Seaside Waterfront Inc.

Seaside Wastewater Servicing
Port Glasgow, Municipality of West

Municipal Class Environmental Assessment
Integrated with the Planning Act

Environmental Study Report Update

January 16, 2020

Gary Blazak
Planning Consultant

MTE

Seaside Waterfronts Inc.

Seaside Wastewater Servicing Municipal Class Environmental Assessment

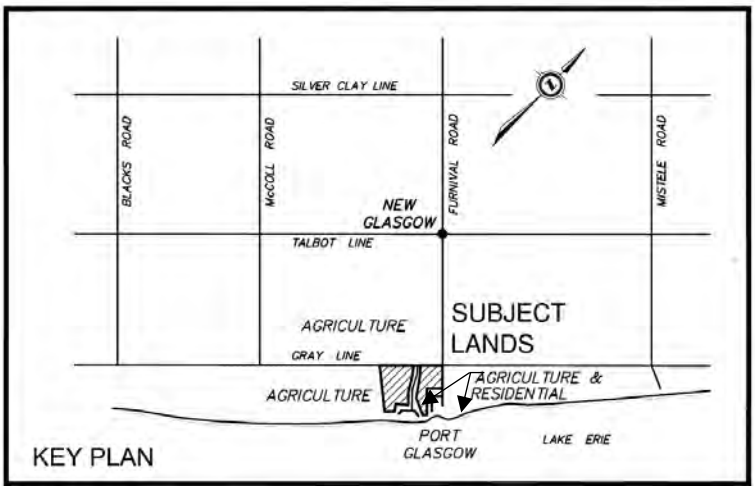
Integrated with the *Planning Act*

NOTICE OF COMPLETION

Seaside Waterfronts Inc. has completed a Municipal Class Environmental Assessment (EA) study of the wastewater services required to service the proposed Seaside development in Port Glasgow, Municipality of West Elgin. The study was completed following the integrated Municipal Class EA/*Planning Act* planning and design process for a Schedule 'C' project, as outlined in the Municipal Class EA (October 2000, as amended). The Draft Plan of Subdivision for the proposed Seaside development, currently before the County of Elgin for approval under the *Planning Act*, is the instrument being used to integrate the requirements of the Municipal Class EA and *Planning Act*.

As shown on the map, the preferred design of the wastewater services proposed to service Seaside include:

- A Wastewater Treatment Facility (WWTF) located in an enclosed building on a site in the southwest corner of the proposed Draft Plan;
- The preferred plant process option is a Membrane Bioreactor (MBR) with disinfection provided by UV radiation;
- Treated effluent from the WWTF will meet strict compliance criteria set by the Ministry of the Environment, Parks and Conservation (MECP); and
- Effluent will ultimately discharge to Sixteen Mile Creek via a constructed wetland for polishing and nutrient uptake.



An Environmental Study Report (ESR) has been prepared to document the decision-making process leading to the selection of the preferred design. The ESR is available for a 30-day public review period starting on **August 16th – September 14th, 2019** at the following locations:

Municipality of West Elgin	Rodney Public Library	Project Website
CAO/Clerk's Office 22413 Hoskins Line Rodney, ON 519-785-0560 Mon-Fri 8:30 a.m. to 4:30 p.m.	207 Furnival Road Rodney, ON 519-785-2100 Tues 2:00 to 8:00 p.m., Thurs 2:00 p.m. to 8:00 p.m., Fri 10:00 a.m. to 5:00 p.m., Sat 10:00 a.m. to noon.	http://mte85.com//Seaside-Environmental-Study-Report.htm

If you have any comments, questions or concerns regarding the information provided in the ESR, please contact one of the following team members:

Gary Blazak, MCIP, RPP

Planning Consultant

Tel: 519-639-1419

gblazak@rogers.com

David O'Gorman, PMP

Manager, Municipal

Tel: 519-204-6510

dogorman@mte85.com

If after consulting with one of these team members, you still have serious unresolved concerns, you may request the Minister of the Environment, Parks and Conservation (MECP) to issue a Part II Order (i.e., "bump-up") to change the status of the project to a full Individual EA. Any Part II Order request must be submitted to MECP by September 14th, 2019 using a standard form for a "Part II Order" available on the Government of Ontario Central Forms Repository website (http://www.forms.ssb.gov.on.ca). A copy of the completed form and any supporting information must also be sent to the Director of Environmental Assessment and Permissions Branch and Gary Blazak, Planning Consultant at the following addresses:

Minister Rod Phillips	Director, Environmental Approvals Branch	Gary Blazak
Ministry of the Environment, Parks and Conservation 77 Wellesley Street West 11th Floor Toronto, ON M7A 2T5	Ministry of the Environment, Parks and Conservation 135 St. Clair Avenue West 1st Floor Toronto, ON M4V 1P5	Planning Consultant Box 444, Lambeth Station London, ON N6P 1R1

If no request for a Part II Order is received, the proposed wastewater services will be considered to be approved under the *Environmental Assessment Act*. Following this, Seaside Waterfronts Inc. will continue to pursue the approval of the Draft Plan of Subdivision application under the *Planning Act*.

Information collected will be used in accordance with the *Freedom of Information and Protection of Privacy Act* and *Access to Information Act*. With the exception of personal information, all comments will become part of the public record.

This notice issued on August 08th, 2019

Contents

Figures

Tables

Appendices

1.0 Introduction

1.1 Background and Purpose of Report

The proposed Seaside development is located in the community of Port Glasgow on the shore of Lake Erie, Municipality of West Elgin, County of Elgin, as shown on **Figure 1.1**. Seaside Waterfronts Inc. ("the proponent") retained Gary Blazak, Planning Consultant, and MTE Consultants Inc. to complete a Class Environmental Assessment (EA) of the wastewater services, including sanitary sewage treatment and stormwater management (SWM) facilities, required to service the proposed development. Seaside consists of 24.7 hectares of proposed residential, commercial and mixed-use development, along with parks and open space.

Wastewater services required to service Seaside are being planned and designed in accordance with the Municipal Class Environmental Assessment (EA) (Municipal Engineers Association (MEA), October 2000, as amended in 2007, 2011 and 2015) approved under the Environmental Assessment Act (EAA). Following pre-consultation with the Ministry of the Environment, Conservation and Parks (MECP), the Ministry of Municipal Affairs and Housing (MMAH) and the County of Elgin, the Seaside Class EA followed the integrated Municipal Class EA/Planning Act approach, as outlined in Section A.2.9 of the Municipal Class EA.

The Seaside development conforms to the County of Elgin Official Plan and Port Glasgow Secondary Plan, part of the West Elgin Official Plan. "An appropriate level of services" is required for the development, consisting of "private communal sanitary sewage and SWM works planned and designed under the Municipal Class EA". The current Draft Plan of Subdivision includes 394 single detached and multiple residential units with a projected population of more than 800 people and 4,938 m2 of restaurant and commercial space, along with extensive open space and parks comprising about 45% of site. The development is described in more detail in Section 2.

The Environmental Study Report (ESR) documents the planning and decision-making process leading to the selection of the preferred designs of the wastewater facilities required to service the proposed Seaside development. Following the 30-day review period of the ESR from August 16 to September 14, 2019, the ESR was revised to address comments from MECP and the "One-Window" Review Agency team, as included in a letter dated September 27, 2019, to Seaside's consultants.

Figure 1.1 Site Location

1.2 Study Area

As shown on **Figure 1.2**, the Study Area for this Class EA includes the proposed Seaside development (Part Lot 6, Concession 14) and all lands potentially affected by the proposed sanitary sewage and SWM services.

Figure 1.2 Study Area

1.3 Seaside Project Team

Along with Gary Blazak, Planning Consultant, as the lead consultant, other members of the Seaside Project Team include MTE Consultants Inc. and BioLogic Incorporated, Aquatic and Terrestrial Ecosystem Planners, now part of MTE.

1.4 Integrated Class Environmental Assessment/Planning Act Process

The purpose of the EA Act is “the betterment of the people… of Ontario by providing for the protection, conservation and wise management… of the environment”. The Act broadly defines “environment” to include the natural, social, cultural, built and economic environments.

Municipal water, wastewater, road and transit projects must meet the requirements of the Municipal Class EA. The Class EA applies to a group or “class” of municipal infrastructure projects which occur frequently and have relatively minor and predictable impacts. These projects are approved under the EA Act, as long as they are planned, designed and constructed according to the requirements of the Class EA.

The specific requirements of the Municipal Class EA for a particular project depend on the type of project, its complexity and the significance of environmental impacts. Three categories of projects are identified in the document:

- Schedule 'A' projects are the least complex, usually consist of normal operational and maintenance activities and are pre-approved.
- Schedule 'B' projects are more complex, generally include minor expansions to existing facilities and are approved provided they follow Phases 1 and 2 of the Class EA process and are subject to an "environmental screening".
- Schedule 'C' projects are the most complex and consist of new facilities or major expansions to existing facilities. These projects must follow all five phases of the Class EA process and require the preparation of an ESR. Private sector developers, such as Seaside Developments Inc., proposing Schedule "C" projects must complete the Schedule "C" Class EA process.

