



**THE CORPORATION OF THE  
TOWNSHIP OF RAMARA**  
*Proud History - Progressive Future*

**BAYSHORE VILLAGE  
EFFLUENT SPRAY IRRIGATION EXPANSION  
CLASS ENVIRONMENTAL ASSESSMENT  
SCHEDULE B**

**PUBLIC INFORMATION OPEN HOUSE  
FEBRUARY 24, 2011**

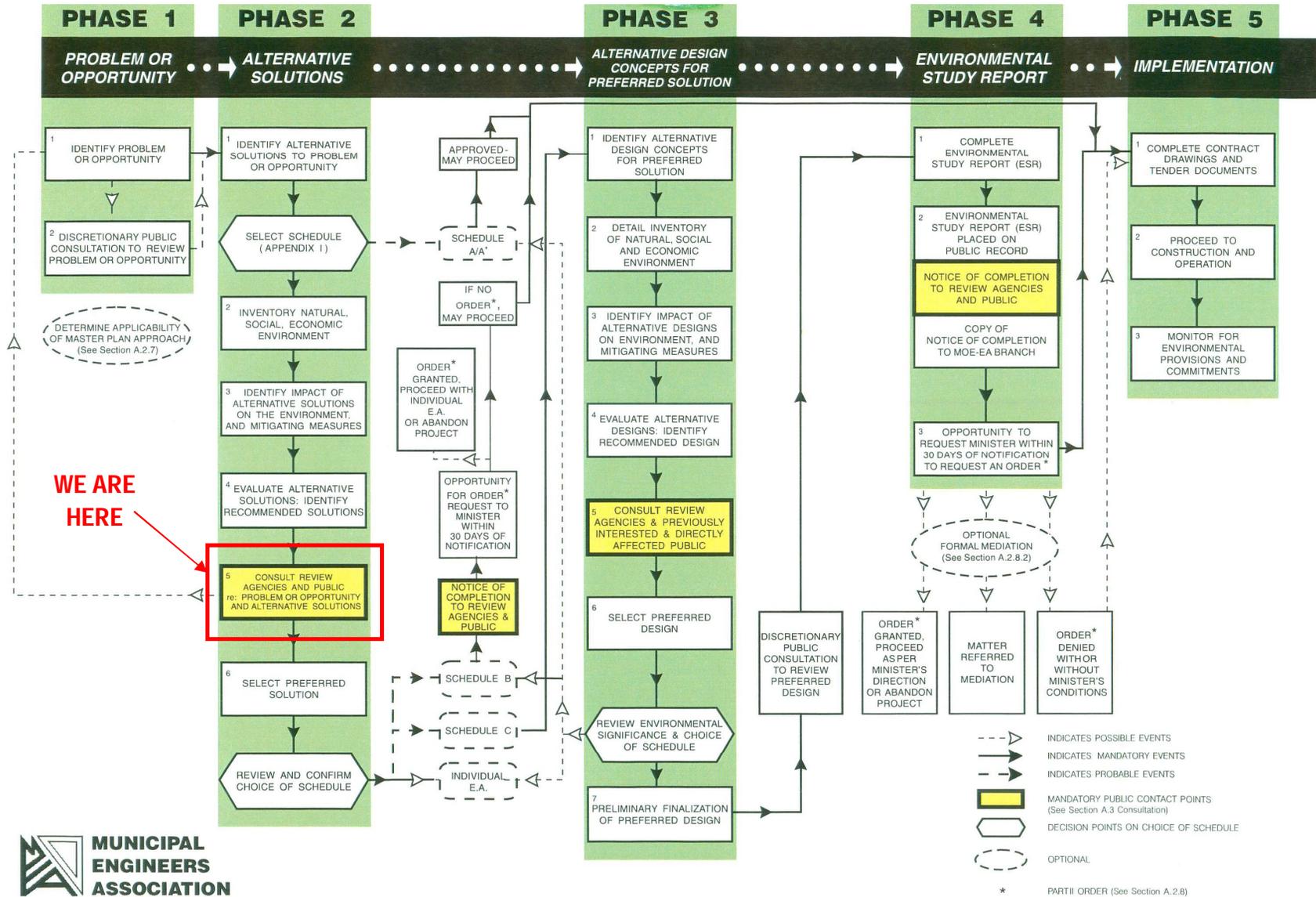


**C.C. Tatham & Associates Ltd.**  
Consulting Engineers

Collingwood    Bracebridge    Orillia    Barrie

# Bayshore Village Effluent Spray Irrigation Expansion Class Environmental Assessment

## MUNICIPAL CLASS EA PROCESS



**Bayshore Village Effluent Spray Irrigation Expansion  
Class Environmental Assessment**

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**PROBLEM STATEMENT**

The Township of Ramara needs spare capacity at the effluent spray irrigation system serving the Bayshore Village Sewage Works, in order to provide operational flexibility. Spray irrigation fields need to be occasionally taken out of service for aerating and/or tilling as needed to restore and maintain their performance and their effluent absorption capacity.

**Bayshore Village Effluent Spray Irrigation Expansion  
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**STUDY AREA**



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**EXISTING SPRAY IRRIGATION FIELDS**



## **BACKGROUND**

- Treated effluent from the Bayshore Village sewage lagoons is spray irrigated on two fields near Concession Road 8 and Sideroad 20.
- The spray irrigation fields were approved by the Ministry of the Environment in the 1980s based on their soil conditions.
- Soil conditions are becoming compacted, which, if not addressed, will impact the capacity of the spray irrigation facility.

The Township of Ramara, as part of its proactive approach to managing environmental services, wants to provide a means to restore and maintain the soil's absorption characteristics.

Alternative solutions must be:

- Compatible with current operations
- Consistent with the current Certificate of Approval
- Consistent with Ministry of the Environment guidelines for effluent spray irrigation.

## **SPRAY IRRIGATION SYSTEM MONITORING**

**Groundwater, surface water and soils are monitored.**

When:

- Before the start of the spray irrigation system in early May
- During the spray season in August
- After the spray irrigation season in November

Where:

