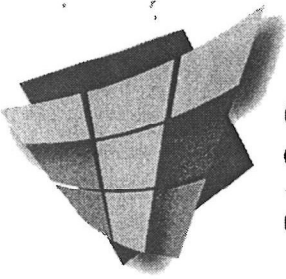


**APPENDIX H:
MEETING WITH MOECC – JULY 2015**



SA/ME/TIM C. W. S.
Orillia
C.C. Tatham & Associates Ltd.
Consulting Engineers

115 Sandford Fleming Drive, Suite 200

Collingwood, Ontario L9Y 5A6

Tel: (705) 444-2565

Fax: (705) 444-2327

Email: info@cctatham.com

Web: www.cctatham.com

Collingwood

Bracebridge

Orillia

Barrie

June 30, 2015

COPY

via e-mail & mail
CCTA File 100080

Chris Hyde

District Supervisor

Barrie District Office

Ministry of the Environment and Climate Change

54 Cedar Pointe Drive, Unit 1201

Barrie, ON L4N 5R7

**Re: Bayshore Village Effluent Spray Irrigation Class EA
Request for Pre-consultation Meeting**

Dear Chris:

Further to the last meeting we had at your office in May 2013 to discuss the Township of Ramara Class EA on the Bayshore Village effluent spray irrigation fields, the project has had some interruptions but has now resumed. We have completed further analysis of alternatives, received direction from Township Council and had a meeting with the LSRCA. We are writing to request a second consultation meeting with the MOECC to discuss the alternatives and our preliminary conclusions, before we proceed to a second PIC, which we want to hold this summer.

We have attached a formal request for a pre-consultation meeting. In support of this request and in preparation for the meeting, we have summarized below the main issues and the salient points of our updated assessment.

Main Issues and Goal of the Class EA Study

The Bayshore Village effluent spray irrigation fields have been in continuous operation for over 25 years, and the clay soils have become compacted. Their effluent absorption capacity appears to have reduced over time. Adjacent residents have expressed significant concerns with runoff from the spray fields and potential impacts on humans and farm animals in contact with the drainage ditches, as well as with non-disinfected aerosols from the spray irrigation operation. The Township has increasing difficulty in operating the spray fields as intended and within the allowed spray irrigation period.

An appropriate long-term solution for the disposal of the effluent from the Bayshore Village lagoons needs to be identified. This solution must provide sufficient effluent disposal capacity to match the system's rated capacity without runoff to ditches and Wainman's Creek and provide some operational

flexibility. It must have minimal impacts on surface water and groundwater quality and be implementable at a reasonable capital cost and level of effort for operation and maintenance.

Assessment of Alternatives

The alternatives that have been assessed include:

- Subsurface disposal options in various combinations. Options include: establishing additional spray fields and adding effluent UV disinfection and tree buffers; and building effluent recharge beds.
- Surface discharge option, which involves adding tertiary treatment and discharging to a creek to Lake Simcoe.

In summary, following our assessment of the alternatives, we are of the opinion that the conditions in the Bayshore Village area are not favourable for subsurface effluent disposal, and that spray irrigation fields and/or recharge beds are not good long-term solutions. The heavy clay soils have very low permeability and the water table is high. Large areas are required for very low application rates, and the potential for break-outs, runoff and poor performance will continue to be a constant concern. The Township could achieve better treatment performance and improved control of its effluent quality and discharge with a sewage treatment facility with a single surface discharge point.

The preliminary preferred long-term solution is to treat the secondary effluent from the existing lagoons for phosphorus and nitrogen removal and disinfection, with effluent discharge to Wainman's Creek or other drain to Lake Simcoe.