Seaside's proposed wastewater services are classified as the following type of Schedule 'C' project in the Municipal Class EA document:

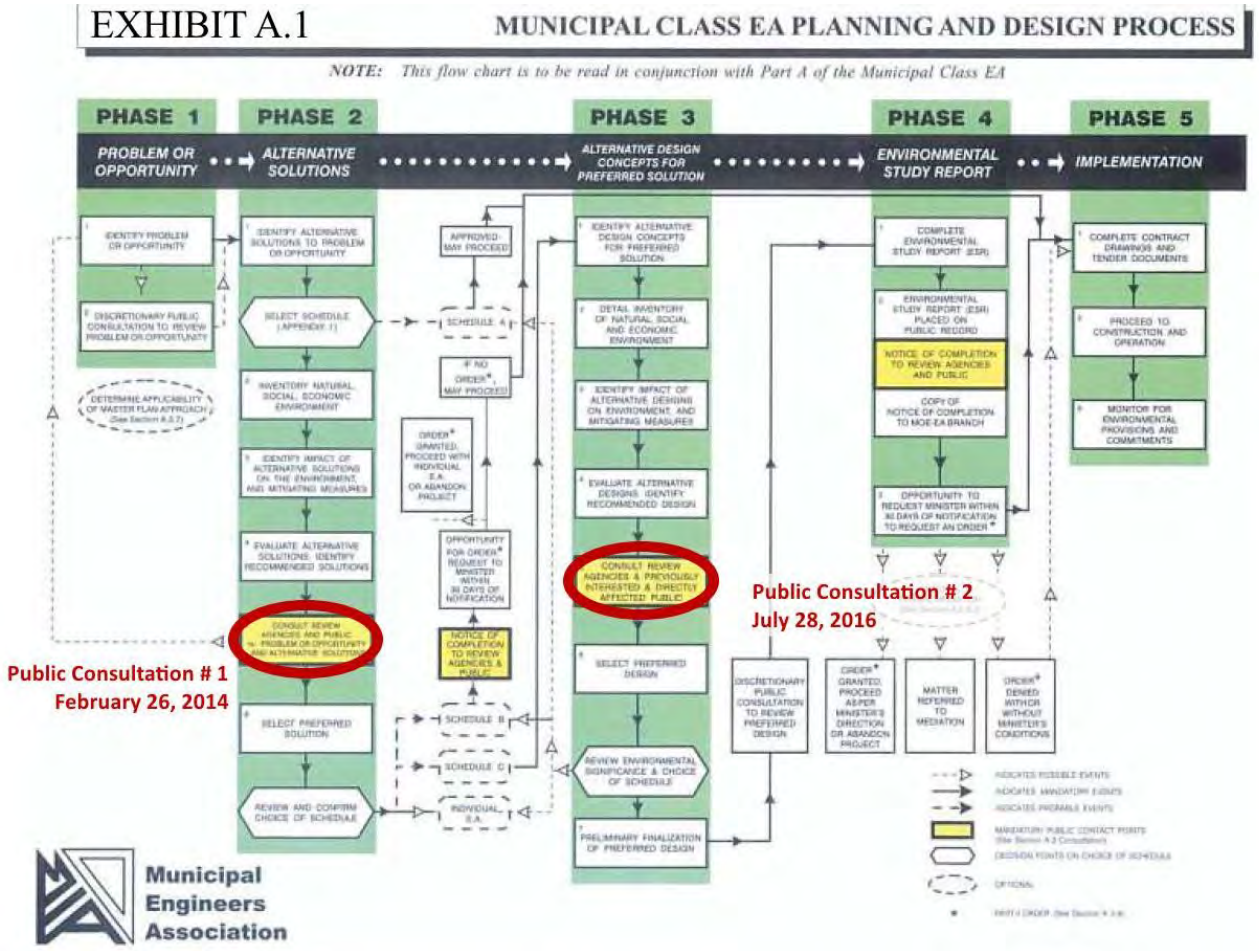
- "Construct new sewage system, including outfall to receiving body and/or a constructed wetland for treatment" (Appendix 1, Page 1-18, No. 1).

The Class EA defines "sewage" as "wastewater", including liquid waste which may be sanitary waste, combined sewage flows, drainage (or) stormwater…"

As documented in this ESR, the Seaside Class EA followed Phases 1 to 4 of the Class EA Planning and Design Process shown on **Figure 1.3:**

- Phase 1, "Problem/Opportunity Identification", included the preparation of a Problem/Opportunity Statement. Phase 1 is summarized in Section 3 of this ESR.
- Phase 2, "Alternative Solutions", consisted of the identification and evaluation of alternative solutions to the wastewater servicing problems and opportunities identified in Phase 1. Preferred solutions were chosen at the end of Phase 2, as outlined in Section 4 of this ESR.
- Phase 3, "Design Options", consisted of the identification and evaluation of design options to implement the preferred solutions. As summarized in Section 5 of this ESR, preferred designs for the proposed wastewater services were chosen at the end of Phase 3. Section 7 of the ESR describes the services in detail and includes a detailed impact assessment of the preferred design.
- Phase 4, "Environmental Study Report", consisted of the preparation of this ESR.
- Phase 5, "Implementation", will be completed in the future and consists of the preparation of detailed design drawings and contract documents and the construction of the proposed wastewater services, as outlined in Section 7. As required by the Municipal Class EA, the drawings and contract documents must incorporate all of the environmental and mitigation measures identified in this ESR to avoid/mitigate adverse impacts.

Figure 1.3 Municipal Class EA Process



As required by the Class EA, public and agency consultation, along with First Nations engagement, occurred throughout the process. Consultation undertaken for the project is outlined in Section 6 of this ESR.

Section A.2.9 of the Municipal Class EA describes the process for integrating Seaside's current Draft Plans of Subdivision and Condominium applications under the Planning Act with the planning and design of wastewater services for the development into one process under the Municipal Class EA. As explained in the Class EA document:

> *"There may be circumstances where a proponent (including private developers) may have a Planning Act application and Class EA requirements at the same time. For example, an application for a plan of subdivision may trigger the need for a new collector road. When this occurs, it may be desirable to consider the Planning Act and Class EA processes together in an integrated approach in order to avoid duplication and ensure improved environmental protection. This Class EA recognizes the desirability of coordinating or integrating the planning processes and approvals under the EA Act and the Planning Act, as long as the intent and requirements of both acts are met."*

The integrated approach offers proponents the opportunity to:

- Combine public/stakeholder notification and consultation requirements;
- Use common technical reports and analyses to support the Planning Act and Class EA processes; and
- Integrate land use planning and environmental protection decisions.

1.5 Proposed Stormwater and Wastewater Services

Preferred wastewater services for Seaside were identified at the end of Phase 3 of the Class EA process. As described in detail in Section 7 of this ESR, the proposed services include the following works:

SWM Facilities

Seaside will be serviced by Low Impact Development (LID) SWM measures, combined with decentralized SWM facilities for water quantity and quality and erosion control (Alternative 7) on the site's three sub-catchment areas:

- LID measures and extended detention ponds will be provided for the East Tablelands sub-catchment area (Design Concept 1B);
- For the Havens Lake Road sub-catchment, the existing drainage system will be upgraded. LID measures and oil/grit separators (OGS) will also be provided (Design Concept 2A); and
- LID measures, a stilling basin, level spreader outlet and constructed wetland will be provided for the West Tablelands on lands owned by the Municipality at Location 5B (Design Concept 3A) before ultimately being discharged to Sixteen Mile Creek.

Sanitary Sewage Treatment Facility

Seaside will be serviced by a centralized private communal wastewater treatment facility (WWTF) with surface water discharge to Sixteen Mile Creek (Alternative 4). The effluent quality proposed in conjunction with continuous surface water discharge to Sixteen Mile Creek meets or exceeds MECP "dry-ditch discharge" criteria. Effluent characteristics presented in this report, including both design objective and compliance criteria, were reviewed with MECP during pre-consultation. The facility will be located on Block 33 (designated for "Open Space, WWTF and Services") in the southwest corner of the proposed Draft Plan of Subdivision (Alternative Location 1). Sewage will flow to the WWTF by a conventional gravity sewage collection system.

A Membrane Bioreactor (MBR) was chosen as the preferred plant process option (Design Concept 2). Treated effluent from the WWTF will ultimately discharge to Sixteen Mile Creek via the constructed wetland (Location 5B) for polishing and nutrient uptake.

These facilities are subject to MECP approval under the Ontario Water Resources Act. The development of Seaside also remains subject to Draft Plan of Subdivision approvals under the Planning Act, along with subsequent site-specific zoning by-law amendments and Site Plan approval.

1.6 Background Planning Documents and Technical Studies

Appendix A includes a list of the planning documents and technical studies used to prepare the Seaside Class EA.

