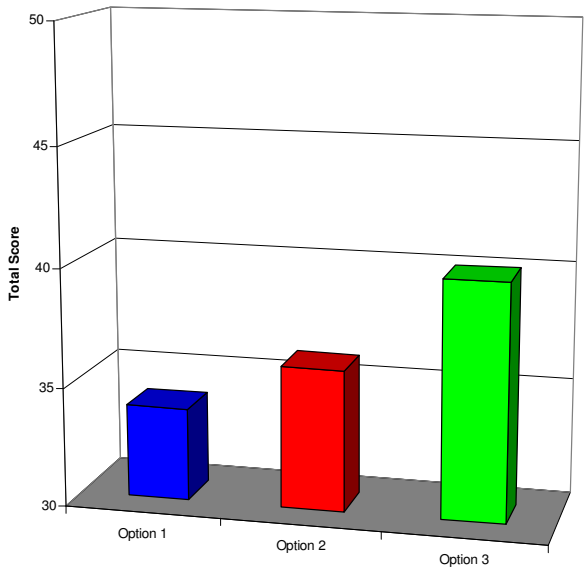


RESULTS OF SCORING

DRAINAGE AREAS	Option 1	Option 2	Option 3	
Burlington West	7.83	6.35	7.25	Slight preference of Option 1 over Option 3
Burlington East	4.83	8.53	9.02	Slight preference of Option 3 over Option 2
Oakville SW - West	7.84	7.97	8.22	No clear preference
Oakville SW - East	7.36	7.00	6.91	No clear preference
Oakville SE	6.03	6.13	8.61	Clear preference for Option 3

Overall preference for Option 3 when considering the study area as a whole



RECOMMENDED SERVING APPROACH

- Preferred servicing strategy is to eliminate as many PS's as possible
- Replacement of all PS's may not be appropriate at this time for all sub-drainage areas (due to size of PS's, distance, etc.)
- Implementation needs to be staged to reflect:
  - Existing condition of PS
  - Current capacity issues
  - Current development pressures
  - Future capacity needs

NEXT STEPS

- Summarize results of PIC #2
- Address issues raised at PIC #2
- Develop implementation plan
- Prepare Study Report
- Issue Notice of Completion
- 30 day review period

YOUR INPUT IS REQUESTED

- Comment Forms are available for you to provide information on:
  - Evaluation approach used
  - Recommended servicing approach
- Any other comments and information you would like to convey to the project team

Please contact us with any questions or concerns you may have:

- Magda Bielawski, P. Eng. – Region of Halton
  Project Manager
  905-825-6000 Ext. 7426
  Magda.Bielawski@halton.ca

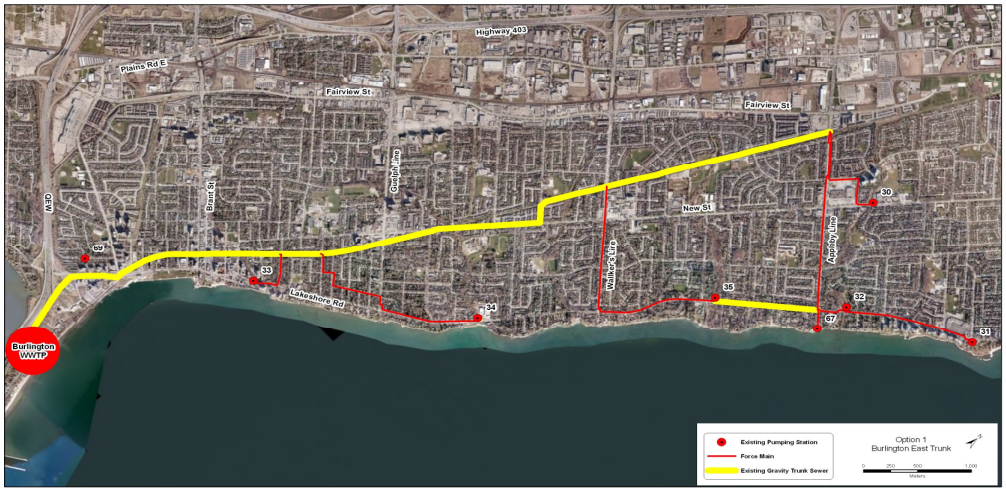
BURLINGTON – West Trunk

Alt. 1

Alt. 2

Alt. 3

BURLINGTON – East Trunk



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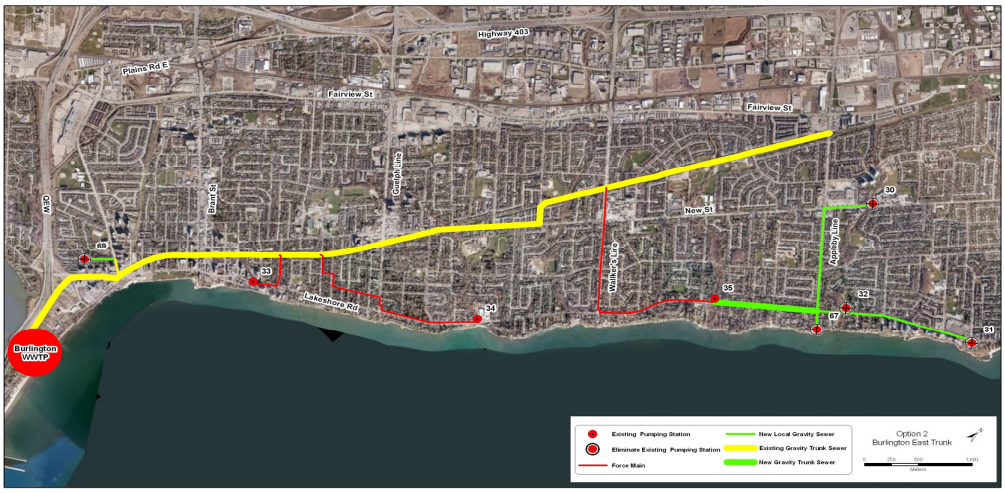