One of the design criteria for the tertiary treatment facility would be to result in no net increase in phosphorus loading to Lake Simcoe in order to achieve the intent and objective of the Lake Simcoe Protection Plan (LSPP). The Township has extensive groundwater quality and surface water quality monitoring data. The 20-year average phosphorus content of the groundwater at six sampling sites on the spray fields is 0.09 mg/L. The 20-year average phosphorus content in Wainman Creek is 0.07 mg/L, both upstream and downstream of the spray irrigation fields. The TP loading to Lake Simcoe, assuming all effluent and phosphorus reach the lake, is estimated at 10 kg/year at the current flows of 300 m³/day and 13 kg/year at 399 m³/day, the rated capacity of the system. The phosphorus removal system would be designed to comply with a TP limit of 0.09 mg/L or less, which is feasible with current filtration technologies.

As the Bayshore Village sewage treatment and effluent disposal facility is an existing municipal STP, the modification of the STP to add tertiary treatment and a surface discharge would not contravene Policy 4.3 of the LSPP, nor set a precedent for new STPs. It would eliminate a marginal effluent subsurface disposal system that does not meet current MOECC guidelines, and result in a consistently compliant effluent quality. As the upgrades would match the existing facility's rated capacity, and Bayshore Village is almost built-out, it would not support additional development on the shore of Lake Simcoe.

Next Steps

CCTA and the Township intend to present the alternatives under consideration at a second PIC in order to get feedback from the public and review agencies. At a meeting in November 2014, LSRCA indicated their support for upgrading the lagoons to a tertiary treatment facility with a discharge to Lake Simcoe.

We would like your assistance in arranging a pre-consultation meeting with staff from the Barrie District Office, as well as technical staff from Central Region as required, in order to discuss our assessment and preliminary conclusion before we meet with the public at the second PIC this summer.

Please do not hesitate to contact me if you would like more information or to discuss any of the above.

Yours truly,
C.C. Tatham & Associates Ltd.

Suzanne Troxler, B. Eng. M.Sc., P. Eng.
Director, Manager - Environmental Engineering
ST:rlh
Encl.

Copy: David Stephen, Township of Ramara (via e-mail dstephen@ramara.ca)

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Proponent Pre Submission Consultation Meeting
To Discuss Approval Requirements
 (e.g. Environmental Compliance Approvals, Renewable Energy Approvals, Environmental Assessment Act approvals)

Name of Proponent (Company):		Date: June 30, 2015
Township of Ramara		
Contact Information for Meeting Participants:		
Name(s)/Company/Position/Phone/Email:		
Suzanne Troxler, M.Sc., P. Eng., Manager, Environmental Engineering, C.C.Tatham & Associates Ltd., 705-444-2565, stroxler@cctatham.com Keith Shular, B.Sc, B.E.Sc., P. Eng., Project Manager, C.C.Tatham & Associates Ltd., 705-325-1753, kshular@cctatham.com David Stephen, C.E.T., Manager Environmental Services, Township of Ramara, 705-484-5374 Ext. 248, dstephen@ramara.ca		
Name of Project:	Location of Project (address including municipality):	Is this a new facility? (highlight/check)
Bayshore Village Effluent Spray Irrigation Class EA	Bayshore Village, Concessions 7 and 8, Lots 21 and 22, Township of Ramara, County of Simcoe	Yes <input checked="" type="checkbox"/> No
Is the Facility on Crown Land? (highlight/check) Yes <input checked="" type="checkbox"/> No Is this project subject to Environmental Assessment Act approvals? (highlight/check) Yes <input checked="" type="checkbox"/> No		
Facility Type: (highlight/check)		
Heavy Industrial Light Industrial <input checked="" type="checkbox"/> Waste Management Manufacturing Laboratory Food Processing Aggregate Processing Wood Products Remediation Other: _____ (e.g. transmission/transportation corridors)		
Renewable Energy: (highlight/check one if applicable)		
Wind Solar Bioenergy (Thermal, Anaerobic Digestion, landfill gas) Biofuel		
MOE Region (highlight/check): <input checked="" type="checkbox"/> Central <input type="checkbox"/> WestCentral <input type="checkbox"/> Southwest <input type="checkbox"/> Northern <input type="checkbox"/> Eastern		
Project Description: (project size, capacity, type of equipment, etc.)		
<p>The Township of Ramara is proceeding through a Schedule B Class EA for the effluent spray irrigation system serving the Bayshore Village sewage works. The existing disposal system's capacity is deteriorating, resulting in no operating spare capacity and occasional runoff. The Township needs to identify an effluent disposal system that can effectively handle the treated effluent flows, minimize potential environmental impacts and impacts on adjacent residents, and satisfy the Township's operational requirements.</p> <p>The existing sewage works, built in the 1980s, consist of two facultative waste stabilization ponds with a rated capacity of 399 m³/day, with effluent disposal by spray irrigation to 24 ha of adjacent fields from May to September. The system treats sewage from a community of 319 homes located on the eastern shore of Lake Simcoe. The 3-year average ADF is 302 m³/day.</p>		