2.0 Environmental Inventory

2.1 Introduction

Section 2 of the ESR summarizes the environmental inventory prepared for the Study Area. As required by the Municipal Class EA, the inventory covers all existing and future environmental conditions potentially affected by the wastewater services proposed for the Seaside development, as shown on **Table 2.1.**

Table 2.1 MCEA Environmental Factors

MCEA Environmental Factors	
Water or Wastewater	• Existing water and/or wastewater systems • Future water and/or wastewater systems
Land-Use Planning Objectives	• Provincial • Regional • Municipal
Natural Environment/Natural Heritage Features	• Natural heritage policies • Fisheries and aquatic resources • Vegetation and Flora • Wildlife resources and linkages • Surface water • Ground water • Geotechnical • Fluvial geomorphology
Social Environment	• Existing communities • Existing residential areas • Recreational Facilities
Cultural Environment Heritage	• Archaeological resources / areas of archaeological potential • Built heritage resources and cultural heritage landscapes
First Nations/Aboriginal Peoples	• Lands • Treaty rights • Archaeological sites • Land Claims
Economic Environment	• Capital Cost (Seaside Context) • Net Impact to Development Viability (Seaside Context) • Phasing (Seaside Context)
Other	• Utilities

2.2 Community of Port Glasgow

Port Glasgow is located on the shore of Lake Erie at the mouth of Sixteen Mile Creek in the Municipality of West Elgin, County of Elgin. West Elgin's 2016 census population was 4,995. Access from Provincial Highway 401 (approximately 11 km to the north) is provided by Furnival Road (Elgin County Road 103).

Primarily a seasonal lakeshore residential and recreational area, Port Glasgow includes the following land uses:

- Extensive seasonal residential development, primarily located in two trailer parks: Lakewood Trailer Estates and the Port Glasgow Trailer Park located east of Furnival Road. The estimated seasonal population is 1,300
- Year-round residential development, consisting of single detached houses on Furnival Road and Douglas Line. The year-round population is estimated at 100
- The Port Glasgow Marina, located at the end of Havens Lake Road, provides 80 boat slips and boat launch facilities. It also has a snack bar, restroom facilities, day use picnic areas and access to trails for visitors
- Two public beaches are located in Port Glasgow, with access provided by Havens Lake Road.

Aside from the marina, there are no other commercial uses in Port Glasgow. In addition, there are no institutional uses, such as schools. Based on this, the Secondary Plan notes that the target demographic for Port Glasgow is "primarily comprised of mature family units" due to the lack of schools, shopping and other facilities which attract younger families and individuals.

Port Glasgow is serviced by the municipal water supply system with water supplied by the West Elgin Regional Water Supply System. Sanitary sewage collection and treatment is provided by septic tanks and tile beds. More details on municipal services are provided in Section 2.4.

2.3 Proposed Seaside Development

2.3.1 Draft Plans of Subdivision and Condominium Applications

The 24.7 hectare (ha) Seaside site is located on the west side of the existing community of Port Glasgow on Part Lot 6, Concession 14, Aldborough Ward. A significant portion of the site is forested and includes the valleylands of Sixteen Mile Creek. The proposed development is bordered by the shore of Lake Erie and the Port Glasgow Marina, Gray Line, Furnival Road and the valleylands of Sixteen Mile Creek.

Existing land uses on the site include cash crop agriculture and natural open space.

Draft Plans of Subdivision and Condominium applications were originally filed by Seaside Waterfronts Inc. with MMAH in April 2011. The applications notified MMAH of Seaside's intent to integrate the Municipal Class EA process with the Planning Act, using the Draft Plans as the Planning Act instruments for integration. The Seaside Draft Plan applications were subsequently circulated to other Provincial Ministries and external agencies for review and comment.

In November 2011, comments on the applications were received from the public, Provincial Ministries and external agencies, including the Ministry of the Environment (now MECP), Ministry of Natural Resources (now Ministry of Natural Resources and Forestry, MNRF), Ministry of Culture (now the Ministry of Tourism, Culture and Sport, MTCS) and the Lower

Thames Valley Conservation Authority (LTVCA). MMAH's November 2011 letter on the Draft Plan circulation is included in **Appendix B**. Concerns were raised about the impacts of the development, including wastewater servicing, on natural and cultural heritage features, including Species at Risk.

These concerns were subsequently addressed by planning and engineering studies prepared by Seaside, West Elgin's preparation of the Port Glasgow Secondary Plan and revisions made by Seaside to the design and phasing of the Draft Plan proposals.

In December 2015, a revised "block plan" of subdivision was submitted to the County of Elgin which had become the local approval authority under the Planning Act. This submission was followed by correspondence from the agent for Seaside Waterfronts Inc. (BLAST Inc.) in September 2017 requesting withdrawal of the draft plan applications 34-CD-11001 and 34-T-11002.

Following discussions between Elgin County and MECP, the two approval authorities for the Integrated Draft Plan/EA process, the County of Elgin accepted the revised "block plan" of subdivision application, and closed the earlier 2011 applications for Draft Plans of Subdivision and Condominium. The County of Elgin made this decision for the following reasons:

> *"An agreement respecting Havens Lake Road has been entered into with the Municipality of West Elgin, more details related to the types of dwelling units and yields within individual blocks as well as a phasing plan was provided by Sco-Terra Consulting Group Ltd. and discussed at a status meeting on August 29, 2017, and finally that the Ministry of the Environment and Climate Change has no objection to the proposed development project proceeding to Phase 4 of the Integrated Municipal Class Environmental Assessment - Planning Act Process."*

2.3.2 Municipality of West Elgin Official Plan Policies for Seaside

After the Draft Plan was circulated in 2011, the Municipality of West Elgin prepared the Port Glasgow Secondary Plan. The Secondary Plan provides a policy framework for the future development of Port Glasgow and Seaside.

The West Elgin Official Plan was approved in February 2011. The Seaside lands are part of an area designated "Port Glasgow Specific Policy Area" comprised of Lots 6 and 7 and Part Lot 8, Concession 14, Aldborough Ward. When the Official Plan was adopted by Council, the plan required that a Secondary Plan be prepared for any multi-lot development, such as Seaside.

Initiated in May 2012, the Secondary Plan was prepared with significant input from the public, Seaside Waterfronts Inc., the Port Glasgow Yacht Club, the Municipality, Provincial Ministries and other agencies. Four public meetings and a planning workshop generated more than 300 written submissions. The Secondary Plan was adopted by Municipal Council in March 2013 and approved by the OMB in August 2013. It was subsequently consolidated into the West Elgin Official Plan as Section 11.

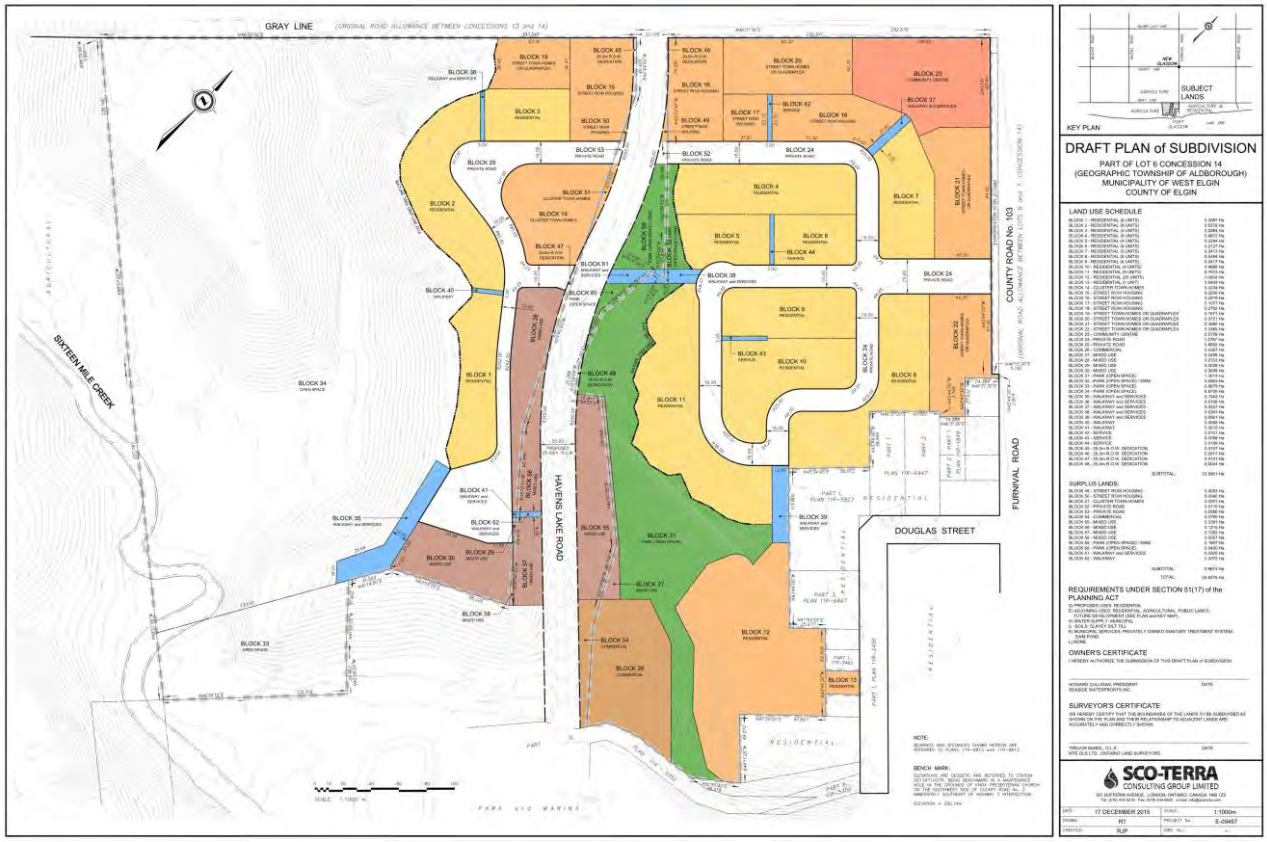
The West Elgin Official Plan and Port Glasgow Secondary Plan are described in more detail in Section 2.10.2 of this ESR. The design and phasing of the Seaside Draft Plan of Subdivision and Condominium applications were subsequently refined to reflect the policies of the Port Glasgow Secondary Plan.