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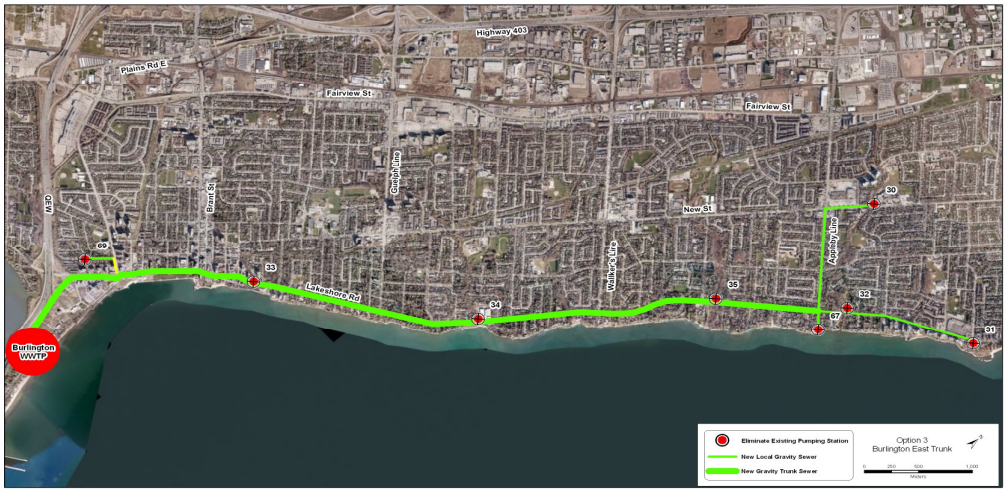


Alt. 3

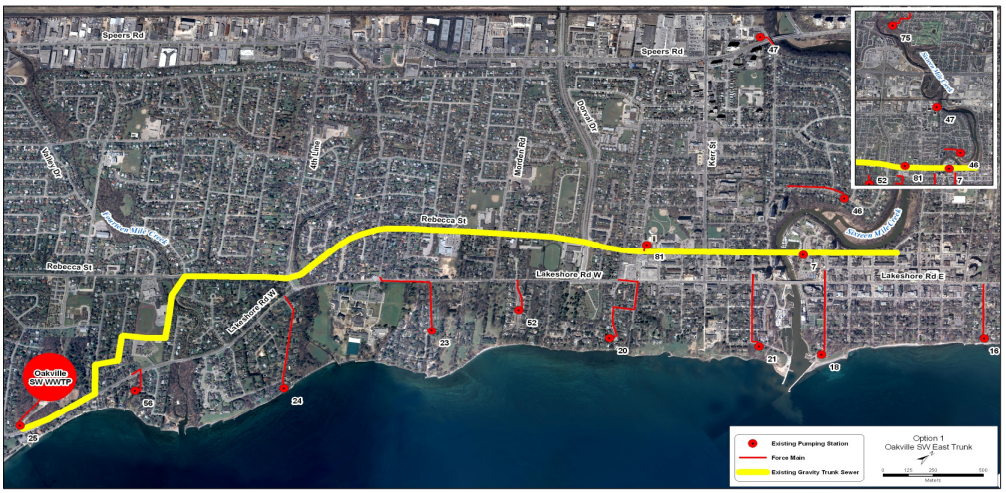
OAKVILLE SW – West Trunk

Alt. 1

Alt. 2

Alt. 3

OAKVILLE SW – East Trunk



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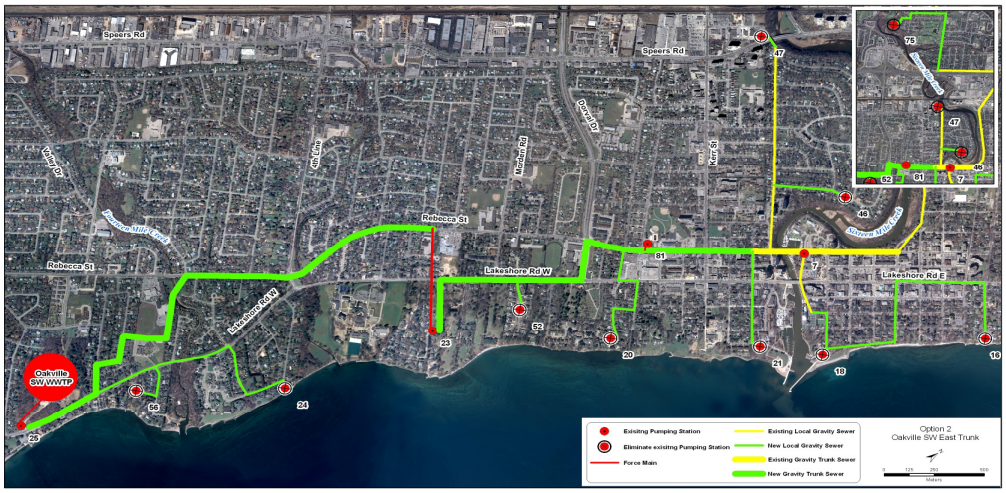

