



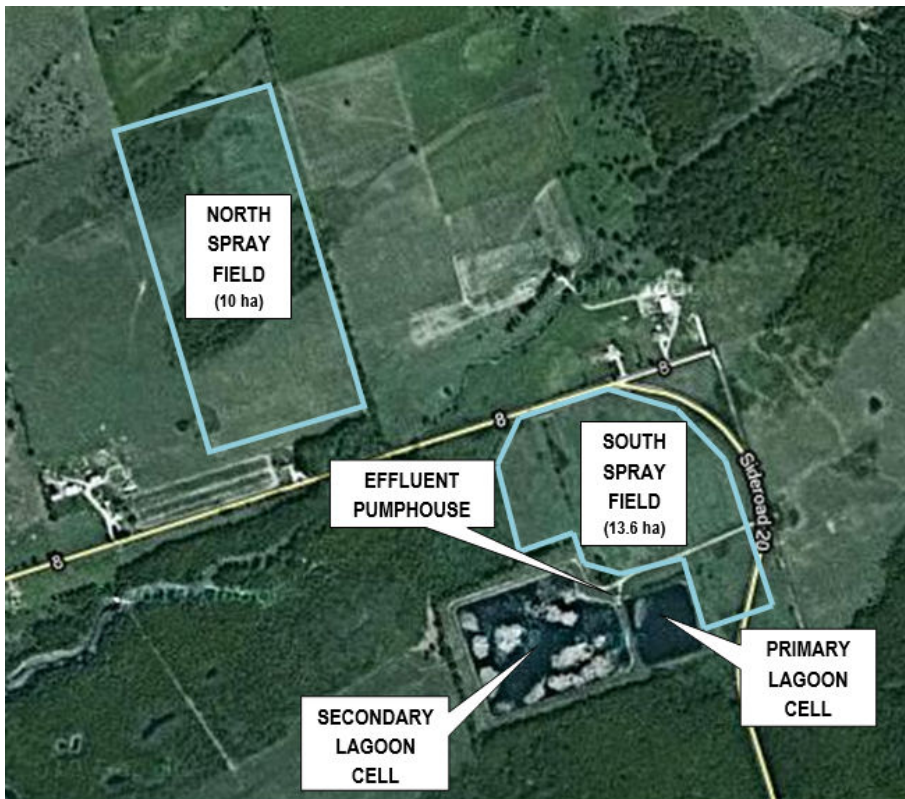
BAYSHORE VILLAGE EFFLUENT SPRAY IRRIGATION CLASS EA UPDATE

Public Information Centre

May 22, 2024



BACKGROUND: EXISTING SEWAGE WORKS



- Sewage from Bayshore Village is pumped to 2 treatment and storage ponds (lagoons)
- Treated effluent is spray irrigated on the South and North fields from May to October
- Effluent disposal is by evapotranspiration and infiltration



CLASS EA PROBLEM STATEMENT

- The treated effluent is spray irrigated on fields that have been in continuous operation since the 1980s
- Soils appear to have become compacted and to have less infiltration capacity
- Increasingly difficult to dispose of all effluent from May to October due to weather. Available # spray days less than # design spray days
- Public concerns with occasional runoff and potential impacts on humans/farm animals, aerosols, drainage

Need to find the most appropriate solution for the disposal of the lagoon effluent

MAIN CONSIDERATIONS



The preferred solution needs to:

Provide the required effluent disposal capacity without runoff to ditches and Wainman Creek

Provide some spare capacity for operational flexibility

Involve reasonable level of effort and costs for operation and maintenance

Have reasonable capital costs for construction, equipment and land

Address adjacent residents' concerns

Be acceptable to MECP so that an approval can be obtained

PROJECT HISTORY



Class EA Study Report issued in 2017

- Preferred solutions in 2017 report:
 - Immediate: Establish one additional spray area on field west of lagoons
 - Long Term: Abandon spray irrigation, build tertiary STP with effluent discharge to Wainman Creek/Lake Simcoe
- MECP did not approve the EA Report

From 2017 to 2022

- Township discussions with politicians and MECP for a tertiary STP
- Identified sources of inflow & infiltration, and conducted repairs

2022

- Township resolved to abandon the STP solution
- Tatham retained to update and finalize the Class EA

ALTERNATIVE SOLUTIONS SCREENING

Criteria for Screening:

- ✓ Meets Problem Statement
- ✓ Meets current MECP guidelines and LSPP policies
- ✓ Could be financially viable

Screened out alternative solutions:

- *1- Reduce inflow and infiltration in sewers*
- *4- Establish 1 new spray irrigation field (West) and decommission North Field*
- *5- Establish 2 new spray irrigation fields and decommission North field*
- *9- Pump effluent from lagoons to an expanded Lagoon City STP*
- *10- Upgrade lagoons with tertiary STP and discharge effluent to Wainman Creek/Lake Simcoe*

Alternative solutions considered further:

- Do nothing (for comparison)
- 3- Establish 1 new spray irrigation field (West)
- 6- Build effluent disposal bed on the West field and continue spray irrigation on the South field only
- 7- Build effluent disposal bed on the South field and establish new spray irrigation field (West)
- 8- Build effluent disposal bed and discontinue spray irrigation



SCREENED OUT ALTERNATIVE SOLUTIONS

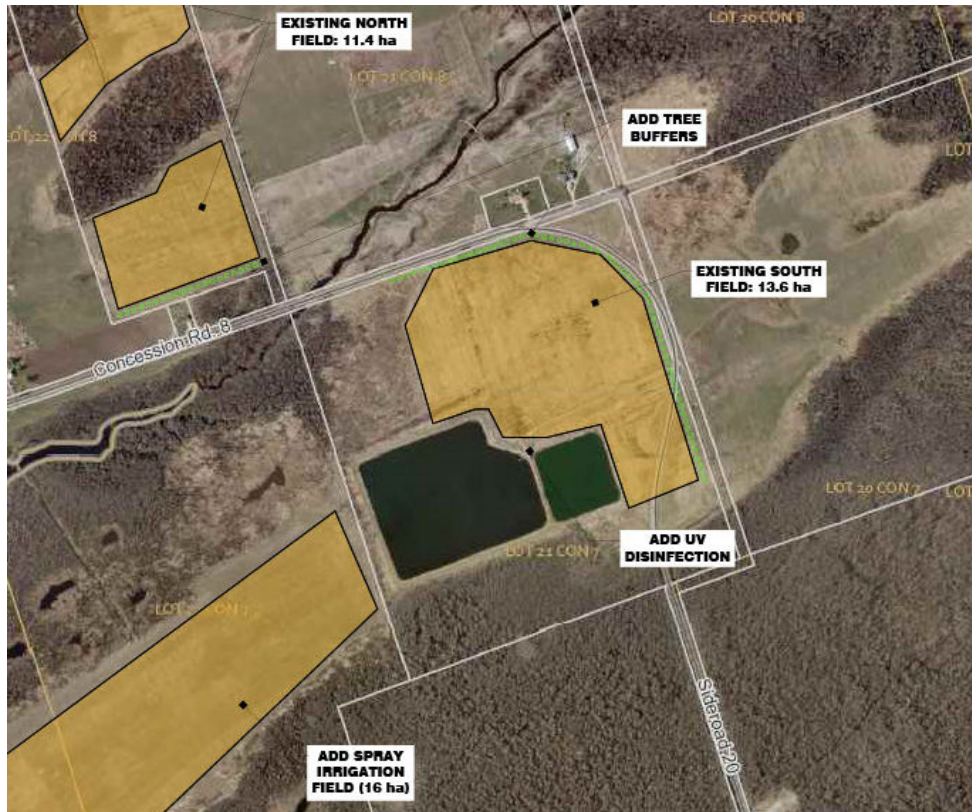
Screened out Alternatives	Main Rationale for Screening
Reduce inflow and infiltration in sewers, on its own	Helps but cannot on its own address Problem Statement. Must continue I/I monitoring and control.
Spray Irrigation: Add West Field, use South Field , abandon North Field	Insufficient spray area to dispose of annual volume in less than 75 days.
Spray Irrigation: Add West Field plus another field TBD, use South Field, abandon North Field	Closest well drained fields outside EP land are 3 - 4 km away. High estimated cost (\$11M) to convey effluent.
Pump lagoon effluent to expanded Lagoon City STP, abandon spray irrigation	Very high project costs (\$20M if forcemain route through wetland; \$36M if forcemain along road ROWs).
Upgrade lagoons with tertiary STP with Discharge to Wainman Creek/Lake Simcoe, abandon spray irrigation	Does not meet Lake Simcoe Protection Plan policies. Will not be approved by MECF

DO NOTHING (FOR COMPARISON)



- Continue with spray irrigation on existing fields
- Cannot dispose of annual effluent volume in available 65 - 75 spray days at MECP allowed spray irrigation rate
- Occasional runoff and potential negative impact on surface water quality
- Does not address adjacent residents' concerns
- No capital costs
- Annual O&M costs (\$150k/year) + haulage costs (\$700k in 2023)
- 20-year costs: \$3M, plus equipment replacement and haulage