A PIC has been held, as well as meetings with residents, the MOECC District Office and the LSRCA. A second PIC is planned for the summer of 2015 to present new alternatives and their assessment.

See attached letter for additional details.

Potential Emissions (general volumes if known) **and Sources of Emissions:**

The Bayshore Village lagoons achieve an effluent quality below 10 mg/L TSS and BOD₅ and typically 0.3 mg/L TP. There are no effluent quality requirements in the C of A.

The Township monitors groundwater quality, surface water quality (upstream and downstream of the spray fields) and soil quality before, during and after the spray irrigation season. Extensive data is available.

In 2014, 123,000 m³ of effluent was spray irrigated.

Project Timing:

Class EA study underway.
PIC No. 2 planned for Summer 2015.
Study completion: Fall 2015

Design of new system: 2016

Expected Application Submission

Date(month/year): June 2016

Status of Project Approval: (highlight/check)

New Approval - development stage (not initiated)

*Amendment to existing approval –

*Resubmission of approval

Environmental Study Report Stage (Class EA)

Transition project

EA process required or initiated

Under Director's Order

Approval suspension

Other:

*If amendment to an existing approval or resubmission, please reference application number.

Potential Approvals needed from MOE: (highlight/check as needed)

Environmental Compliance Approval: Air Noise Waste Wastewater

Permit to Take Water (PTTW) Pesticides

Renewable Energy Approval: Wind Solar Bioenergy Biogas

Environmental Assessment

Have you met with other provincial and federal regulatory agencies? (if so, identify which ones and provide details of outcomes):

Meeting with MOE Barrie District Office in May 2013

For renewable energy projects only - Status of FIT contract:

OPA Registration Number: (if applicable)

Should other provincial/federal agencies be invited to the Pre-submission Meeting? (e.g.

Ministry of Natural Resources for Crown Land projects, Ministry of Culture and Tourism for archaeological assessments, Conservation Authority permits, etc.)

Lake Simcoe Region Conservation Authority

Questions and Issues requested to be addressed in the pre-submission consultation meeting:

The main issue to be discussed is the possibility of changing the means of effluent disposal, from spray irrigation to surface discharge to Lake Simcoe, and the effluent quality criteria that would need to be met.

Please return this completed form at least **3 weeks before** approx. preferred meeting date.

Email completed forms to: MOE.ServiceIntegration@ontario.ca

Thank you for helping us serve you better

July 2015

Bayshore Village Effluent Spray Irrigation Class EA Study Update

Study Area



Issue to be Addressed

- Existing effluent spray irrigation fields have been in continuous operation for over 25 years
- Silt and clay soils have become compacted and observed to have a reduced absorption capacity
- Increasingly difficult to dispose of effluent during May to October spray irrigation season
- Original Problem Statement: Need spare spray irrigation lands so that operators can take areas out of service for aerating or tilling, to maintain their effluent absorption capacity

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, potential impacts on humans and farm animals, aerosols, and local drainage
- Township cleaned and improved ditches, culverts and drainage channels in 2011 and 2012