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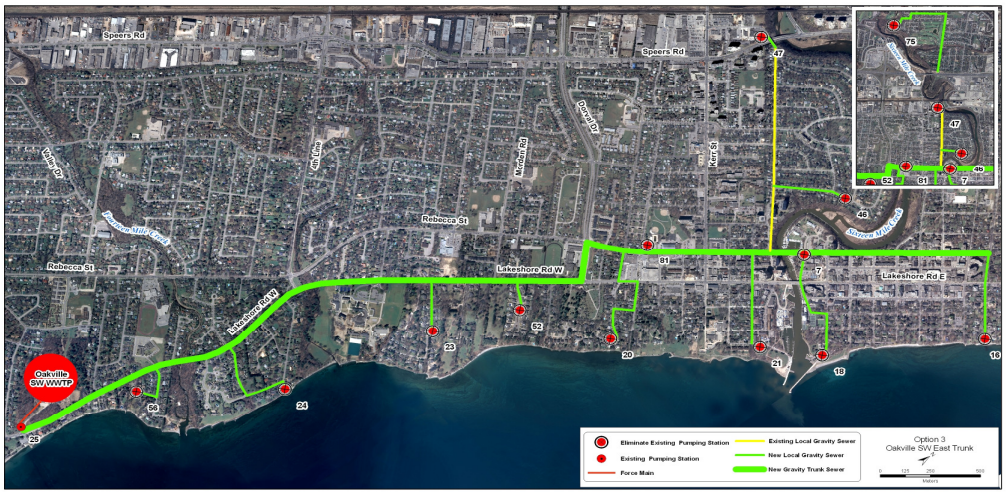
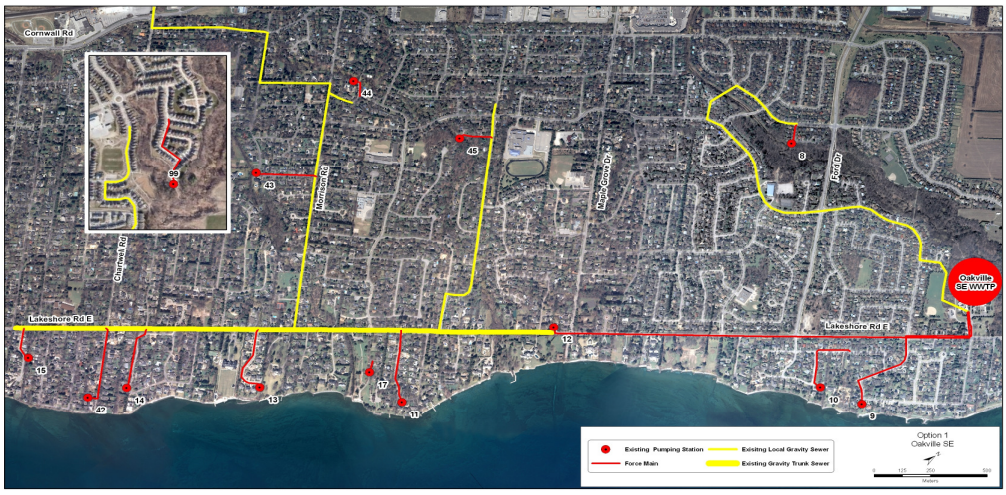


Alt. 3

OAKVILLE SE



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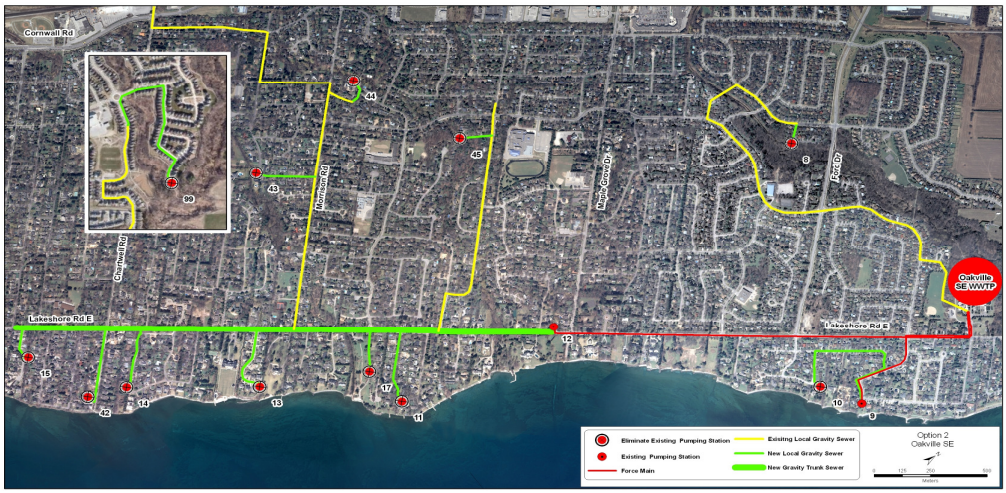

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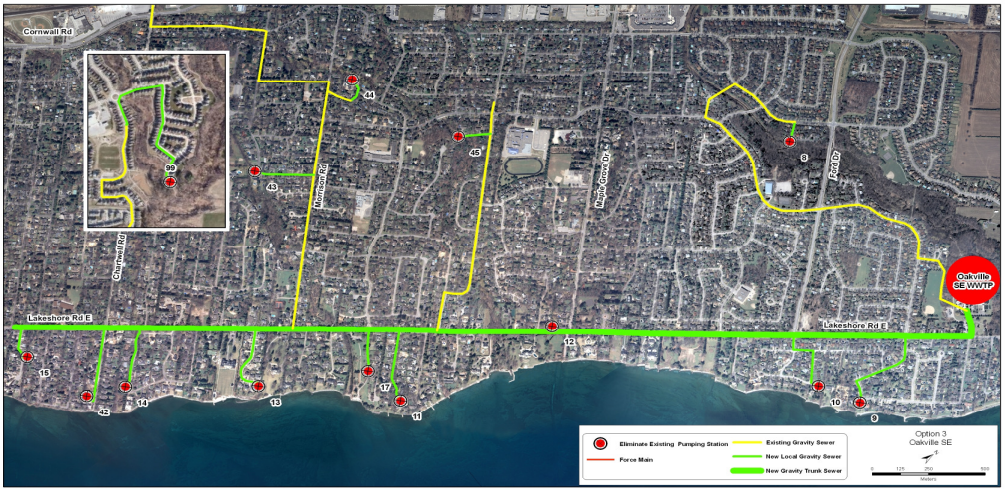

Alt. 3

Table 1 : Issues Raised in Pumping Station Master Plan Class EA Study

No.	Issue	Raised By	Date Raised	Response
EXISTING SYSTEM				
1	Would like to know how many of each type of pumping station exist now?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided in Meeting Notes from PIC#1. There are 23 pre-fabricated stations, 23 submersible stations and 13 large stations with wet wells and dry wells.
2	What is existing capacity of system?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. The capacity of all pumping stations was examined as part of the Capital Needs Assessment. Some pumping stations are operating below capacity, some at capacity and some are already above capacity.
3	The Riverside Pumping Station is already over capacity.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
4	Does all the sewage from Halton Region come down to the 3 waterfront WWTPs?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. No, the 3 waterfront plants treat the sewage from the southern portion of the Region. In other parts of the Region, sewage goes to one of the Region's 4 other WWTPs.
	Is the Region considering doing a similar study for pumping stations in the northern parts of the Region?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Yes, the Region is considering carrying out a similar study for the sewage pumping stations in the northern parts of the Region.
PLANNING PROCESS				
	What is the planning horizon for the study?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. The planning horizon for the study is 2031. Planning projections for growth to 2031 were provided for the Master Plan Class EA Study from Sustainable Halton.
	It is a shame to only think of growth to 2031, and not think longer term.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	Please post all study information on line.	Participant	Mar. 9, 2010 (PIC #1)	The Region's website at http://www.halton.ca/cms/one.aspx?portalId=8310&pageId=34673 contains all notices, displays, presentations, handouts and meeting notes from PICs.
	How does this study relate to the Sustainable Halton Water and Wastewater process?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. Sustainable Halton is broader in scope – it includes the entire Region and all aspects of water and wastewater servicing. This Master Plan Class EA Study only considers pumping stations in the southern parts of Burlington and Oakville. The results of the Master Plan Class EA Study will be