ALTERNATIVE 3: USE THE SOUTH & NORTH FIELDS AND ADD THE WEST FIELD



- Adds the West Field, tree buffers, and UV disinfection of effluent
- Sufficient to dispose annual volume in 65 spray days at allowed spray irrigation rate
- Reduced potential for runoff and negative impacts on surface water quality
- Reduced aesthetic impacts and potential for aerosols
- Does not address adjacent residents' concerns with spray irrigation
- Estimated project cost: \$1.6M
- Estimated annual O&M costs: \$230k/year + potential haulage costs
- Estimated 20-year costs: \$6.2M, plus equipment replacement

ALTERNATIVE 6: BUILD DISPOSAL BED ON WEST FIELD AND KEEP SPRAY IRRIGATION ON SOUTH FIELD



- Add tree buffer and UV disinfection of effluent before spraying on South Field
- Build effluent disposal bed on West Field, used year-round
- Can dispose of annual volume of effluent, with spare capacity
- Much less potential for runoff and negative impacts on surface water quality
- Much less aesthetic impacts and potential for aerosols
- Low potential impacts on groundwater quality
- Does not fully address adjacent residents' concerns with spray irrigation
- Estimated project cost: \$6.2 M
- Estimated annual O&M costs: \$150k/year
- Estimated 20-year costs: \$9.2M, plus equipment replacement

ALTERNATIVE 7: BUILD EFFLUENT DISPOSAL BED ON SOUTH FIELD AND SPRAY IRRIGATE ON WEST FIELD



- Decommission existing spray fields, and replace with new spray area on West Field
- Build effluent disposal bed on South Field, used year-round
- Can dispose of annual volume of effluent, with spare capacity
- Much less potential for runoff and negative impacts on surface water quality
- Much less aesthetic impacts and potential for aerosols, due to location of spray field
- Low potential impacts on groundwater quality
- May reduce adjacent residents' concerns with spray irrigation, due to location of spray field
- Project implementation is longer (2 phases)
- Estimated project cost: \$8.3 M
- Estimated annual O&M costs: \$150k/year
- Estimated 20-year costs: \$11.3M

ALTERNATIVE 8: BUILD EFFLUENT DISPOSAL BED AND DISCONTINUE SPRAY IRRIGATION



- Decommission all spray fields
- Build effluent disposal bed on West field, used year-round
- Can dispose of annual volume of effluent, with spare capacity
- Eliminates potential for runoff and negative impacts on surface water quality
- Reduces aesthetic impacts and eliminates potential for aerosols
- Low potential impacts on groundwater quality
- Addresses adjacent residents' concerns with spray irrigation
- Estimated project cost: \$7.3 M
- Estimated annual O&M costs: \$80k/year
- Estimated 20-year costs: \$8.9M

ASSESSMENT OF ALTERNATIVES



Alt. 3: Continue with spray irrigation on existing fields and add a new field to the west

- Lowest 20-year cost alternative
- Risk remains that weather could prevent disposal of all effluent each year

Alt. 6 or 7: Adding a large effluent disposal bed and keeping a spray irrigation field

- Higher 20-year cost than Alt. 3
- Very low risk of insufficient disposal capacity
- Reduces risk of impacts to environment and residents
- Requires operation and maintenance of 2 systems
- Spray irrigation could be replaced with disposal bed in a second phase (Alt. 7)

Alt. 8: Abandoning spray irrigation and building a large effluent disposal bed

- 20-year cost is between Alt. 3 and Alt. 6 costs
- Eliminates risk of insufficient capacity due to weather
- Reduces O&M requirements
- Reduces risk of impacts to environment and residents

PRELIMINARY PREFERRED SOLUTION



Build effluent disposal bed on West field

Abandon effluent spray irrigation

Continue monitoring I/I and addressing sources of I/I



NEXT STEPS TIMELINE

- Obtain comments from public and agencies
- Additional field investigations (archaeological, geotechnical) of West field
- Final evaluation of alternatives and identification of preferred solution

June 2024

Summer 2024

- Draft Class EA Report to Township Council and to MECP
- Final Class EA Report and Notice of Study Completion
- 30-day review period

2024-2025

- Design of preferred solution
- Application for MECP approval

2026

- Construction

IN THE INTERIM



The Township is committed to:

- Operate the spray fields in strict compliance with the Certificate of Approval
- Supervise the spray irrigation operation as per MECP requirements
- Repair piping and adjust spray heads in spray fields as needed
- Continue sanitary sewer repairs in Bayshore Village
- Implement the contingency plan (haulage) if needed



YOUR INPUT

- Please give us your comments in writing
 - Use comment sheet
 - Or send us an email
 - By June 7, 2024
- PIC presentation available on Township website: www.ramara.ca

ANY QUESTIONS?