2.3.3 Seaside Development Yield and Design Population

To conform to the policies of the Port Glasgow Secondary Plan, a revised Draft Plan of Subdivision application (File No. 34T-WE1501) was submitted to the County of Elgin (the approval authority under the Planning Act) in December 2015.

Based on “redline” revisions made to the applications in 2018, Seaside’s current Draft Plan of Subdivision application is shown on **Figure 2.1.**

Figure 2.1 Seaside Current Draft Plan Application



The following table shows the distribution of residential and commercial development, including the design population:

Table 2.2 Seaside Development Distribution - Residential Population and Commercial Uses

Seaside Development Distribution – Residential Population and Commercial Uses			
Location	**Residential**	**Density**	**Design Population**
Blocks 1 to 13	Single Detached	100 units @ 3 ppu	300
Blocks 14 to 22 and blocks 49 to 51	Quads / Townhouses	222 units @ 2 ppu	444
	Total	**322 units**	**744**
Location	**Commercial**	**GFA (Retail-Office)**	**Restaurant Uses**
Block 23	Community Centre	838 m^2	-
Blocks 27 to 30 and blocks 55 to 58	Mixed Use - HLR	3,600 m^2	300 Seats
Blocks 26 and 54	Commercial - HLR	500 m^2	150 Seats
	Total	**4,938 m^2**	**450 Seats**

2.3.4 Official Plan of the County of Elgin

The Seaside development has also been planned and designed to conform to the County of Elgin's Official Plan. Described in detail in Section 2.11.2, the County's first Official Plan was approved by MMAH with modifications on October 9, 2013.

2.4 Municipal Water and Wastewater Servicing Infrastructure

Existing development in Port Glasgow is serviced by the municipal water supply system with water supplied by the West Elgin Regional Water Supply System. The water treatment plant is located on Lake Erie, at Eagle, 8 kms. west of Port Glasgow.

Sanitary sewage collection and treatment services in Port Glasgow are provided by individual on-site sewage systems (septic tank and tile bed systems). The Rodney Wastewater Treatment Plant (WWTP) serving the community of Rodney, is the closest municipal treatment facility to Port Glasgow, located about 10 kms. north of Seaside. The Rodney WWTP is owned and operated by the Municipality of West Elgin. According to the plant's 2017 Annual Report, flows received at the plant averaged 348.1 m3/day, approximately 59% of the rated or approved treatment capacity according to the current Certificate of Approval (590 m3/d).

Based on 2017 recorded sewage flows, the plant has the capacity to treat an additional 241.9 m3/d. of sanitary sewage. However, this includes capacity allocated for future growth in Rodney.

The compliance criteria imposed by the Environmental Compliance Approval for effluent discharged from the Rodney WWTP is shown in the following table.

Table 2.3 Rodney WWTP Quality Criteria

Rodney WWTP Effluent Quality Criteria				
Parameter	**Effluent Objective Criteria**		**Effluent Limit Criteria**	
	Summer	**Winter**	**Summer**	**Winter**
$cBOD_5$ (mg/L)	5	10	10	15
Suspended Solids (mg/L)	5	10	10	15
Total Phosphorus (mg/L)	0.3	0.8	0.8	1.0
Ammonia Nitrogen (mg/L)	2	4	3	5
E. coli (CFU/100 ml)	<150 cfu/100ml		<200 cfu/100ml	

Section 8.4.3 of the West Elgin Official Plan indicates that the process of expanding the plant will be initiated when 90% of the rated capacity of a sewage treatment facility is reached. As a result, an additional 100 m3/d of sanitary sewage could be treated at the plant without initiating a plant expansion.

2.5 Physiography, Topography, Soils, Hazard Lands and Potential Erosion

Physiography and Topography

Bedrock geology in the area is grey limestone and shale from the Hamilton Group of the Middle Devonian age, located 54 metres below the tablelands and 32 metres below lake level (Golder, 2008). The bedrock aquifer is not critical to the natural heritage system of the Seaside lands since it is 20 metres or more below Sixteen Mile Creek.

Port Glasgow is located in the Bothwell Sand Plain physiographic region, a deltaic deposit of the Thames River in glacial Lake Warren, characterised by a thin surficial deposit of sand overlaying clayey soils with till deposits visible at the Lake Erie bluff (Chapman and Putnam, 1984). Glacial deep water lacustrine deposits of sand, silt and clay formed the tablelands surrounding the Seaside site, while the site itself and valley floor is modern alluvial deposits (Cooper and Baker, 1977, from LVM, 2012).

Regionally, the topography is complex with shorelines, ravines, gullies and tablelands (Shut, 1992). The Seaside site also has variable terrain, including steep slopes, more gently sloping tablelands and forested ravine slopes along the Sixteen Mile Creek valley. Havens Lake Road bisects the site with slopes and tablelands on both sides of the road. The site has substantial topographic relief in the order of 22 metres, with the highest contour elevation of 197.0 metres (geodetic) at the north limit of the property adjacent to the Gray Line. The lowest contour elevation of 175.0 metres is located near Sixteen Mile Creek.

Soils, Hazard Lands and Potential Erosion

A design-level geotechnical engineering investigation and report was completed by LVM in November 2012 to support the detailed engineering design of site grading, roadworks and site servicing for the Seaside development.

Twenty-two boreholes were advanced to depths ranging from 3.5 to 14.2 metres below ground surface (bgs). A soils particle analysis was conducted on 13 of the collected borehole samples. According to the report, most of the site is characterized by clayey silt/silty clay. The subsoil in the northern tableland portion of the site is characterized by silty sands overtopping clay, creating a perched aquifer. This same subsoil condition is reported on the west portion of the site, with groundwater encountered approximately 1.3 metre bgs. The subsoil conditions in the central portion of the site consist primarily of clay with no perched aquifer. The southern and eastern portions are characterized by alluvial deposits with silty clay, clayey silt and some sand.

In areas with low permeability soils near the ground surface, infiltration of significant volumes of stormwater or treated wastewater is not considered practical. These low permeability soils are considered too thick to be removed through site grading.

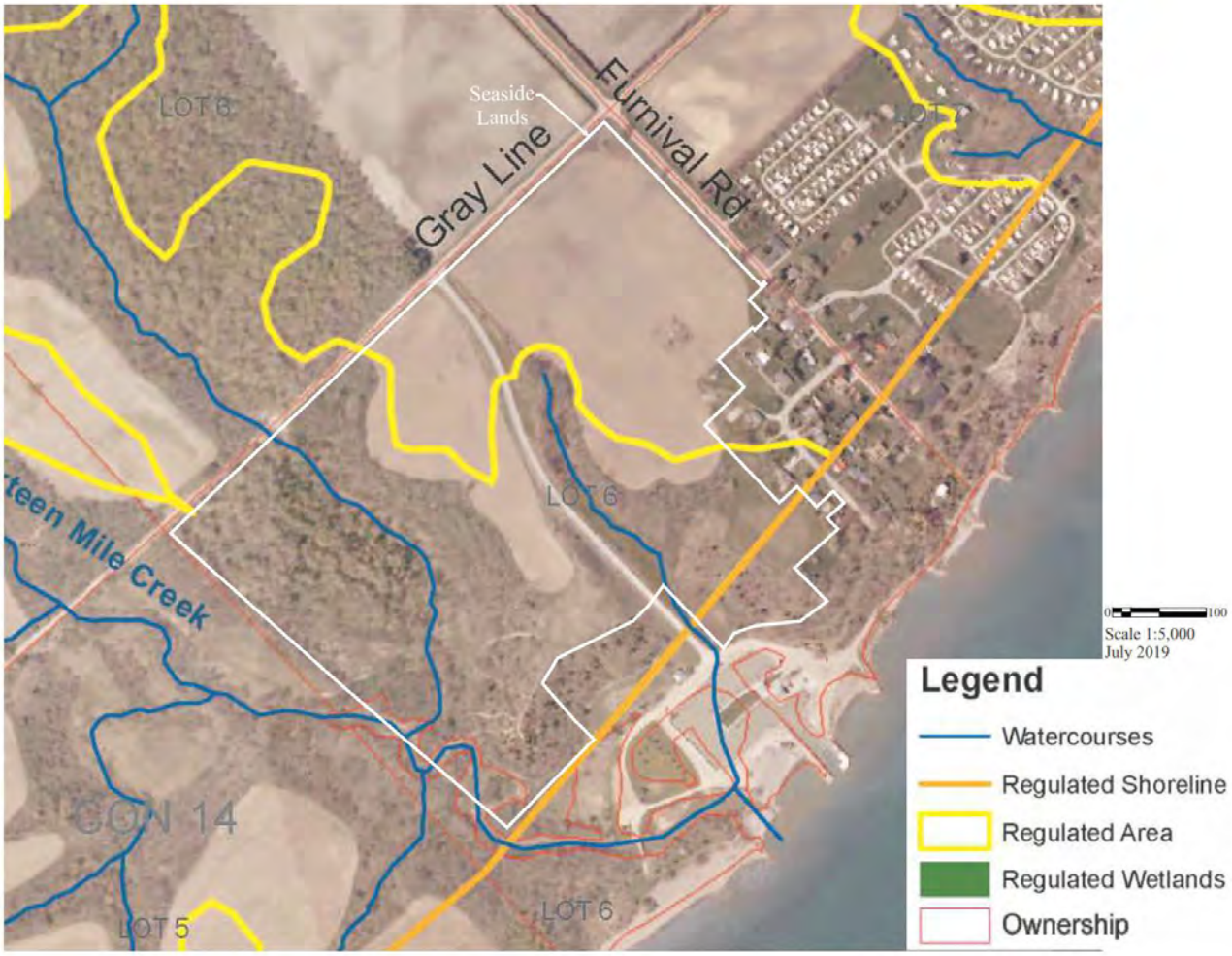
Surface water run-off is slow to moderate depending on the steepness of surface slopes. Soils are susceptible to both water and wind erosion (Shut, 1992). Surface water readily infiltrates the sands and collects on the clayey deposits below, resulting in gullies dissecting the sand plain near the Lake Erie shore line.