				incorporated into the Sustainable Halton Water and Wastewater Servicing Master Plan Study.
	Will there be another meeting after this one?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. No. We will be developing a Study Report and posting a Notice of Completion, which will be advertised and sent to everyone on the project mailing list.
	Will there be a review of the Master Plan in 5 years?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. The Pumping Station Master Plan will become a part of the bigger Sustainable Halton Water and Wastewater Servicing Master Plan that will be reviewed every 5 years. If things change dramatically, the Pumping Station Master Plan portion may need to be revisited, or a portion of it for a specific area. There will be flexibility in the future.
STAGING				
	What factors will determine the staging?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. Priority may be put on those pumping stations that need immediate work or expansion. Pumping stations that are relatively new may take longer to be addressed.
	Concern about length of time that implementation will take.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	How many pumping stations are due to be replaced right now?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. We know this from the Condition Assessment work carried out, but I don't have the information at hand. It will be considered in developing the Implementation Plan and will be part of the final report on the project.
	Will staging of construction be addressed in the Implementation Plan?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Yes, the staging of the projects will be addressed but not the staging of financing.
	When was the most recent of the 59 pumping stations put in?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. The newest pumping station was put in fairly recently. Portions of the pumping stations are routinely upgraded and replaced as necessary. When developing the Implementation Plan, an objective will be to maximize the value of each pumping station (i.e., not remove it until it is at the end of its life). Some might not be replaced for 40 years.
EVALUATION CRITERIA				
	The weightings within the 4 categories are as important as the weightings of the categories themselves.	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.

	Should consider the opportunity costs (e.g., when tunnels are bored, is there other infrastructure that could coincidentally be addressed and or upgraded?)	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.
	The weighting for reduction of basement flooding should be increased.	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.
	The Technical category seems over weighted – this is not rocket science.	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.
	Should increase weighting of the Financial category to 40% and reduce Social to 10%.	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.
	In considering the alternatives, should consider which options lend themselves to expansion beyond 2031 (i.e., to 2061 or 2091).	Participant	Mar. 9, 2010 (PIC #1)	Comment considered in weighting criteria.
	Should be higher weighting for Capital + O&M Lifecycle Cost, Reduction of System Overflows and Reduction in Basement Flooding.	Participant	Mar. 11, 2010 (PIC#1)	Comment considered in weighting criteria.
	Capital costs should be weighted lower as they could be debentured.	Participant	Mar. 11, 2010 (PIC#1)	Comment considered in weighting criteria.
	Technical criteria appear to not be objectives and could be considered within the other three categories.	Participant	Mar. 11, 2010 (PIC#1)	Comment considered in weighting criteria.
	Technical criteria could be weighted lower than other categories.	Participant	Mar. 11, 2010 (PIC#1)	Comment considered in weighting criteria.
	Suggest looking at criteria categories by short term and long term: • For short term, suggest Financial 25%, Natural Environment 25%, Social 25% and Operational 25%. • For long term (60 to 100 years) suggest Financial 30%, Natural Environment 20%, Social 20% and Operational 30%.	Participant	Mar. 11, 2010 (PIC#1)	Comment considered in weighting criteria.
	Did you consider the amount of inflow and infiltration (I&I) from groundwater	Participant	June 15/16, 2010	

	that might get into the pipes?		(PIC#2)	Answer provided at PIC#2. No, we didn't consider it in the evaluation. I&I would not be increased with a deep truck sewer and may in fact be better. I&I is worst in old systems and is better with newer pipes.
ALTERNATIVE SOLUTIONS				
	Prefer Option 3, then Option 2.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	Are there any positives to having 59 pumping stations?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#2. In some cases there are positives to having pumping stations (i.e. particular areas where a gravity sewer is not feasible), but overall there are no positives to keeping all 59 stations.
	What have other lakeside regions done? Best practices must have been determined somewhere.	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. We are familiar with the systems used in many municipalities and regions.
	In west Burlington the soils are quite varied and tunneling may not be feasible. Needs some homework.	Participant	Mar. 11, 2010 (PIC#1)	Comment noted.
	The alternative solutions broadly appear appropriate. I expect that specifics (e.g., which pumping stations will be replaced and timing) will need review.	Participant	Mar. 11, 2010 (PIC#1)	Comment noted.
	Could areas east of Sixteen Mile Creek be re-routed to the Oakville Southwest Wastewater Treatment Plant?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. This is possible, but it would require a significant lift at the plant.
	Are there any pumping stations that can't be replaced by deep trunk sewers?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. Technically, all pumping stations can be replaced with deep trunk sewers. However, this may not be practical or financially reasonable in all cases.
	The Overton Place pumping station PS #75 requires high costly maintenance which will increase over time. Overflows into Sixteen Mile Creek can also become more costly due to environmental penalties increasing. The best solution does seem to be a gravity feed tunnel which will solve many long term problems (such as maintenance, cost, and impact on communities).	Participant	Mar. 11, 2010 (PIC#1)	Comment noted.