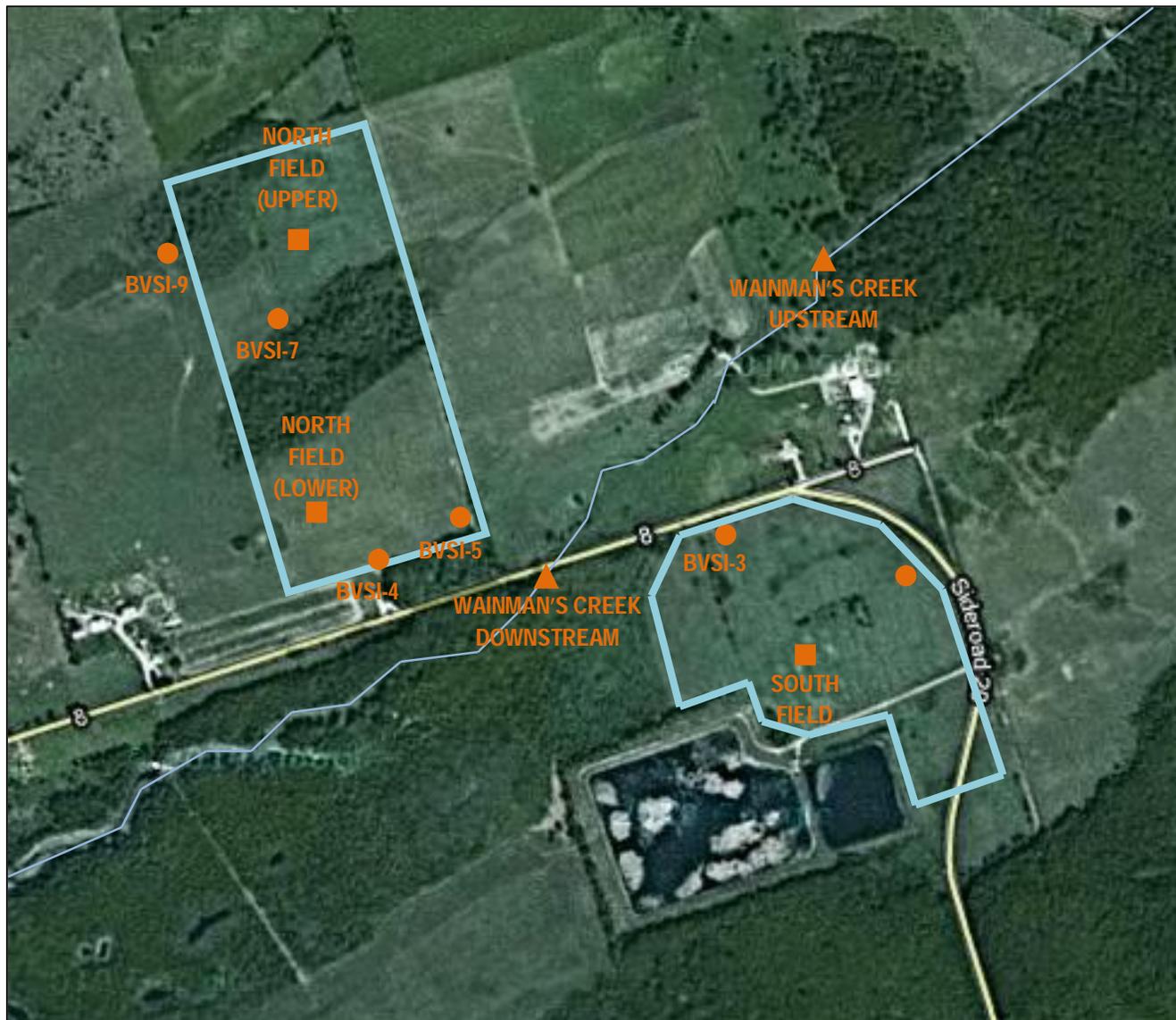
- **Groundwater** samples from six boreholes throughout the North and South Fields
- **Surface water** samples from Wainman's Creek upstream and downstream of the spray irrigation area
- **Soil** samples from the North and South Fields

What:

- Each sample is tested for various contaminants by an accredited laboratory

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**MONITORING LOCATIONS**



**LEGEND**

- GROUNDWATER
- ▲ SURFACE WATER
- SOIL

## **SPRAY IRRIGATION SYSTEM MONITORING**

### **GROUNDWATER**

- Groundwater monitoring data show no change in water quality over time except for an increase in the concentration of chlorides.

### **SURFACE WATER**

- Samples from Wainman's Creek upstream and downstream of the spray irrigation area show the water quality is unaffected by spray irrigation.

### **SOIL**

- Soil core samples show localized and temporary increases in the concentration of some contaminants during the spray irrigation season.

## **ALTERNATIVE SOLUTIONS**

### **ALTERNATIVE 1: DO NOTHING**

Status Quo: Continue with current spray irrigation method on existing fields.

#### **ADVANTAGES**

- No capital costs or increase in operating and maintenance costs.

#### **DISADVANTAGES**

- Likely to result in deteriorating soil conditions, leading to:
  - reduced effluent disposal capacity;
  - increased potential for ponding and runoff;
  - increased potential for contamination of Wainman's Creek and Lake Simcoe.
- Does not improve operational flexibility.

## **ALTERNATIVE SOLUTIONS**

### **ALTERNATIVE 2: ACQUIRE ADDITIONAL LAND FOR SPRAY IRRIGATION**

Purchase land area equal to or greater than the largest field currently in service (13.6 ha), and install spray irrigation equipment.

