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

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Public Information Centre (PIC) #2

Purpose

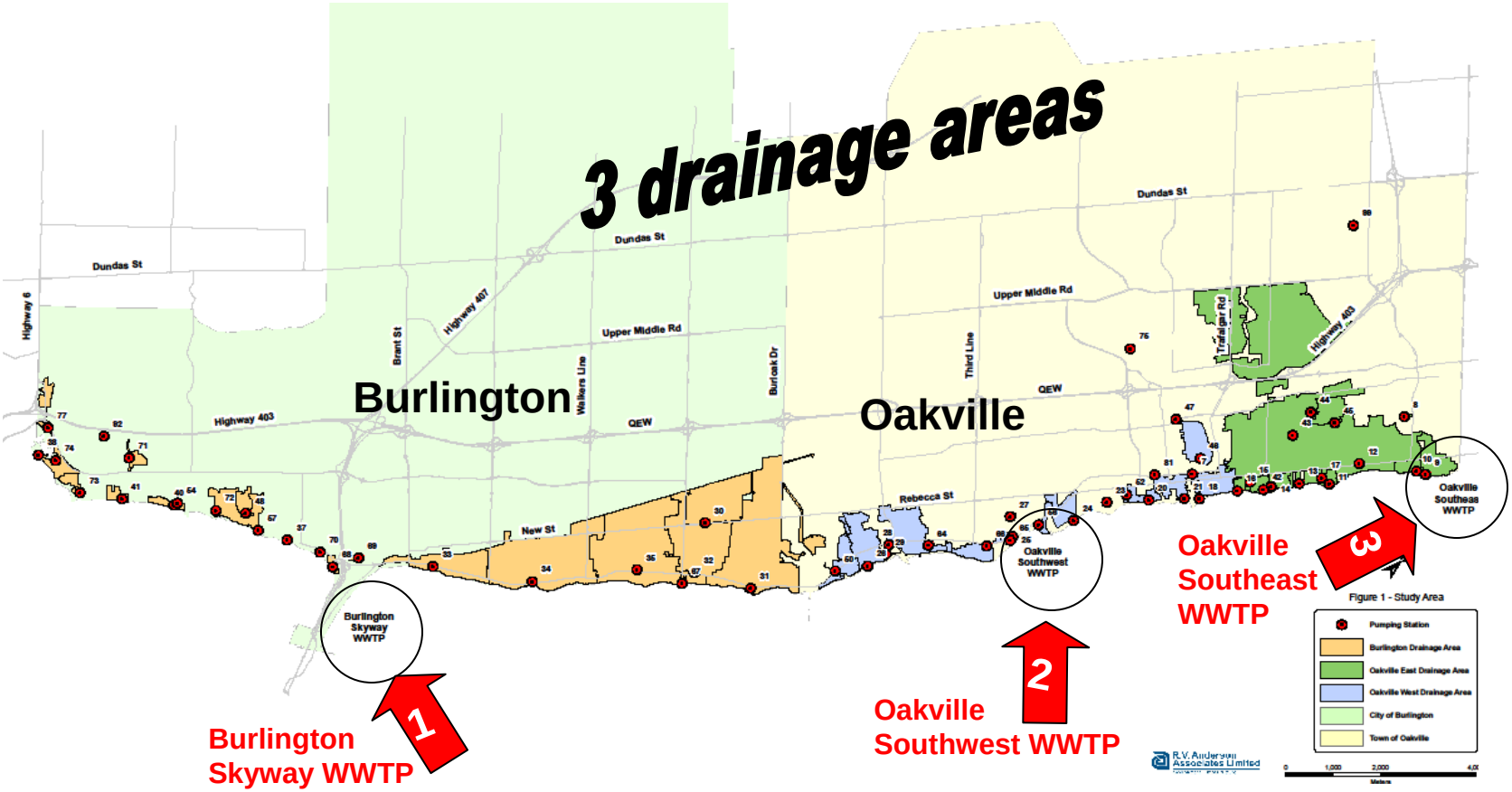
1. Present and get feed back on :
    - the evaluation approach used
    - recommended servicing concept

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.

