APPENDIX F:

PRESENTATION TO TOWNSHIP COUNCIL – SEPTEMBER 2014

Bayshore Village Effluent Spray Irrigation System

Class EA Study Update
September 15, 2014

Issue to be addressed

- Existing effluent spray irrigation fields have been in continuous operation for over 25 years.
- Soils have become compacted and observed to have a reduced absorption capacity.
- Original Problem Statement: Need spare spray irrigation lands so that operators can take areas out of service for aerating or tilling them, to maintain their effluent absorption capacity.
- An increase in the rated capacity of the effluent disposal system is not required.

Existing Spray Irrigation Fields

North Fields: 10 ha

South Field: 13.6 ha

Project Evolution

- Class EA Study – Schedule B initiated in October 2010
- Public consultation (PIC No. 1) in February 2011
  - Do nothing, or
  - Purchase land and establish spare spray fields
- Public concerns with runoff from existing spray fields, impacts on adjacent farm properties, and local drainage.
- Survey and assessment of drainage in 2011.
- Cleaning and improvements to ditches, culverts and drainage channels in 2011 and 2012.

Project Evolution

- Broadened the Problem Statement for Class EA Study:
  - Find the most appropriate solution for the disposal of effluent.
    - Maintains capacity to dispose of the treated effluent from Bayshore Village lagoons.
    - Minimizes potential impacts on environment and adjacent residents.
    - Meets Township operational requirements.
    - Affordable.
- Developed additional alternatives, discussed with Township in 2012.
- Consultation with MOE.
- Preparation for PIC No. 2.
- Project put on hold in July 2013 until option or offer to purchase land.
- Township offer to purchase field west of lagoons was rejected.

Alternative Solutions

1. Do nothing – Status quo (For comparison purposes only)
2. Alter spray irrigation practices (reduced spray frequency and application rates); add effluent UV disinfection

3A. Establish 1 new spray irrigation field (16 ha); add UV disinfection and tree buffers

3B. Establish 2 new spray irrigation fields (22 ha) and abandon North Field; add UV disinfection and tree buffers

4. Build an effluent recharge bed (5 ha) and abandon North Field; add UV disinfection and tree buffers
5. Build an effluent recharge bed (7 ha) and discontinue spray irrigation
6. Upgrade STP and discharge effluent to Wainman Creek (to Lake Simcoe)

Alternative 2: Alter Spray Irrigation Practices to Rejuvenate Soil

Estimated project cost: $180,000

Alternative 3A: Establish One New Spray Irrigation Field

Estimated project cost: $2.6M incl. land acquisition

Alternative 3B: Establish Two New Spray Irrigation Fields and Abandon North Spray Fields

Estimated project cost: $2.8M incl. land acquisition

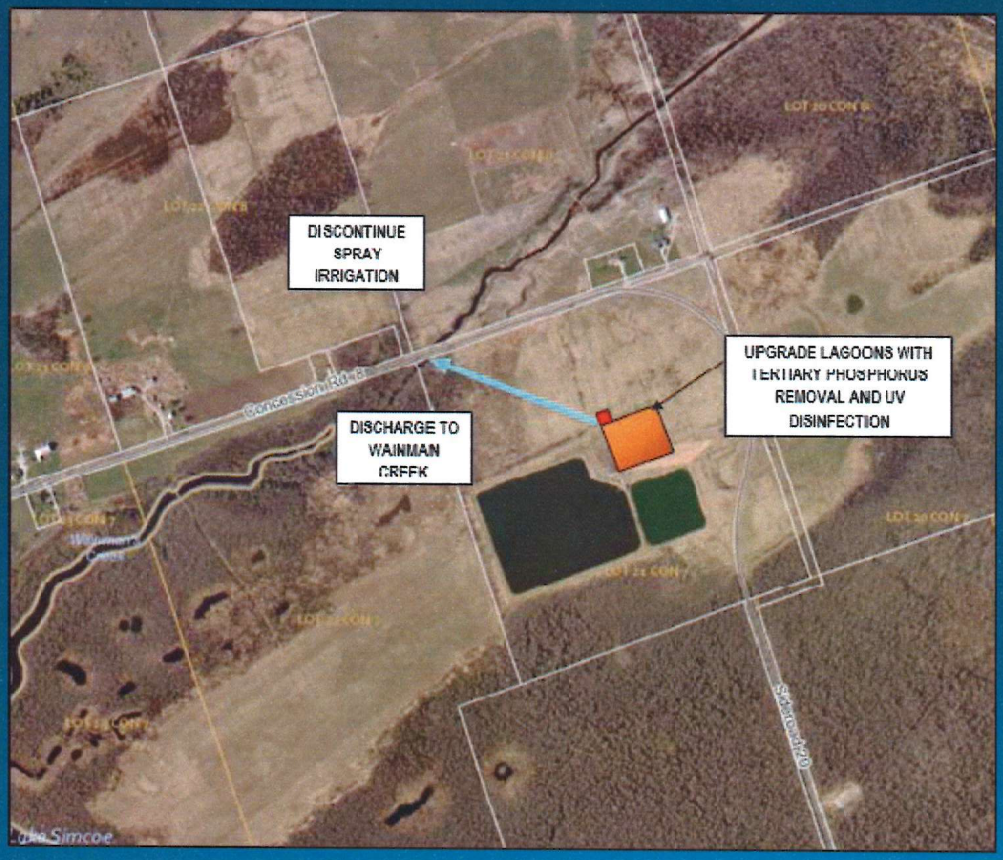
Alternative 4: Build Effluent Recharge Bed and Abandon North Fields

Estimated project cost: $4.7M incl. land acquisition

Alternative 5: Build Effluent Recharge Bed and Discontinue Spray Irrigation

Estimated project cost: $4.4M incl. land acquisition

Alternative 6: Discontinue Spray Irrigation, Upgrade Sewage Treatment and Discharge to Wainmain Creek



Estimated project cost: $3M

Main Considerations

- Provides the required effluent disposal capacity without runoff to ditches and Wainman Creek
- Provides some spare capacity for operational flexibility
- Requires reasonable level of effort for operation and maintenance
- Addresses adjacent residents' concerns
- Capital costs for construction, equipment, installation and land
- MOE will approve the effluent disposal system

Assessment

- Both spray irrigation system and recharge bed options rely on the soils' infiltration capacity.
  - In this area, soils have low permeability and there is a high water table. Need large areas for low application rates
  - Potential for break-outs, runoff and poor performance
  - High capital costs and no reduction in O&M
  - Not long-term solutions
- Conditions more suitable for an effluent discharge to the lake.
  - Better control of treatment performance and effluent discharge
  - Requires upgrading to tertiary sewage treatment

Surface Effluent Discharge

- Technically, it is the preliminary preferred solution
  - Long-term solution
  - Maintain sewage lagoons for secondary treatment
  - Add tertiary treatment for phosphorus removal
  - Add effluent UV disinfection
  - Discharge effluent to Wainman's Creek
- Approval is expected to be difficult
  - Lake Simcoe Protection Plan Policy 4.3: prohibits new municipal STP in Lake Simcoe watershed unless it replaces failing subsurface sewage works.
  - MOE Barrie advised against it and suggested LSRCA would be opposed.

Proposed Next Steps

- Hold PIC No. 2, presenting new alternatives and preliminary preferred solutions, to obtain public comments.
- Consultation with MOE and LSRCA. Arguments:
  - No net increase in P loading to Lake Simcoe
  - Not a new STP
  - Replacing marginal subsurface effluent disposal system
  - Long-term solution
- Revise assessment of alternatives. Final recommendation
- Study report and Notice of Completion