Project Evolution

- New Problem Statement for Class EA Study:
 - Find the most appropriate solution for the disposal of effluent
- Developed additional alternatives
- Consultation with MOE in May 2013
- Project put on hold in July 2013 while Township advanced land acquisition. Offer to purchase west field was rejected
- Direction from Council to resume Class EA in September 2014
- Meeting with LSRCA in November 2014 to discuss alternatives

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 through engineered wetland to Wainman Creek (to Lake Simcoe)

Alternative 2: Alter Spray Irrigation Practices



Alternative 3A: Establish One New Spray Irrigation Field



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



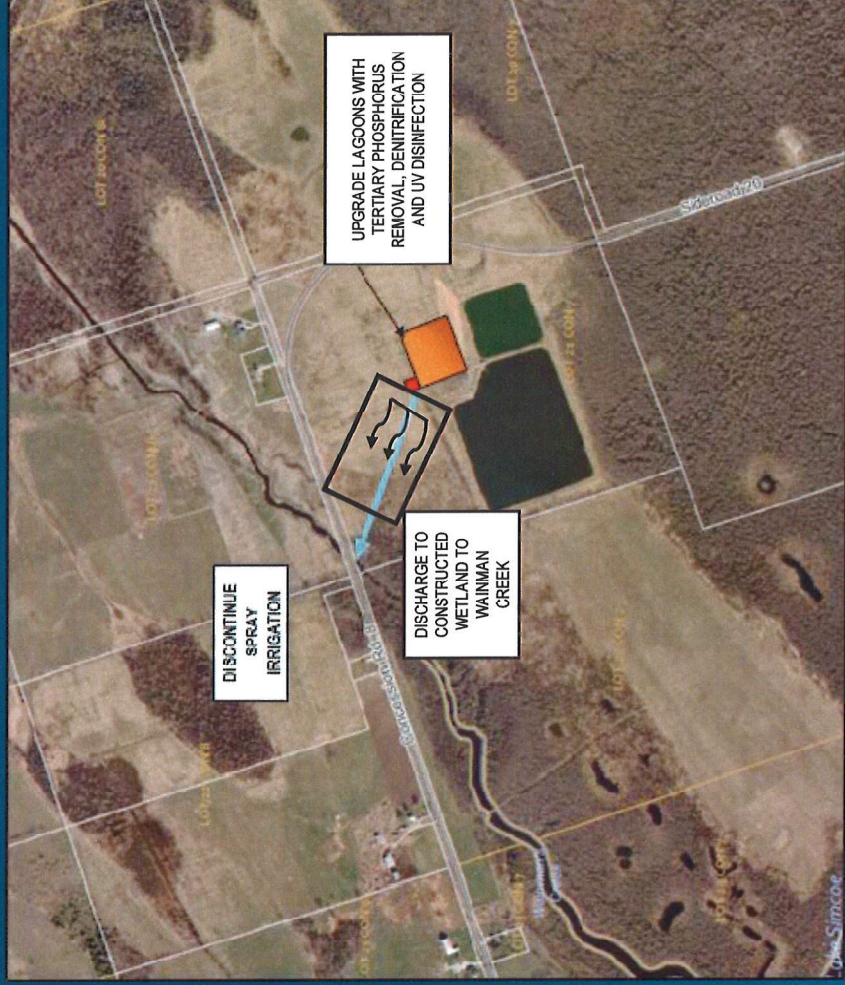
Alternative 4: Build Effluent Recharge Bed and Abandon North Fields



Alternative 5: Build Effluent Recharge Bed and Discontinue Spray Irrigation



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



Main Considerations for Assessment

- Provides the required effluent disposal capacity without runoff to ditches
- Provides some spare capacity for operational flexibility
- Requires reasonable level of effort for operation and maintenance
- Addresses adjacent residents' concerns
- Addresses MOE and LSRCA requirements for protection of Lake Simcoe
- Capital costs for construction, equipment, installation and land