	What are the impacts on the WWTP for the 3 conceptual options?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Option 3 (replacement of pumping stations with a deep trunk sewer) will reduce the risk of overflows to Lake Ontario. The WWTPs have a greater surcharge capacity and the possibility of overflows will occur at only 3 places, not 59.
	How deep would the trunk sewer be at the treatment plant?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. About 10 metres below grade. Existing pumps at the Waste Water Treatment Plant (WWTP) would be used to pump the sewage up to the plant.
POTENTIAL IMPACTS				
	Teal Park (Cardinal Ave. PS) is no place for the extent of work envisioned.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	What are the current social impacts of a typical pumping station?	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	Social impacts were a major factor in community opposition to relocating the Riverside Pumping Station.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	What are the expected depths of new trunk sewers?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. Approximately 5 to 10 metres below grade, depending on the topography.
COST AND FINANCING				
	What is the order of magnitude cost for the alternative solutions?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. From tens of million dollars for option 1 to 100s of million dollars for option 3. Costs would be staged over a period of about 20 years.
	The Region needs to look at the costs of intensification.	Participant	Mar. 9, 2010 (PIC #1)	Comment noted.
	Who will pay for the costs of growth?	Participant	Mar. 9, 2010 (PIC #1)	Answer provided at PIC#1. The growth component will be assigned to Development Charges.
	What is the average cost of operating a pumping station?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided in Meeting Notes from PIC#1. The costs are different for each type of pumping station. The average operating cost for most of the Region's pumping stations is approximately $20,000 a year. The operating costs for the two largest facilities (the West 18 pumping station that pumps to the Oakville SW plant and the Lakeshore Road pumping station that pumps to Oakville SE Plant) are significantly larger and are not reflected in the above average cost.

	If large scale tunnelling is a good long term solution, then collaboration with municipal, provincial and federal governments is important for maximising use for all and sharing costs.	Participant	Mar. 11, 2010 (PIC#1)	Comment noted.
	Would all options be financed the same way?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. Development will pay for the growth portion of the costs through development charges.
	Do you know what the growth portion is?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. Yes, we know the current flows and have received estimates of future flows from Sustainable Halton.
	Will the development/non-development split of cost be shown at June's PIC?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. At PIC#2 we will have some information on this. It will be defined in more detail in the Final Report.
	If a pumping station has reached the end of its life and has to be replaced, how would you assess the proportion of costs for development and non-development?	Participant	Mar. 11, 2010 (PIC#1)	Answer provided at PIC#1. If there are no additional flows expected, then no portion of the costs would be attributed to development. If there are additional flows expected, the costs will be assigned to development on a proportional basis.
	It will take some time to replace the pumping stations (i.e., they will not be replaced all at once). Does this mean the cost will be stretched over a period of time?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Yes, it may take a couple of decades to make the switch to the new servicing concept.
	What will the payback period be for the deep truck sewer?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. We don't know yet, and there are a number of unknowns, including what will happen to energy costs in the future. We need to think in terms of total lifecycle and consider both financial and non-financial factors (such as social and environmental impact).
	How did you forecast costs?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. We used today's dollars and applied a 1.8% inflation rate.
	Most of the 59 pumping stations appear to be in areas that will not see significant growth in the future. Does this mean that the cost will be borne by water rates?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Yes. In areas where growth does take place through infill and intensification, developers will carry part of the cost through development charges.
	Are any of the pumping stations on land that could be sold?	Participant	June 15/16, 2010 (PIC#2)	Answer provided at PIC#2. Most pumping stations are on fairly small parcels of land. There are one or two on bigger parcels. Although we didn't consider it in the evaluation, there may be additional benefits from selling off lands or turning them over to parkland.

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MEETING MINUTES

Region of Halton SPS Master Plan EA
Meeting with Conservation Halton Re: Proposed Burlington East Works

DATE AND TIME: September 20, 2011 @ 2:00 p.m.

PLACE: Conservation Halton (CH) Offices

PROJECT NO.: 081707

PRESENT: Magda Bielawski (Halton Region)
Jennifer Lawrence (CH)
Amy Mayes (CH)
Reg Andres (RVA)
Nick Larson (RVA)

The purpose of the meeting was to discuss the proposed works in the Burlington East section of the Master Plan.

DISCUSSION: **ACTION BY:**

1. **Overview**

R. Andres provided an updated on the project:

- Master Plan preferred servicing strategy is to eliminate as many sewage pumping stations as is technically and financially viable by providing gravity conveyance.

- Projects within the Burlington East area were identified as a high priority in the Master Plan. This area includes WWPS #35 and #32 which are nearing their useful life and require immediate attention as well as WWPS #31 which FM requires replacement.

- The preliminary recommended servicing strategy for Burlington East area presented in the Master Plan involves:
  - elimination of 5 WWPS (# 30, 31, 32, 34, 67)
  - construction of deep trunk sewer within the right of way on Lakeshore (by tunnelling)
  - upgrading the WWPS #35 at the existing site to accommodate increased flows

- The Region will be fulfilling the EA requirements for the projects identified in Burlington East area so that these projects can move into the design phase when the Master Plan is filed.

DISCUSSION: **ACTION BY:**

2. **Conservation Halton (CH) provided the following comments:**

- CH noted that WWPS#35 is within the Regional Storm flood plain and subject to high depths and velocities of flooding. As a result, CH has reservations about expanding the pumping station at this location and would need to understand in more detail the rationale for choosing this station for upgrade versus the other WWPS within the Study Area. CH requested that the EA include a detailed decision-making matrix that considers the natural hazards and natural environmental features at each location as part of the process for determining the preferred alternative. CH staff acknowledge that the EA process is about balancing all environmental needs including natural, social and economic.

3. - There is CH policy stating that if a facility is located within the flood plain, the size by which this facility can be expanded depends on the depth of flooding and water velocity during the Regional Storm event.

- Adequate reporting is required to document the decision making process for selecting the preferred alternative for Burlington East area as well as to validate any works proposed within the CH regulated limits

Next Steps

- RVA/Region will fulfill the Schedule B Class EA process in order to select the preferred alternative for implementing the servicing strategy identified through the Master Plan process for Burlington East area.