#### **ADVANTAGES**

- Provides operational flexibility to take a field out of service to aerate/till it.
- This will assist in restoring and maintaining soil conditions to:
  - maintain required spray irrigation capacity for disposal of annual effluent volume;
  - eliminate potential for ponding and runoff;
  - eliminate potential for surface water contamination.

#### **DISADVANTAGES**

- Requires purchase of a minimum of 13.6 ha of additional land.
- Capital cost for spray irrigation equipment and piping.
- Increase in operating and maintenance costs.
- Potential visual impact of additional spray irrigation activity.

Potential impacts on natural environment can be fully mitigated by proper site selection.

**BAYSHORE VILLAGE EFFLUENT SPRAY IRRIGATION EXPANSION  
EVALUATION OF ALTERNATIVES**

<b>CONSIDERATIONS</b>	<b>DO NOTHING</b>	<b>ACQUIRE ADDITIONAL LAND FOR SPRAY IRRIGATION</b>
<b>Does it Meet the Problem Statement?</b>	No	Yes. Additional land will provide spare capacity to increase operational flexibility to take a field out of service to aerate or till it and restore and maintain its infiltration capacity.
<b>TECHNICAL CRITERIA</b>		
<b>Maintains Spray Irrigation Capacity</b>	Deteriorating soil conditions could lead to reduced infiltration capacity, which will reduce effluent disposal capacity. Approved spray irrigation season of May to October may need to be extended to dispose of the year's effluent volume.	Restoring and maintaining the soil conditions will ensure the required spray irrigation capacity is maintained over time, and the annual effluent volume can continue to be disposed as originally approved.
<b>Provides Operational Flexibility</b>	Does not improve flexibility of operation. Both North and South fields are needed to dispose of lagoon effluent each season.	Spare land will provide flexibility to take a spray field out of service, as needed.
<b>Operation and Maintenance Requirements</b>	No change in operation and maintenance practices.	Additional spray irrigation lands and equipment will increase the operation and maintenance work by the Township's operators.
<b>NATURAL ENVIRONMENT AND CULTURAL HERITAGE CRITERIA</b>		
<b>Surface Water Quality</b>	Deteriorating soil conditions could lead to ponding and runoff, which could increase the potential for contamination of drainage ditches, Wainman's Creek and Lake Simcoe.	No potential for ponding, runoff and surface water contamination as soil's infiltration capacity will be maintained and spray irrigation rates will not be increased.

**BAYSHORE VILLAGE EFFLUENT SPRAY IRRIGATION EXPANSION  
EVALUATION OF ALTERNATIVES**

<b>CONSIDERATIONS</b>	<b>DO NOTHING</b>	<b>ACQUIRE ADDITIONAL LAND FOR SPRAY IRRIGATION</b>
<b>Groundwater Quality</b>	No potential negative impacts. Historical groundwater monitoring data show minor impact of spray irrigation on groundwater quality.	No potential negative impacts. Spray irrigation rates, established to maximize evapotranspiration and to suit the soil's infiltration capacity, will be the same or less. Historical groundwater monitoring data show minor impact of spray irrigation on groundwater quality.
<b>Woodlands, Wetlands and Vegetation</b>	No potential impacts. Existing spray irrigation areas are near but outside a significant wetland, and are currently farmed.	No potential impacts if additional land to be acquired is not within a significant wetland and has no significant woodlands or vegetation.
<b>Wildlife and Habitat</b>	No potential impacts. Existing spray irrigation areas are not significant wildlife habitat and are not within a Life Area of Natural and Scientific Interest (ANSI).	No potential impacts if additional land to be acquired is not habitat for significant wildlife species and not within an ANSI or significant wetland.
<b>Archaeological Resources</b>	No potential impacts.	Stage 1 archaeological assessment will be completed for the potential additional lands. Impacts on archaeological findings will be fully mitigated if artefacts are found.
<b>Heritage Resources</b>	No potential impacts.	No potential impacts if additional land to be acquired has no built heritage resources.
<b>SOCIO-ECONOMIC ENVIRONMENT</b>		
<b>Public Health and Safety</b>	Potential negative impact, as deteriorating soil conditions could lead to effluent ponding (breeding of mosquitoes) and runoff to Wainman's Creek and lake Simcoe (deterioration of water's bacteriological quality).	Maintaining the soil's infiltration capacity will reduce potential for ponding and runoff to surface water bodies.  Low potential impact from aerosol drift as effluent spraying limited to days with low wind speeds.