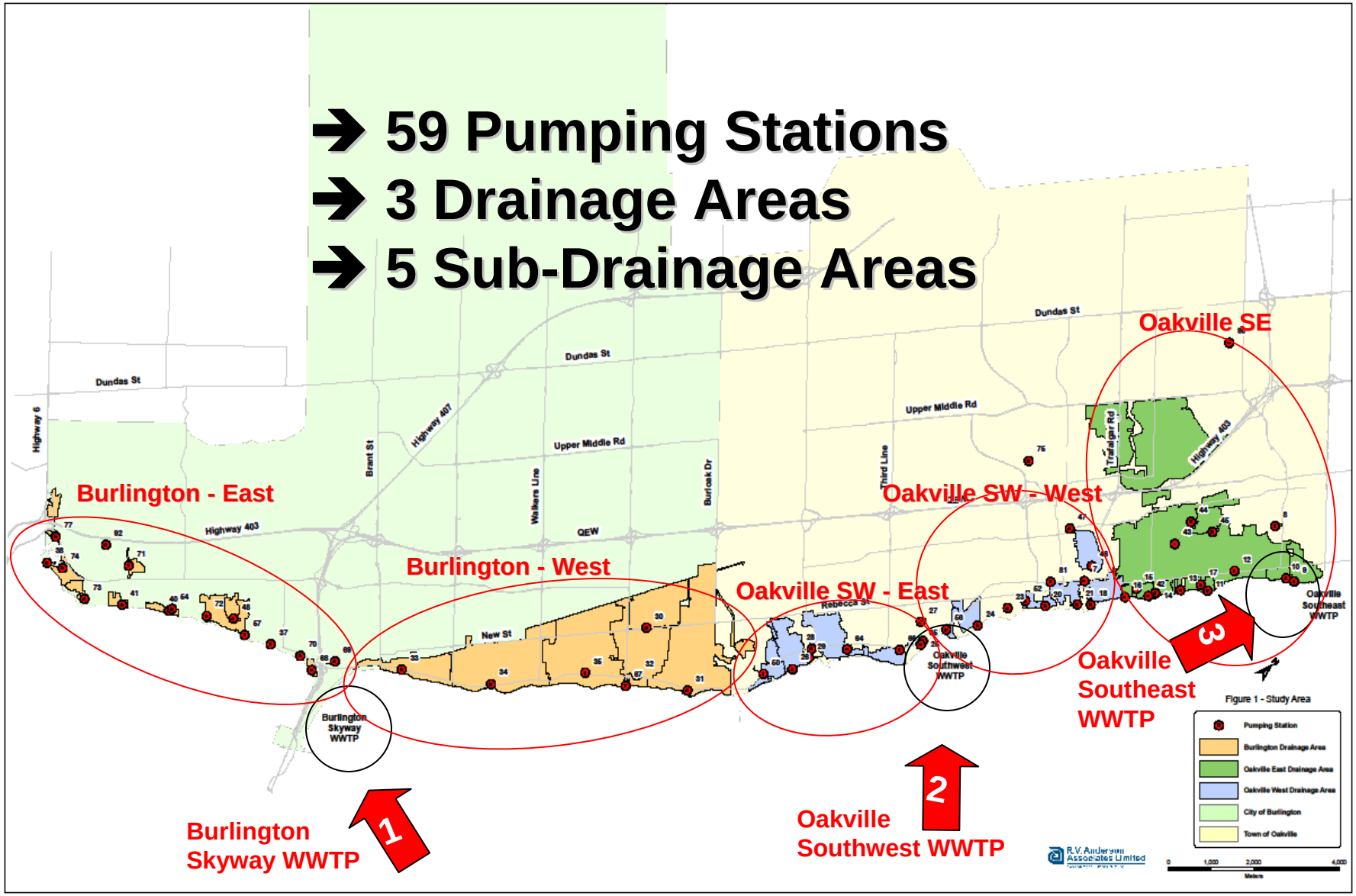
The Region is undertaking a Master Plan Class Environment Assessment (EA) to rationalize the sewage pumping system, i.e., to effectively and efficiently meet the needs of today and the future.