- Draft Master Plan report and specific section documenting Schedule B Class EA undertakings for Burlington East implementation and other supporting information will be submitted to CH for comments — RVA/ Region

- 2-3 weeks after submitting the draft report a meeting will be held with CH, RVA and the Region to discuss

Information exchange:

- RVA will obtain the hydraulic models of the water courses from CH through data licensing agreement — RVA/CH

- RVA will request data related to the depths and velocities of flooding at WWPS location from CH through data licensing agreement for those WWPS that were considered as an alternative for upgrade

Minutes prepared by: N. Larson and M. Bielawski

Distribution: M. Bielawski, N. Larson, R. Andres, P. Takaoka, J. Lawrence, A. Mayes

PLEASE ADVISE THE WRITER OF ANY ERRORS OR OMISSIONS WITHIN 1 WEEK OF RECEIPT OF THESE MINUTES

PROTECTING THE NATURAL ENVIRONMENT FROM LAKE TO ESCARPMENT

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February 1, 2012

Ms Magda Bielawski
Region of Halton
1151 Bronte Road
Oakville, ON
L6M 3L1

Dear Ms Bielawski:

Re: Burlington East Schedule B EA and Sewage Pumping Station Master Plan Region of Halton CH File: MPR 534

Staff have reviewed the following documents pertaining to the project:

- Draft Burlington East Schedule B EA Evaluation Matrix;
- Regional Municipality of Halton *Sewage Pumping Station Master Plan Municipal Class EA Phase 2 Report*, prepared by R.V. Anderson Associates Limited, dated June 2011; and,
- LGL Memorandum from Allison Featherstone to Nick Larson (R.V. Anderson) dated May 6, 2011, regarding Halton Pumping Station Master Plan Field Investigation Summary

Burlington East Schedule B EA

The expansion of Pumping Station #31 (Alternative 6 in the Evaluation Matrix) is the Region's preferred alternative. As discussed at our November 28, 2011 meeting, the property is likely a significant stopover site for migrating birds given its location directly adjacent to Lake Ontario and the naturalized habitat present. As such, any vegetation removals should be minimized, and mitigation measures should include naturalization with dense cover for migrants, such as cedar hedgerows.

Based on the best available information, the existing pumping station is outside of Conservation Halton's regulated area associated with the Lake Ontario shoreline hazards. Additional detail may be required at detailed design to confirm the exact location of the hazard limits however, it would appear that there is sufficient room to expand the existing building to the west, as discussed at the November 28, 2011 meeting. Staff note that the shoreline fronting the park was constructed in stages over the last 2-7 years. Parts of the shoreline have been left in a natural state to preserve the exposed shale. As a result, the shoreline still experiences ongoing erosion and a 10 metre reduction (from 30 metres to 20 metres) in the development setback may not be justified. This can be discussed further at detailed design. Conservation Halton staff recommend that the Region consult with the City of Burlington Parks & Recreation Department as it is our understanding that they are working on a Master Plan for Burloak Park.

The following comments relate to the Evaluation Matrix:

- Staff appreciate that the regulated hazard of flooding has been acknowledged and considered within the alternative evaluation, and that consideration was given to purchasing or changing the utilization of other lands that may be available outside of the regulated hazard lands. The removal of several

pumping stations from flooding and erosion hazards is a significant benefit to both the Region and the natural environment.

- The finished grade of PS#34 is shown as being above the predicted regional storm flood elevation. whereas CH mapping indicates that this structure would be inundated under a regional storm event.

- Staff note that Alternatives 2, 3, and 4 are all ranked in the matrix as having an equally low flood risk, however: for Alternative 2, the Regional Flood does not exceed the finished grade of the Pumping Station; for Alternative 3, the Regional Flood Elevation exceeds the finished grade; and, for Alternative 5, there will be 0.3 m of freeboard between the finished grade and Regional Storm Flood elevation. Are all or portions of all three buildings within the floodplain? Is this low risk indicated to account for the static and dynamic forces associated with regional storm flood conditions? Please provide additional discussion on what constituted low vs. high risk. Also please ensure that the additional construction costs to dry flood proof any proposed building within the floodplain has been considered.

- Although the impact of the pumping station on erosion and bank stability was considered, it appeared the focus of the consideration was how construction of the enlarged facility would impact erosion potential. It is not clear from the chart whether the erosive potential of the watercourse was considered with respect to the placement of the new or enlarged pumping station. The PPS would direct all uses associated with the disposal, treatment or storage of hazardous substances to be located outside of both the floodplain and the 100 year erosion hazard limit. Consideration should be given to the potential creek bank erosion over a 100 year time frame.

Municipal Class EA Phase 2 Report

General Comments

- Manicured portions of properties with pumping stations to be eliminated (particularly those within natural areas and corridors) should be naturalized. Given their location in close proximity to Lake Ontario, these properties could provide significant stopover habitat for migratory birds, butterflies and bats. Conservation Halton staff would be pleased to provide additional assistance and direction at the EA and/or detailed design stage.
- Potential impacts on species at risk should be re-evaluated closer to the time of construction, as the provincial list of species at risk is updated approximately twice per year.
- The potential impacts of projects on overhanging trees and other vegetation should be re-evaluated closer to the time of construction.
- At detailed design, additional information will be requested such as:

    - Depths of installation of sewers
    - Depth of tunnelling under watercourses/method of construction under watercourses
    - Geological conditions at installation depth
    - Hydrogeolgical conditions at installation depth
    - Dewatering requirements
    - Impacts to watercourses during and post construction

- Conservation Halton is undergoing a revision to their current shoreline hazard mapping layer. As a result, the current Approximate Regulated Limit (ARL) mapping is not accurate and often represents an underestimation of the limit of the regulated area. Conservation Halton should be consulted when any works are proposed in proximity to the shoreline. Any works within Conservation Halton's regulated area (riverine and shoreline) will require a Permit at detailed design.

Burlington West

- PS#48 - appears to be located within a regulated valley feature, but outside of the floodplain. Depending on the placement of the pumping station, both geotechnical and geomorphologic evaluation of the stability of the valley may be required to support upgrading this pumping station.
- PS#57- Upgrades should provide adequate tree protection for the large red oak behind the existing building.
- Gravity sewer to PS#57- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- PS#74- Please provide details as to the proposed upgrades to this station. It is situated adjacent to a highly constrained area (ESA, ANSI, woodland, major valley, etc.).