**BAYSHORE VILLAGE EFFLUENT SPRAY IRRIGATION EXPANSION  
EVALUATION OF ALTERNATIVES**

<b>CONSIDERATIONS</b>	<b>DO NOTHING</b>	<b>ACQUIRE ADDITIONAL LAND FOR SPRAY IRRIGATION</b>
<b>Existing Land Uses</b>	No potential impacts.	No potential impacts on existing surrounding land uses. Additional lands will be existing agricultural lands within a rural area.
<b>Aesthetic Impacts (Noise, Visual, Odour)</b>	No change. Spray irrigation does not result in noise or odour.	Minor potential impact. Additional spray irrigation equipment may be visible to more residents. Spray irrigation does not result in noise or odour.
<b>Property Values</b>	No change.	Limited potential to affect property values due to low potential aesthetic impacts.
<b>Construction Impacts</b>	No potential impacts.	Installation of effluent piping to the additional lands and spray irrigation equipment could cause minor disruption to local residents or traffic.
<b>Land Requirements</b>	None.	Minimum 13.6 ha of additional land is required.
<b>Capital Costs</b>	None.	Approximately \$600,000 for additional spray irrigation equipment, piping and modifications to existing effluent pump house. Plus cost of purchasing additional land.
<b>Operating and Maintenance Costs</b>	None.	Potential increase in energy costs to pump effluent to additional lands. Increase in operating and maintenance costs for additional spray irrigation equipment.

## **PRELIMINARY PREFERRED SOLUTION**

### **ACQUIRE ADDITIONAL LAND FOR SPRAY IRRIGATION**

Spare spray irrigation lands (13.6 ha minimum is recommended) will allow existing spray irrigation fields to be taken out of service as required to restore and maintain their performance and capacity.

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**NEXT STEPS**

- Consider comments received and finalize evaluation of alternative solutions.
  
- Make recommendation for preferred solution to Township Council.
  
- Issue Notice of Completion of Class EA study and request public comments.
  
- If Alternative 2 is preferred, proceed to acquire suitable land and design spray irrigation system.

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**COMMENTS**



Please fill out a comment sheet and either leave it with us today or send it to the address provided.

Comments should be submitted to Suzanne Troxler no later than Monday, March 14, 2011.

**C.C. Tatham and Associates Ltd.**

Suzanne Troxler, M.Sc., P.Eng.

Manager - Environmental Engineering

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Email: [stroxler@cctatham.com](mailto:stroxler@cctatham.com)

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**FREEDOM OF INFORMATION ACT**

Comments and information regarding this project are being collected to assist the project team in meeting the requirements of the *Environmental Assessment Act*. These comments will be maintained for reference throughout the project and, with the exception of personal information, will be used in the Environmental Project File and become part of the public record.

**ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT**

The Township of Ramara continues to enhance accessibility that is inclusive of all ages and abilities. The information presented at today's Public Information Open House can be provided in alternative formats upon request. Such a request should be submitted to:

**C.C. Tatham & Associates Ltd.**

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Ph: 705-444-2565 ext. 285  
Fax: 705-444-2327  
Email: [stroxler@cctatham.com](mailto:stroxler@cctatham.com)

or

**Township of Ramara**

Mr. David Stephen  
Manager, Environmental Services  
2297 Highway 12 P.O. Box 130  
Brechtin, ON L0K 1B0  
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