Lands regulated by the Lower Thames Valley Conservation Authority (LTCVA) are shown on **Figure 2.2**. "Hazard Lands", including lands subject to flooding and erosion, are located along the Sixteen Mile Creek valleylands, a tributary to Sixteen Mile Creek and the intermittent tributary east of Havens Lake Road. Lands along the Lake Erie shoreline are also part of the area regulated by LTVCA.

According to the Natural Heritage Information Centre (NHIC) website, naturally occurring ravine erosion is common along the creek. However, Golder Associates (2008) determined that erosion is minimal except at the "hairpin" turn of the creek. Based on this, LTCVA established a "critical" regulated distance of approximately 48 metres from the water's edge at the "hairpin" turn.

"Hazard Lands", regulated by LTCVA, are also located east of Havens Lake Road and include gullies in partially enclosed drainage systems. The steep Lake Erie shoreline slopes, east of Havens Lake Road, are also regulated by LTCVA. According to Golder (2008), the shoreline slopes within the Seaside lands are stable.

Figure 2.2 LTVCA Regulation Mapping



2.6 Groundwater, Surface Water and Drainage

Introduction

MECP and LTVCA databases provided background information on groundwater and surface water resources within the Study Area. This information was supplemented by design-level geotechnical and hydrogeological investigations and ongoing groundwater and surface water quality monitoring.

Groundwater

Although water is taken from a deeper aquifer, a surficial water bearing sand lens lies within the region. LVM's Hydrogeological Study Report (November 2012) did not identify a regional aquifer but did conclude that a perched aquifer exists near Gray Line and Furnival Road in the north and northeast portions of the Seaside site, created by a sand layer located on top of a poorly draining layer of silt and clay.

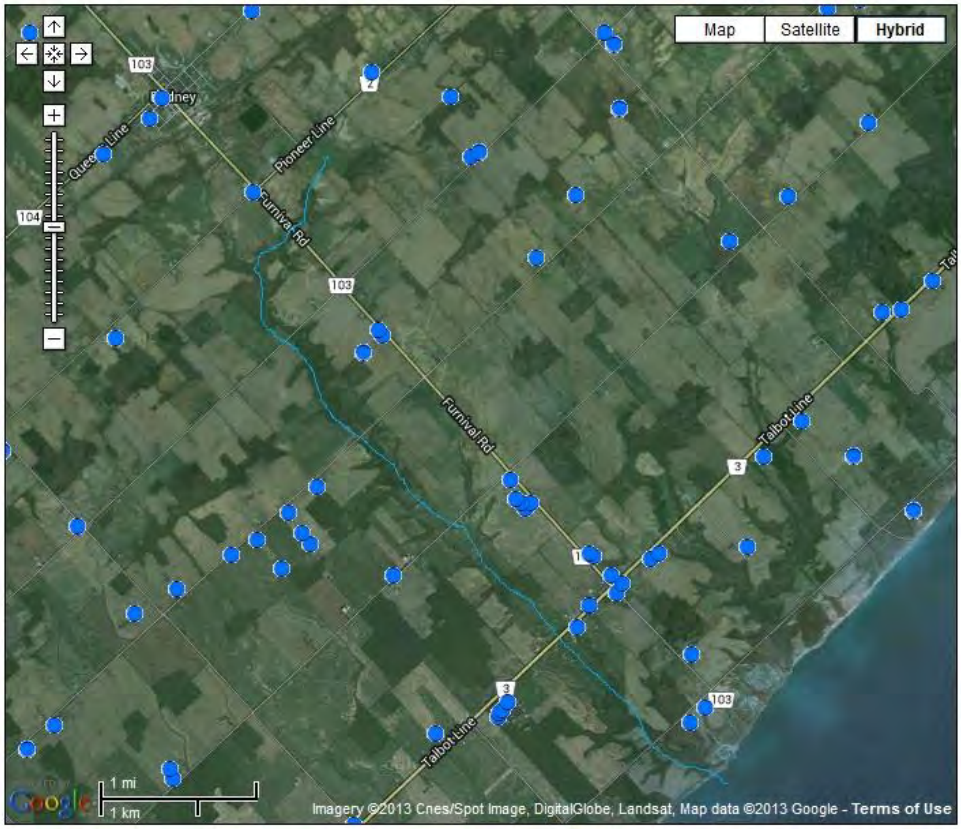
The LVM report made the following recommendations regarding development in areas with perched groundwater conditions:

- Since the routing of storm and sanitary sewers could create a hydraulic connection between groundwater regimes, concrete or clay collars are recommended for piping in areas susceptible to perched groundwater
- Silt and clay subsoil materials at the site have poor natural drainage with hydraulic conductivities below 10-6 m/s. Based on this, infiltration of large volumes of stormwater or treated wastewater are considered impractical. LVM recommended that subdrains connected to stormwater catchbasins be installed beneath low areas of pavement and other natural stormwater conduits to ensure sufficient drainage is achieved, thereby mitigating the risk of groundwater mounding
- Building basements will require perimeter weeping tile systems. Sumps will also likely be required in areas susceptible to perched groundwater conditions
- All subsurface structures should be designed to resist hydrostatic lift.

As shown on **Figure 2.3,** MECP's 2015 well record database indicated that several private wells are located near Sixteen Mile Creek but not in the vicinity of the Seaside lands. As mentioned, this area is supplied with municipal piped water.

According to LVM's 2012 report, the Seaside site and surrounding area are not significant groundwater recharge areas.

Figure 2.3 Private Groundwater Wells between Rodney and Port Glasgow



Surface Water and Drainage

As shown on **Figure 2.4,** the Seaside lands are located in the Lake Erie watershed. Stormwater runoff generated on the site drains to an intermittent watercourse east of Havens Lake Road, Sixteen Mile Creek or Lake Erie.

The tablelands east of Havens Lake Road, Havens Lake Road and a portion of the tablelands west of the road drain to a gully system and intermittent watercourse east of Havens Lake Road which outlets to the Port Glasgow Marina basin through a 1000mm diameter culvert. The storm drainage system east of Havens Lake Road consists of open channel (gullies) and enclosed storm sewer segments. This system also provides an outlet for the Douglas Line residential area located southeast of the Seaside lands. The Douglas Line Municipal Drain outlets to the intermittent watercourse. The drain is defined by a pronounced gully extending from the Havens Lake Road drainage system, easterly into the tablelands east of the road, along the east-west leg of Douglas Line.

The balance of the Seaside site, including the tablelands west of Havens Lake Road, drain to the Sixteen Mile Creek valley. The valley includes a forested ravine, valley flats and a riparian area located at the western boundary of the Seaside lands. Sixteen Mile Creek is a permanent watercourse and originates from the north near the community of Rodney, flowing south to its eventual outlet at Lake Erie, just west of the Port Glasgow Marina.

According to a review of MECP's interactive mapping showing Permits to Take Water (PTTW) in 2013, there were no surface water takings in proximity to the Seaside Lands, as shown on **Figure 2.4.**

Figure 2.4 Surface Water Features and Permits to Take Water

2.7 Surface Water Quality

Water quality data for Sixteen Mile Creek was obtained from MECP's Provincial Water Quality Monitoring Network (PWQMN), based on sampling conducted between 2007 and 2011 at Talbot Line, approximately 1.5 km upstream from the Seaside lands. The data is summarized in the following table:

Table 2.4 Background Water Quality, Sixteen Mile Creek, 2007-2011

Background Water Quality, Sixteen Mile Creek, 2007-2011			
Parameter	**Average Value**	**Maximum/Minimum Value**	**PWQO/CWQG**
NH_3	1.3 µg/L	6.3 µg/L / 0.0 µg/L	20 µg/L / 19 µg/L
Dissolved Oxygen	10.9 mg/L	16.43 mg/L / 2.39 mg/L	>5 – 8 / > 5.5 – 6.5
NO_3	3.5 mg/L	6.95 mg/L / 1.73 mg/L	ND / 13 mg/L
pH	8.34	10.8 / 6.9	6.5 – 8.5 / 6.5 - 9
Total Phosphorus, Unfiltered	64.3 µg/L	173 µg/L / 20 µg/L	30 µg/L[1]
1. Based on the interim PWQO limit for streams, which is provided for the purpose of limiting excessive plant growth.			