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

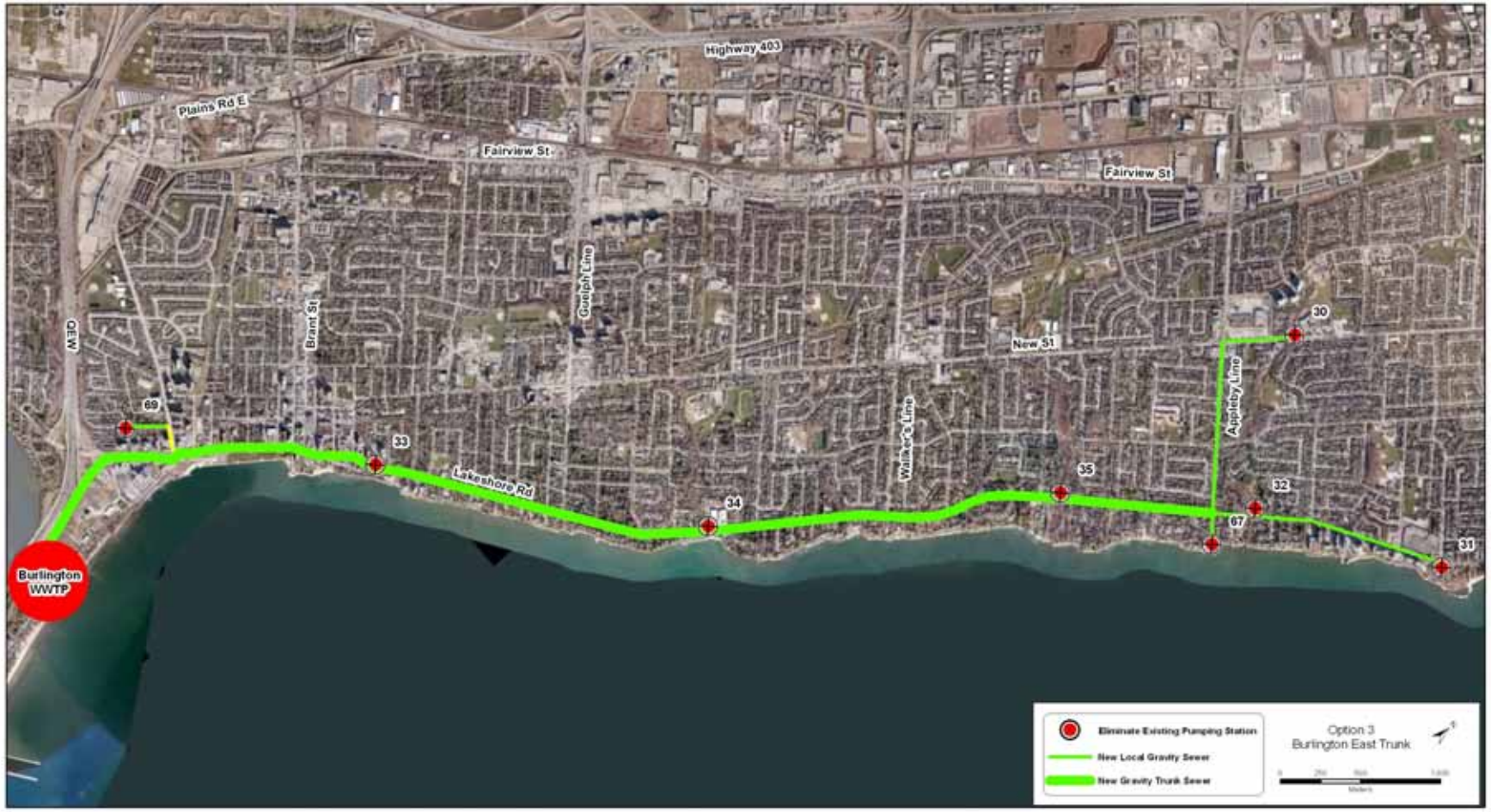
Alternative 3 – Deep Gravity Sewer / Tunnel