Preliminary Conclusion

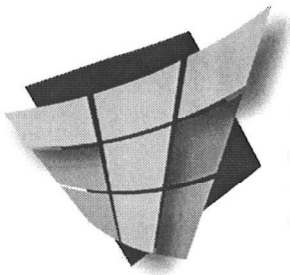
- Both spray irrigation system and recharge bed options rely on the soils' infiltration capacity
 - In this area, soils have low hydraulic conductivity (10^{-6} - 10^{-7} cm/s) and there is a high water table. Need large areas for low application rates
 - Potential for break-outs, runoff and poor performance
 - 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 quality

Surface Effluent Discharge

- Maintain sewage lagoons for secondary treatment
- Add tertiary treatment for denitrification, phosphorus removal and disinfection
- STP effluent objective: TP < 0.1 mg/L; Nitrate LOT
- Add constructed wetland for nitrate polishing
- Naturalize South spray field
- **Technically, preliminary preferred long-term solution**
 - Better protection of lake water quality
 - No net increase in TP loading to Lake Simcoe from existing municipal STP
 - Can be designed for low effluent nitrate
 - Eliminates marginal subsurface disposal system
 - Could be expanded in future to service lakeshore properties on septic systems
 - Opportunity to create wildlife habitat

Next Steps

- Hold PIC No. 2, presenting new alternatives, in Summer 2015
- Revise assessment of alternatives and make recommendation
- Update Council and obtain concurrence
- Study report and Notice of Completion of Class EA, in late Fall 2015



C.C. Tatham & Associates Ltd.
Consulting Engineers

Collingwood Bracebridge Orillia Barrie

115 Sandford Fleming Drive, Suite 200
Collingwood, Ontario L9Y 5A6
Tel: (705) 444-2565
Fax: (705) 444-2327
Email: info@cctatham.com
Web: www.cctatham.com

MEETING MINUTES

Meeting Date: July 29, 2015 **Time:** 10:00 am **CCTA File:** 100080-2

Location: Teleconference

Attendees:

Chunmei Liu	MOECC, Environmental Resource Planner and EA Coordinator
Jamie Flagal	MOECC, Legal Services Branch
Laura Greidanus	MOECC, Water Inspector
Maria Lucchese	MOECC, Surface Water Branch
Tim Krsul	MOECC, Senior Program Advisor
Chris Hyde	MOECC, Supervisor - Barrie District Office
Robert Baldwin	LSRCA, General Manager - Planning and Development
David Stephen	Township of Ramara, Manager of Environmental Services
Suzanne Troxler	C.C. Tatham & Associates Ltd. (CCTA)
Keith Shular	CCTA

Purpose: Bayshore Village Effluent Spray Irrigation Class EA
MOECC Pre-Consultation
Revised Minutes

Meeting Item	Action
<p>1. CCTA provided a brief introduction and background information regarding the project.</p> <p>The project is a Schedule B Class EA for the Bayshore Village Sewage Works (BVSW) effluent spray irrigation fields. The Class EA was initiated on the premise of acquiring additional spray irrigation fields such that the existing spray fields could be taken out of service for tilling/aeration to restore absorption capacity. The Class EA evolved after the first PIC and feedback from the public to include additional options for the disposal of lagoon effluent, not just spray irrigation.</p> <p>Effluent disposal options under consideration in the Class EA study include: expanding the spray irrigation operation to adjacent sub-drained fields; constructing large subsurface disposal beds; and upgrading the lagoon with tertiary treatment</p>	