This data indicates that Sixteen Mile Creek is MECP Policy 1 for NH3 and MECP Policy 2 for total phosphorus, based on the background concentrations reported. All other parameters listed in **Table 2.4** meet PWQ Objectives (PWQO). As outlined in MECP policies, water quality shall be maintained at or above the PWQO in areas with water quality better than the PWQO (Policy 1). In Policy 2 areas with water quality that presently does not meet the objectives, water quality shall not be further degraded and all practical measures shall be undertaken to upgrade water quality to the objectives.

According to a report completed by Golder Associates (2008), agricultural tile drains within the tablelands east of Havens Lake Road convey stormwater to the adjacent gully system, which also provides an outlet for the Douglas Line Municipal Drain. These tile drains discharge to the shallow intermittent watercourse in the gully invert that flows along the east side of Havens Lake Road, south to the culvert outlet to the Port Glasgow Marina. These tile drains are degraded and potentially impact indirect fish habitat.

To supplement available historic data, water quality sampling was initiated in September 2013 to determine background levels of select contaminants within Sixteen Mile Creek, upstream and downstream of potential treated wastewater effluent discharge locations. **Figure 2.5** identifies the upstream and downstream sampling locations. Initial background water quality sampling results (September 2013) for Sixteen Mile Creek are shown in **Table 2.5.** As shown, background E. coli. levels exceeded PWQO values in 2013.

Table 2.5 Water Quality Sampling Results for Sixteen Mile Creek, 2013

Water Quality Sampling Results for Sixteen Mile Creek, 2013			
Parameter Analyzed	**Upstream of Potential Effluent Discharge**	**Downstream of Potential Effluent Discharge**	**Provincial Water Quality Objectives (PWQO)**
BOD_5	<4 mg/L	<4 mg/L	-
TSS	15 mg/L	8 mg/L	-
TP	<0.03 mg/L	<0.03 mg/L	<0.03 mg/L
TKN	1.0 mg/L	0.8 mg/L	-
TAN	<0.1 mg/L	<0.1 mg/L	<0.02 NH_3(1)
E. coli	210 cfu/100 mL	100 cfu/100 mL	<100 cfu/100 mL
Note 1. PWQO limit is for unionized ammonia which requires temperature and pH to calculate.			

Figure 2.5 Sampling Locations in Sixteen Mile Creek

2.8 Natural Heritage Resources

2.8.1 Introduction

Biologic Incorporated, Aquatic and Terrestrial Ecosystem Planners, prepared an Environmental Impact Study (EIS) of the proposed Seaside development in May 2015. The EIS was updated in March 2018 to address agency comments on the 2015 report, the revised Draft Plan and the Class EA planning and design process for the development's proposed wastewater services. **Appendix C** (available by a weblink) includes a copy of Biologic's March 2018 updated report.

2.8.2 Fisheries and Aquatic Resources

According to the NHIC website, Sixteen Mile Creek is classified as a permanent warm water system (LTVCA, 2009) with no aquatic species of significance within 1 km of the Seaside lands (July 2019). Based on fish community inventories completed for Sixteen Mile Creek by LTCVA in 2001, the Conservation Authority concluded that the creek supports a warm water fish community, tolerant or moderately tolerant to environmental change. All species reported are common, widespread and abundant throughout streams in southwestern Ontario. According to the NHIC (July 2019) and DFO mapping (July 2019), Sixteen Mile Creek does not provide habitat for aquatic species of significance, including fish and mussel Species at Risk.

The Tributary to Sixteen Mile Creek, as well as the drainage ravine located east of Havens Lake Road, flow intermittently and were not considered direct fish habitat. Indirect fish habitat is provided by a channel on the east side of the creek and the drainage outlet at the Lake Erie shorewall.

Biologic completed aquatic habitat assessments of Sixteen Mile Creek in May and June, 2009, covering the lower reaches and, for comparative purposes, the upper reaches near Pioneer Line.

In the lower reaches, the creek is 8 metres wide with pools, riffles and runs. The substrate varies with larger rocks, cobbles, gravels, sand and silt. In-stream habitat for fish is provided by an abundance of woody debris, eroding banks and deep pools. Emergent vegetation and riparian cover grow along the banks. Closer to Lake Erie, the creek is 10 to 15 metres wide and influenced by lake water levels.

Fish captured during the sampling included:

- Bluntnose Minnow *(Pimephales notatus);*
- Common Shiner *(Luxilus Cornutus);*
- Creek Chub *(Semotilus atromaculatus);*
- Rock Bass *(Amboplites rupestris);*
- Rosyface Siner *(Notropis rubellus);*
- Round Goby *(Neogobinus melanostomus);*
- Spottail Shiner *(Notropis hudsonius);* and
- White Sucker *(Catostomus commersoni).*

As mentioned, LTCVA classified Sixteen Mile Creek as a warmwater stream. However, the resident fish species are more representative of a cool water classification, along with water temperatures that reflect a coolwater thermal stability range. Based on this, Biologic concluded that the creek is a warm to coolwater watercourse with common fish species that can tolerate moderately perturbed habitat conditions.

Based on the aquatic assessment, Sixteen Mile Creek provides Provincially Significant fish habitat.

2.8.3 Terrestrial Resources

Provincially Significant Areas

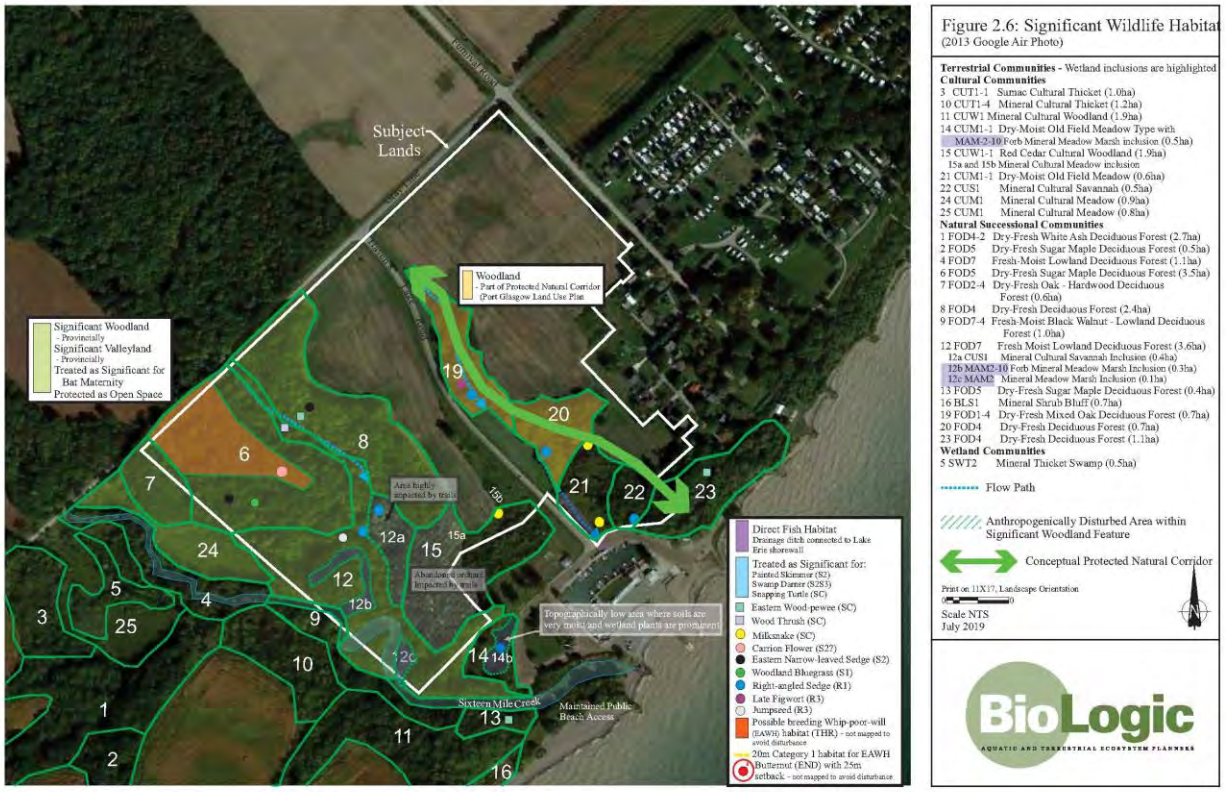
There are no Areas of Natural or Scientific (ANSIs) or Provincially Significant Wetlands (PSWs) on or adjacent to the Seaside development. The closest identified wetland community (not a PSW) is west of the site on the west side of Sixteen Mile Creek.