- 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%**

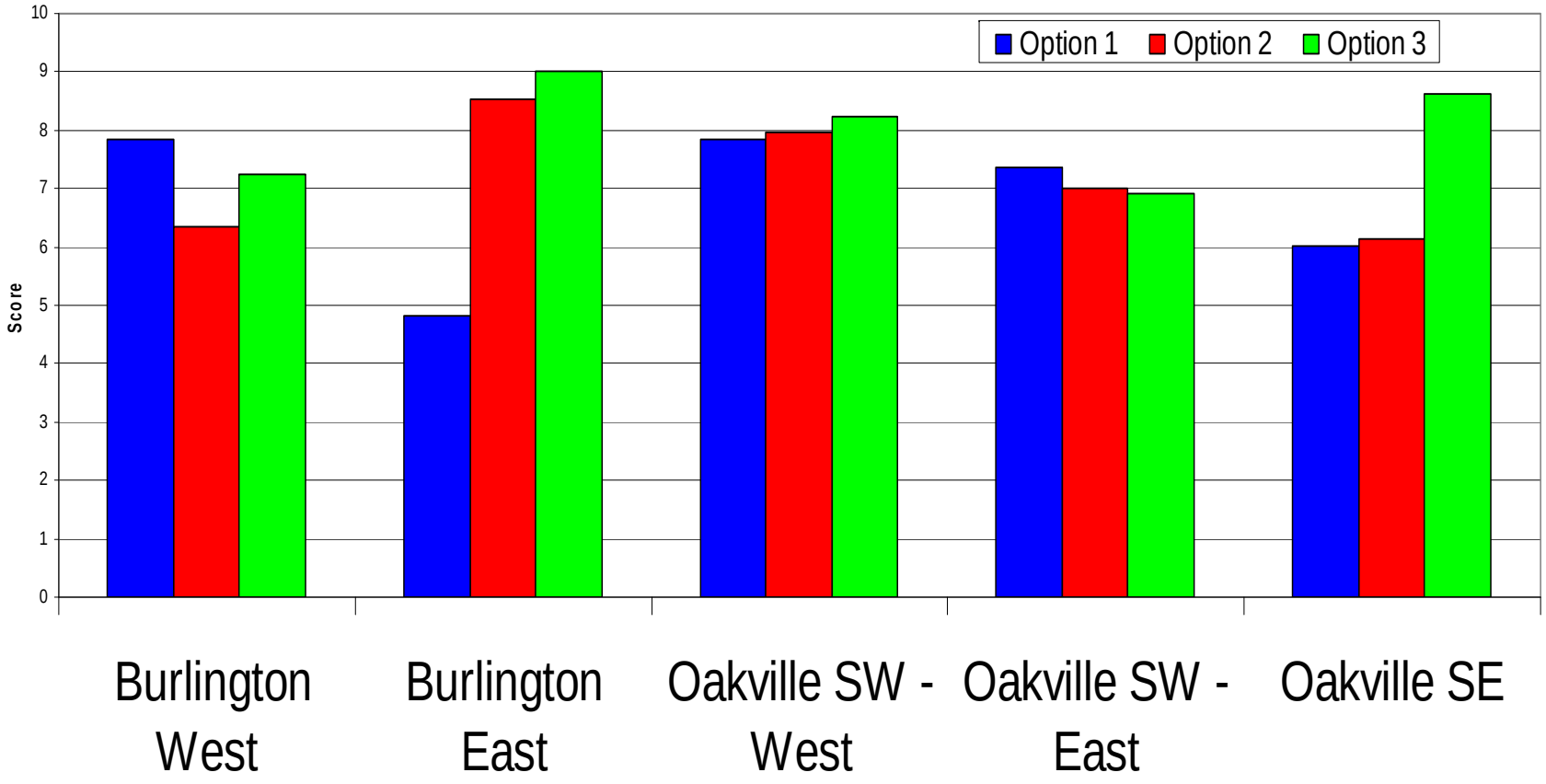
Evaluation Process

- 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

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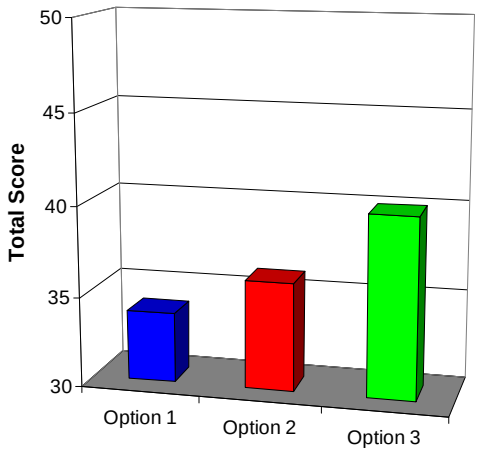

Recommended Servicing Approach

- 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

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Thank you for attending this information centre!

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