Meeting Item	Action
<p>and discharging through a constructed wetland to Wainman's Creek/Lake Simcoe.</p> <p>Due to numerous concerns with the spray irrigation and subsurface disposal options, CCTA and the Township have identified discharging tertiary treated effluent to Wainman's Creek/Lake Simcoe as the preliminary preferred effluent disposal method from both an engineering and sustainability perspective. The design objectives for such a surface discharge would include no net increase in total phosphorus to Lake Simcoe.</p> <p>The Township and CCTA plan to hold a second PIC at which they will present all options and the preliminary preferred solution.</p> <p>2. The legal status of the BVSU was discussed.</p> <p>Since what is being considered is a new municipal sewage treatment plant – as defined under the Lake Simcoe Protection Plan – the policy that would seem to apply is Policy 4.3 DP of the LSPP. That policy prohibits the establishment of a new municipal STP unless the STP is intended to replace an existing municipal STP or the STP will provide sewage services to a development on partial services or a development where one or more sub-surface sewage works or on-site sewage systems are failing.</p> <p>The spray irrigation sewage works, however, does not fit within the definition of “sub-surface sewage works” or “on-site sewage systems” as set out in the LSPP. Therefore Policy 4.3 DP would seem to prohibit the establishment of a new municipal STP (which would be permitting the discharge of sewage to surface water). Therefore to permit this undertaking to go ahead, two types of amendments could be made to the LSPP. Either an amendment could be made by the Provincial Cabinet (an amendment by the LGIC) to permit the undertaking to proceed (basically exempting it from the LSPP) – or alternatively, since the Minister is authorized to make minor amendments to the LSPP (see Policy 8.13 of the LSPP) – the Minister could issue a clarification to the LSPP making clear that Policy 4.3 applies to spray irrigation works such as this. Then the proponent would have to show that the spray irrigation system is “failing” as per the test in Policy 4.3 DP in order to be permitted to proceed with the undertaking</p> <p>Also discussed was that the proponent should also have to apply the test that the STP will result in no net increase of phosphorous loadings to the watershed (see Policy 4.4). This will be an additional test the municipality will have to meet on top of proving that the STP is failing.</p> <p>In addition, the consultant discussed allocating part of Lagoon City's STP phosphorus loading to this new STP – which MOECC will have to discuss internally.</p>	

Meeting Item	Action
<p>3. Options for pursuing a surface discharge were discussed.</p> <p>As described above, the MOECC advised the LSPP could potentially be amended to permit the construction of a new municipal STP.</p> <p>Alternatively, if a minor amendment is sought from the Minister, the Township would have to demonstrate the BVSU is a failing subsurface sewage works, thus permitting a new municipal STP under Policy 4.3.b.ii. However, the definition of a failing subsurface sewage works is not clear. The Township noted it is being proactive, through this Class EA study, in finding a solution to improve the BVSU effluent disposal system, which is nearing the end of its useful life, is not sustainable, and does not meet current MOECC guidelines for spray irrigation systems. Options to rejuvenate the soil are limited by the system's capacity, which is insufficient to take spray fields out of service for aeration/tilling.</p> <p>Another approach may be to share the Lagoon City STP allowed phosphorus loading. The Lagoon City STP, owned and operated by the Township, currently uses approximately a third of its TP allotment of 124 kg/year. A portion of the unused TP load could be allocated to the BVSU.</p> <p>The MOECC suggested the Township could implement short term or interim solutions to prevent runoff from the spray fields, such as working the fields to increase their absorption capacity, and hauling lagoon effluent to another STP.</p>	
<p>4. It was agreed the MOECC would discuss the surface discharge option and the reallocation of phosphorus loading internally, and CCTA would follow-up with Chris Hyde at the MOECC Barrie District Office.</p>	MOECC/ CCTA
<p>5. Errors & Omissions</p> <p>Please report any errors or omissions to the author within seven days of receipt of these minutes otherwise they will be deemed an accurate record of the meeting.</p>	All

Respectfully submitted,
C.C. Tatham & Associates Ltd.



Keith Shular, B.Sc., B.E.Sc., P.Eng.
 KES/ST:ha

Distribution
 All present
 Janice McKinnon, Township of Ramara
 Tim Collingwood, C.C. Tatham & Associates Ltd.

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