Burlington East

- Gravity sewer to PS#30- A tree protection and replacement plan should be prepared along Appleby Line to address potential impacts of the sewer on overhanging trees.
- Gravity sewer between PS#34 and PS#31- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees. Tree impacts could have a significant impact on the character of this road from both an environmental and social perspective.
- PS#32- The invasive Japanese Knotweed noted at this location should be eliminated at the time the pumping station is decommissioned. If any impacts on the Butternut are anticipated, the Region should contact MNR to ascertain any permitting requirements under the *Endangered Species Act.*
- PS#35- Staff are of the understanding that this station is now proposed for elimination. If any impacts on the Butternut are anticipated, the Region should contact MNR to ascertain any permitting requirements under the *Endangered Species Act.*
- PS#69 and associated gravity sewer- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.

Oakville Southeast

- PS#8- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees. The invasive Buckthorn should be removed as part of a naturalization plan for this property.
- Gravity sewer between PS# 9 and PS#10- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- Gravity sewer between PS#11-15, PS#17 and PS#42- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees. Tree impacts could have a significant impact on the character of this road from both an environmental and social perspective.
- PS#12- Given the observation of watercress in the channel flowing across this property, additional groundwater investigations may be warranted.
- PS#13 and #15- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.
- PS#17- The invasive Norway Maple should be removed.
- PS#43- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees, particularly the 30 cm dbh White Oak.
- PS#44- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.

- PS#45- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.
- PS#99 and associated gravity sewer- Decommissioning of the pumping station and installation of the gravity sewer will require attention to the protection of the natural heritage system and sensitive restoration with appropriate techniques and species. Staff concur with the recommendation in the Field Investigation Summary to tunnel this section.

Oakville Southwest West

- Gravity sewer to PS#26- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- PS#29 - The Regional Storm flood elevation at PS#29 is approximately 81 m, placing the entire property within the regulated floodplain. Additionally, as the property rises rapidly near the property boundary, the majority of the property is subject to flood depths over 1 metre under anticipated regional storm conditions. As discussed during previous meetings, it is staff's preference that pumping stations be relocated out of hazard areas if at all possible in order to remove the risk and liability to the Region. If relocation is not feasible, expansion or reconstruction of an existing facility will require a Permit from Conservation Halton and it must be demonstrated that the facility was designed to be functional under a Regional Storm event and protected from the erosion hazard. Further, geotechnical evaluation would be required to place the pumping station on the slope where flood depths would be lower. At this point, staff do not have sufficient information available to determine whether an expansion at this location is feasible from a regulatory perspective
- PS#50- This pumping station is located within an area determined by the Ontario Municipal Board to provide Significant Wildlife Habitat for migrating birds. As such, it is recommended that decommissioning activities be undertaken outside of the migration season (spring and fall), and that site restoration focus on providing suitable cover and feeding habitat for migrants.
- Gravity sewer from PS#50 to PS#29- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging native trees.
- Gravity sewer from PS#64 to PS#25- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- PS#65- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.

Oakville Southwest East

- PS#7 – staff could not confirm the exact location of this pumping station and therefore cannot confirm whether or not expansion is feasible.
- PS#18 and associated gravity sewer- A tree protection and replacement plan should be prepared to address potential impacts of the sewer, and decommissioning of the pumping station, on overhanging trees.
- PS#46 and associated gravity sewer- A tree protection and replacement plan should be prepared to address potential impacts of the sewer, and decommissioning of the pumping station, on overhanging trees.

Staff noted the following discrepancies between Tables 7.1 and 7.3 and their respective descriptive Figures 4.1 and 4.3. As the Figures appeared to provide a greater elimination of pumping stations staff have only reviewed the feasibility of the alternatives, as illustrated in Figures 4.1 and 4.3. Specifically, staff noted that:

- Figure 4.1 Alternative 2 would require the expansion as opposed to elimination of PS#48, and the elimination as opposed to upgrade of PS#54.

- Figure 4.3 shows that PS#64 is to be eliminated while Table 7.3 recommends the upgrade of PS#64.

Section 7.4 – As the information presented within the Municipal Class EA Phase 2 Report is not sufficiently detailed to allow staff to confirm that permits may be issued for the expansion of all of the pumping stations identified in the report, staff request that each individual optimization plan proceed as a Schedule B Class EA, as opposed to a Schedule A+ Class EA.

Staff request that the Phase 2 report include a table of future commitments to include:

- Risk evaluation to determine whether the proposed consolidation option lowers the wastewater system's exposure to flooding and erosion risks. As the provincial policy statement does not allow for the creation of new pumping stations within natural hazards, staff will be unable to support any optimization that increases the systems' risk exposure to natural hazards.

We trust the above is of assistance. If you require additional information, please contact the undersigned at extension 266.

Yours truly,

Jennifer Lawrence, MCIP, RPP
Manager, Environmental Planning

cc: Mr. Reg Andres, RVA, email
Mr. Nick Larson, RVA, email

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PROTECTING THE NATURAL ENVIRONMENT FROM LAKE TO ESCARPMENT

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July 10, 2012

Ms Magda Bielawski
Region of Halton
1151 Bronte Road
Oakville, ON
L6M 3L1

Dear Ms Bielawski:

Re: Sewage Pumping Station Master Plan
Final Draft
Region of Halton
CH File: MPR 534

This letter replaces the previous letter to the Region dated July 5, 2012.

Staff of Conservation Halton have reviewed the following pages as circulated by the Region:

- Pages 1-1 to 1-4, 1-6, 1-7, 6-4, 7-1 to 7-3, 7-6, Figures 7.1-7.5

It is our understanding that only the above pages contain changes from the previous draft that was circulated to Conservation Halton dated June 2011.