Provincially Significant Woodlands located on the Seaside lands are shown on **Figure 2.6** and include:

- Community 6, a dry-fresh sugar maple deciduous forest (3.5 ha) located in the northwest corner of Seaside. It is a mature community with good stand composition, including Sugar Maple and Beech dominating the canopy and subcanopy with Ironwood and Black Cherry in the understorey. Groundcover consists of False Spikenard. This community is not affected by the wastewater treatment facilities proposed in this Class EA.
- Community 8, a dry-fresh deciduous forest (2.4 ha), is a mixed forest community located west of Havens Lake Road on the valleyland slope. There is good stand composition with a varied canopy composition of Black Walnut, Sugar Maple and Bitternut Hickory. The groundlayer is dominated by False Spikenard, Blue Cohosh and Wild Ginger. This community is not affected by the proposed wastewater facilities.
- Community 12, a fresh-moist lowland deciduous forest (3.6 ha), located along Sixteen Mile Creek, is disturbed and was historically used for agriculture. A portion of this community will be temporarily impacted by construction of the proposed WWTF site and SWM facilities:
    - The community is dominated by Basswood with Bitternut Hickory and Black Walnut, collectively comprising 90% of the canopy. Common species in the understorey and ground layer are Multiflora Rose, Riverbank Grape, Staghorn Sumac, Starry False Solomon-seal, Meadow Rue and Swamp Agrimony. None of these species are wetland plants.
    - Community 12 has been disturbed by numerous recreational trails located throughout the creek valley. The low-lying portions of the site include a pocket of Common Reed Grass (*Phragmites)* and a small area heavily disturbed by exposed soils, erosion and tire ruts.
    - The community also includes small wetland inclusions, including Community 12a, a mineral cultural savannah, (0.4 ha), Community 12b, a forb mineral meadow marsh (0.3 ha), and Community 12c, a mineral meadow marsh (0.1 ha). The canopy cover of Community 12a is dominated by young Black Walnut and Basswood with some Black Locust. Some wetland plants are present but the groundlayer is dominated by upland species. Communities 12b and 12c are small inclusion wetland pockets formed by topographic lows and surface run-off to the creek.

The Sixteen Mile Creek Valleyland is a Provincially Significant Valleyland and provides linkage functions throughout the Municipality of West Elgin.

Figure 2.6 Provincially Significant Wildlife Habitat



All three forest communities are designated as “Woodlands” in the Port Glasgow Secondary Plan, while the ravine on the east side of Havens Lake Road is designated as a “Protected Natural Corridor”. The Sixteen Mile Creek valleylands are designated as “Open Space” and “Hazardous Lands”.

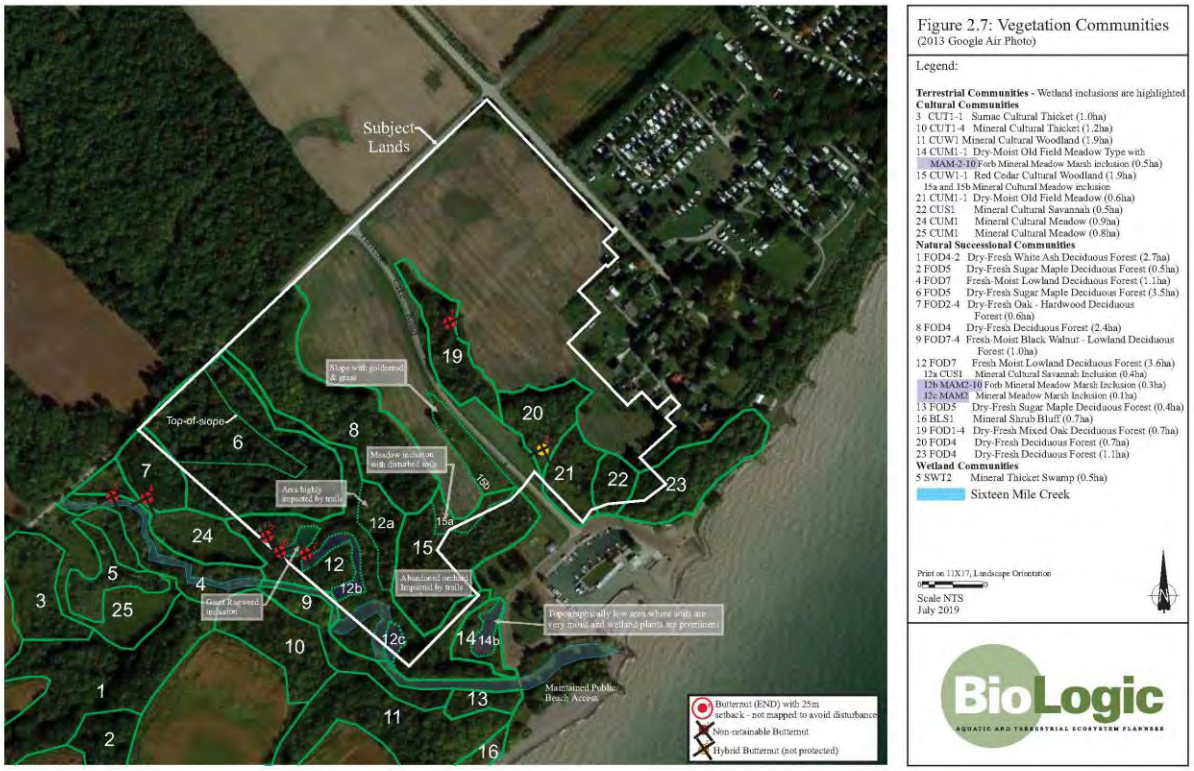
Vegetation Communities

As shown on **Figure 2.7**, vegetation communities on the Seaside lands and surrounding area were classified according to the Ecological Land Classification (ELC) system for Ontario (Lee et al, 1998). Biologic identified 23 different ELC communities, including eight cultural communities, 13 natural successional communities and one wetland located west of the Seaside lands.

Part of the Seaside lands are located in the Southwest Elgin Forest Complex. An important component of the complex is Sixteen Mile Creek which bisects the Lake Erie shorecliff. A woodlot adjacent to Gray Line was historically Hickory dominated but is now dominated by Sugar Maple.

The Seaside lands have historically been actively farmed with tillage and cattle grazing throughout the valley, in some places extending to the limits of the creek. Much of the existing plant community has resulted from the abandonment of active agricultural activities, with native early successional species like Staghorn Sumac, Juniper and Black Walnut. Openings in the forest canopy, particularly in the bottom lands, also reflect this past use.

Figure 2.7 Vegetation Communities



Vegetation communities potentially affected by the proposed wastewater facilities in the southwestern portion of Seaside include the following:

- Community 14 is a cultural community consisting of a dry-moist old field meadow with a forb mineral meadow marsh (14b, 0.5 ha). The community is located on lands owned by the Municipality and is part of a wetland constructed by West Elgin for fish habitat compensation. The marsh receives overland flow from the Port Glasgow Marina parking lot and includes a small concentration of wetland plants. Other vegetation consists of two types of Goldenrod, Multiflora Rose, Black Raspberry and a few Cottonwoods. Since less than 50% of the plants are not listed as wetland or wetland indicators, Biologic concluded that the main patch is not a "wetland" as defined by MNRF. This community will be affected by the constructed wetland proposed as part of the preferred SWM and WWTF design for Seaside.
- Community 15 is a red cedar cultural woodland (1.9 ha) located in an abandoned orchard colonized by Red Cedar. The proposed WWTF site is located on Community 15. This community is heavily impacted by recreational trails leading from the table land to the creek. Two mineral cultural meadow inclusions (15a and 15b) with disturbed soils are located on the northerly portions of the community.

Flora

According to NHIC (2013), six Provincially significant floral species or their habitat may be found within I km of the Seaside lands. These include Butternut *(Juglans cinerea)* [Endangered], Eastern Flowering Dogwood *(Cornus florida*) [Endangered], Southern Slender Ladies' Tresses *(Spiranthes gracilis),* Brainerd's Hawthorn (*Crataegus brainerdii),* Yellow Ladies' tresses *(Spiranthes ochroleuca*) and Scarlet Beebalm (*Monarda didyma).*

The updated NHIC (July 2019) lists only Butternut, Brainerd's Hawthorn and Scarlet Beebalm. Of these species, only Butternut was found on the Seaside lands.

Plants present on the Seaside lands are part of a successional community resulting from abandoned agricultural activity. Three season floral inventories were completed in 2008 and updated in June 2013. Other site investigations were:

- Butternut Health Assessments completed in 2010 and 2014;
- Floral inventory update in Community 14 in July 2014; and
- Survey to confirm presence/absence of regionally rare plants in August 2014.

Floral inventories completed in 2008 identified eight Butternut, an Endangered species. During the health assessments, one tree was identified as a hybrid (not protected by the *Endangered Species Act*), while six native trees were all deemed non-retainable due to the butternut canker infection. One in Community 8 was deemed to be retainable.

Inventories completed in 2013 noted the following Provincially S-Ranked floral species of conservation concern:

- Carrion Flower (*Smilax illinoensis*) (S2?) in Community 6;
- Eastern Narrow-leaved Sedge (*Curex amphibola)* (S2) in Communities 6 and 8; and
- Woodland Bluegrass (*Poa sylvestris*) (S1) in Community 6.

Three regionally rare plants were also found, including:

- Jumpseed (*Polygonum virginianum*) in Community 12 (ranking of R3);
- Late Figwort (*Scrophularia marillandica*) in Community 19 (S4, R3); and
- Right-angled Sedge (*Carex normalis*) in Communities 12, 14, 19, 20 and 22 (S4, R1).

Candidate Significant Wildlife and Habitat

Biologic identified candidate significant wildlife habitat (SWH) using vegetation classifications from the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015) supplemented by field investigations. Candidate SWH for the vegetation communities potentially affected by the proposed wastewater facilities (Communities 12, 14 and 15) are shown on the following table.