Based on our review we note that many of the comments in our February 1, 2012 letter remain applicable as they apply to the detailed design stage of projects identified in the Master Plan. For ease of reference, those comments that remain valid are repeated below. Staff have provided additional clarification as necessary:

General Comments

- Manicured portions of properties with pumping stations to be eliminated (particularly those within natural areas and corridors) should be naturalized. Given their location in close proximity to Lake Ontario, these properties could provide significant stopover habitat for migratory birds, butterflies and bats. Conservation Halton staff would be pleased to provide additional assistance and direction at the EA and/or detailed design stage.
- Potential impacts on species at risk should be re-evaluated closer to the time of construction, as the provincial list of species at risk is updated approximately twice per year.
- The potential impacts of projects on overhanging trees and other vegetation should be re-evaluated closer to the time of construction.
- At detailed design, additional information will be requested such as:
    - Depths of installation of sewers
    - Depth of tunnelling under watercourses/method of construction under watercourses

- Geological conditions at installation depth
- Hydrogeolgical conditions at installation depth
- Dewatering requirements
- Impacts to watercourses during and post construction

- Conservation Halton is undergoing a revision to the current shoreline hazard mapping layer. As a result, the current Approximate Regulated Limit (ARL) mapping is not accurate and often represents an underestimation of the limit of the regulated area. Conservation Halton should be consulted when any works are proposed in proximity to the shoreline. Any works within Conservation Halton's regulated area (riverine and shoreline) will require a Permit at detailed design. This includes decommissioning as well as expansion.

Burlington West

- PS#48 – Table 7.1 indicates that this pumping station will be decommissioned. This building appears to be located within a regulated valley feature. A Permit will be required for the decommissioning.
- PS#54 – Table 7.1 indicates that this pumping station will be reconstructed as a Schedule B project. The existing pumping station is within a valley feature associated with the West Aldershot watercourses. Any reconstruction or expansion will require a Permit from Conservation Halton.
- PS#57- No changes are proposed to PS#57 at this time. Any future works should provide adequate tree protection for the large red oak behind the existing building.
- PS#74- No changes are proposed to PS#74 at this time. The existing pumping station is situated adjacent to a highly constrained area (ESA, ANSI, woodland, major valley, etc.) and any future works will need to be sensitive to these features/functions.

Burlington East

- Gravity sewer to PS#30- A tree protection and replacement plan should be prepared along Appleby Line to address potential impacts of the sewer on overhanging trees.
- Gravity sewer between PS#35 and PS#31- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees. Tree impacts could have a significant impact on the character of this road from both an environmental and social perspective.
- PS#32- The invasive Japanese Knotweed noted at this location should be eliminated at the time the pumping station is decommissioned, or sooner if possible. If any impacts on the Butternut trees are anticipated as part of the decommissioning, the Region should contact MNR to ascertain any permit requirements under the *Endangered Species Act.*
- PS#35- This station is proposed for elimination. If any impacts on the Butternut trees are anticipated, the Region should contact MNR to ascertain any permitting requirements under the *Endangered Species Act.*
- PS#69 and associated gravity sewer- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.

Oakville Southeast

- PS#8- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees. The invasive Buckthorn should be removed as part of a naturalization plan for this property.
- Gravity sewer between PS# 9 and PS#10- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.

- Gravity sewer between PS#11-15, PS#17 and PS#42- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees. Tree impacts could have a significant impact on the character of this road from both an environmental and social perspective.
- PS#12- Given the observation of watercress in the channel flowing across this property, additional groundwater investigations may be warranted.
- PS#13, #15, #44 and #45- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.
- PS#17- The invasive Norway Maple should be removed as part of a naturalization plan for this property after decommissioning.
- PS#43- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees, particularly the 30 cm dbh White Oak.
- PS#99 and associated gravity sewer- Decommissioning of the pumping station and installation of the gravity sewer will require attention to the protection of the natural heritage system and sensitive restoration with appropriate techniques and species. Staff concur with the recommendation in the Field Investigation Summary to tunnel this section.

Oakville Southwest West

- Gravity sewer to PS#26- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- PS#29 – Staff note that the table is not suggesting any changes to PS#29 at this time. The Regional Storm flood elevation at PS#29 is approximately 81 m, placing the entire property within the regulated floodplain. Additionally, as the property rises rapidly near the property boundary, the majority of the property is subject to flood depths over 1 metre under anticipated regional storm conditions. As discussed during previous meetings, it is staff's preference that pumping stations be relocated out of hazard areas if at all possible in order to remove the risk and liability to the Region. If relocation is not feasible, expansion or reconstruction of an existing facility will require a Permit from Conservation Halton and it must be demonstrated that the facility is designed to be functional under a Regional Storm event and protected from the erosion hazard. Further, geotechnical evaluation would be required to place the pumping station on the slope where flood depths would be lower. At this point, staff do not have sufficient information available to determine whether an expansion at this location is feasible from a regulatory perspective
- PS#50- This pumping station is located within an area determined by the Ontario Municipal Board to provide Significant Wildlife Habitat for migrating birds. As such, it is recommended that decommissioning activities be undertaken outside of the migration season (spring and fall), and that site restoration focus on providing suitable cover and feeding habitat for migrants.
- Gravity sewer from PS#50 to PS#29- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging native trees.
- Gravity sewer from PS#64 to PS#25- A tree protection and replacement plan should be prepared to address potential impacts of the sewer on overhanging trees.
- PS#65- A tree protection and replacement plan should be prepared to address potential impacts of pumping station decommissioning on overhanging trees.

Oakville Southwest East

- PS#7 – this pumping station appears to be either within the Sixteen Mile Creek valley or in close proximity. Staff note that Figure 7.4 indicates that this station will be upgraded. Staff would require additional details as to the specific location of PS#7 prior to determining whether a Permit would be required from Conservation Halton for any upgrades.

- PS#18, #46 and associated gravity sewer- A tree protection and replacement plan should be prepared to address potential impacts of the sewer, and decommissioning of the pumping station, on overhanging trees.

Section 7.4 – As the information presented within the Municipal Class EA Phase 2 Report is not sufficiently detailed to allow staff to confirm that permits may be issued for the expansion of all of the pumping stations identified in the report, staff request that each individual optimization plan proceed as a Schedule B Class EA, as opposed to a Schedule A+ Class EA.

Staff request that the Phase 2 report include a table of future commitments to include:

- Risk evaluation to determine whether the proposed consolidation option lowers the wastewater system's exposure to flooding and erosion risks.

We trust the above is of assistance. If you require additional information, please contact the undersigned at extension 266.

Yours truly,

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cc: Mr. Reg Andres, RVA, email
Mr. Nick Larson, RVA, email

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