Table 2.6 Candidate Significant Wildlife Habitat in Vegetation Communities 12, 14 and 15

Vegetation Community Trigger	Candidate SWH
FOD, Forest Community 12	Raptor Wintering, Bat Maternity, Migratory Butterfly, Landbird Migratory Stopover, Deer Wintering Congregation, Bald Eagle & Osprey, Amphibian Breeding – Wetland, Woodland Area Sensitive Bird
CUM, Cultural Meadow Community 14	Migratory Butterfly, Green Heron
CUW, Cultural Woodland Community 15	Raptor Wintering, Shrub/Early Successional Bird
Any Ecosite	Snake Hibernaculum, Special Concern and Rare Species

As shown on **Table 2.7,** there are six provincially significant wildlife species that may be found within 1 km of the Seaside lands (NHIC website, 2013). No new species have been added to the NHIC list since 2013 (NHIC website, 2019).

Table 2.7 Provincially Significant Species Within 1 km of Seaside, (NHIC, 2013)

Species	Common & Scientific Name	S-Rank	Federal/Provincial Listing
Birds			
Acadian Flycatcher	*Empodonax virescens*	S2S3	Endangered/Endangered
Cerulean Warbler	*Dendroica cerulean*	S3B	Endangered/Special Concern
Henslow's Sparrow	*Ammodrammas henslowii*	SHB	Endangered/Endangered
Mammals			
American Badger	*Taxidea taxus*	S2	Endangered/Endangered
Woodland Vole	*Microtus pinetorum*	S3?	Special Concern/Special Concern
Reptiles			
Eastern Ribbonsnake	*Thamnophis sauritus*	S3	Special Concern/Special Concern

S-Ranks

S2- Very rare in Ontario usually between 6 and 20 occurrences in the Province, or few remaining hectares

S3 – Rare to uncommon in Ontario; usually between 21and 80 occurrences in the Province; may have fewer occurrences, but with some extensive examples remaining

S4 – Considered to be common and apparently secure in Ontario with over 80 occurrences in the Province

S2S3 – Indicates that an element is rare, but insufficient information exists to accurately assign a single rank

SHB – Indicates that the species is of a hybrid origin

Preliminary screening by MNR of known occurrences of Species at Risk, protected under the *Endangered Species Act* (2007) identified the following additional species:

Table 2.8 Known Occurrences of Species at Risk near Seaside (MNRF, 2011) (Transferred to MECP in 2019)

Species	Common & Scientific Name	S-Rank	Federal/Provincial Listing
Birds			
Chimney Swift	*Chaetura pelagica*	S4B, S4N	Endangered/Threatened
Bobolink	*Dolichonyx oryzivorous*	S4B	Threatened/Threatened
Reptiles			
Eastern Foxsnake	*Pantherophis gloydii*	S3	Endangered/Endangered
Milksnake	*Lampropeltis triangulum*	S3	No Federal listing, Provincial - Special Concern
Amphibians			
Fowlers Toad	*Anaxyrus fowleri*	S2	Endangered/Endangered

S-Ranks

S2- Very rare in Ontario usually between 6 and 20 occurrences in the Province, or few remaining hectares

S3 – Rare to uncommon in Ontario; usually between 21 and 80 occurrences in the Province; may have fewer occurrences, but with some extensive examples remaining

S4 – Considered to be common and apparently secure in Ontario with over 80 occurrences in the Province

S2S3 – Indicates that an element is rare, but insufficient information exists to accurately assign a single rank

SHB – Indicates that the species is of a hybrid origin

Birds

Breeding bird surveys were completed in 2008 and 2013 to identify all bird species potentially affected by the development of Seaside. Candidate Significant Wildlife habitat for birds, Provincially Significant bird species and known occurrences of Species at Risk birds are shown on **Tables 2.6, 2.7 and 2.8**. Also considered, were species listed as "Area Sensitive" by MNRF in 2012 (the responsibility for the ESA was transferred from MNRF to MECP in 2019). Based on the Natural Heritage Reference Manual (MNRF, 2010), Biologic concluded that the Seaside lands do not provide breeding habitat for the following species due to a lack of suitable habitat:

- Acadian Flycatcher, Cerulean Warble and Henslow's Sparrow were listed by the NHIC (2013) (the responsibility for the ESA was transferred from MNRF to MECP in 2019) as species that may be found within 1km2. None of these species were observed during breeding bird surveys in 2008 and 2013. No new species have been added to the NHIC list since 2013 (NHIC website 2019).

- A Chimney Swift (Threatened) was observed during the 2008 survey. Since it was only foraging on the forested slope on the east side of Sixteen Mile Creek, it was considered to be a migrant/visitor.
- A Red-headed Woodpecker (Threatened) was observed foraging during the 2008 survey. It was also considered to be a migrant/visitor.
- A Rusty Blackbird (Special Concern) was also observed as a migrant during the 2008 survey with no suitable habitat.
- For raptor wintering, Biologic concluded that the Seaside lands do not provide enough open country foraging habitat.
- No Bald Eagles and Osprey or nests were observed during the surveys.
- A waterfowl stopover and staging survey was completed in April 2014. Bonaparte's Gulls were noted, along with flocks of Common Merganser flying over. However, the Lake Erie shoreline at Port Glasgow is not considered to be a significant stopover and staging area because Port Glasgow is not considered to be significant for waterfowl and the number of birds observed was low (approximately 30).
- A landbird migratory stopover survey was completed in April 2014. Migratory landbirds noted during the survey were small numbers of Carolina Wren, Yellow-rumped Warbler and Golden-crowned Kinglet. These small numbers do not meet the threshold for a significant stopover site (more than 200 birds a day and more than 35 species).
- A Pileated Woodpecker (listed as Area Sensitive by MNRF in 2015) was observed during the 2013 breeding bird survey in Community 8. This bird was considered to be a "visitor" that likely breeds in the area but not on-site due to a lack of suitable habitat.
- A Scarlet Tanager (listed as Area Sensitive by MNRF in 2015) was also observed in Community 8 during 2013 as a "possible breeder" since it was observed in potential habitat. However, this could not be confirmed. Species use by area sensitive birds does not meet the threshold of significance established by MNRF (nesting or breeding birds of three or more listed species).

During follow-up investigations for amphibian monitoring in 2015, an Eastern Whip-poor-will (*Caprimulgus vociferous*, Threatened) was heard in a closed canopy forested area of Community 6 during the migratory time. Since this species' preferred habitat is rock or sand barrens with scattered trees, savannahs and open conifer plantations with eggs laid directly on the leaf litter, the Community 6 forest could not be confirmed as a nesting location. It is more likely that the tableland area of Community 6, as shown on Figure 2.7, provides nesting habitat for Whip-poor-will. Based on this, this area is considered to be significant wildlife habitat for Whip-poor-will.

Partners in Flight is an international organization dedicated to conserving land birds in the Americas. Biologic's 2013 bird survey identified six bird species likely breeding on or nearby the Seaside lands that are included in the Partners in Flight Ontario Landbird Conservation Plan (2006). These species included four woodland birds, including Baltimore Oriole, Northern Flicker, Eastern Wood-Pewee and Rose-breasted Grosbeak, and two shrub/successional species, including Eastern Towhee and Field Sparrow, both common species. Eastern Towhee was observed as a possible breeder in Community 12, a fresh-moist lowland deciduous forest and Community 15, a red cedar cultural woodland. Small portions of these two communities will be temporarily impacted by construction of the proposed wastewater services.

In addition to the protection provided by the Federal and the Ontario Species at Risk legislation, all of the species of migratory birds identified during the surveys are protected by the Federal *Migratory Bird Convention Act.* The regulations under the Act prohibit the harmful alteration, destruction or disruption of migratory bird breeding habitat, nests, eggs and young. Non-migratory wild birds are protected by the Ontario *Fish and Wildlife Conservation Act and Regulations*.

Mammals

The Seaside lands are not suitable for significant deer wintering congregation since more than 50 ha of land is required.

American Badger (Endangered) has the potential to be found on the Seaside lands. An animal burrow investigation completed in January 2012, followed up by more detailed investigations in November and December 2012 and monitoring in January 2013, found only skunk burrows with no badger use. Based on this, there are no American Badger burrows on the Seaside lands.

Woodland Vole, a Species of Special Concern, also has potential to be found on the Seaside lands. This species requires mature deciduous forests with a deep litter layer. Although the tree species favoured by this vole (oak, maple and beech) are present on the Seaside lands, the sloped woodlands do not provide the required duff layer.

Bats

Vegetation Communities 6, 8 and parts of 12 include forested communities with mature trees and occasional standing snags (a standing, dead or dying tree) providing potential habitat for Bat Maternity Colonies. However, there are not enough mature trees or snags in the disturbed portions of Communities 12a and 15. Although Community 19 on the east side of Havens Lake Road has standing snags, the community is not large enough to be considered as Significant Wildlife Habitat for Bat Maternity Colonies. For SAR bats, bat acoustic monitoring in the small forested communities east of Havens Lake Road determined that there were no SAR bat maternity roosts. Based on these considerations, no impacts on Bat Maternity Colonies are expected.

Turtles

Although turtles were not observed during the wildlife surveys, the riparian habitat of Sixteen Mile Creek likely provides ideal habitat for Snapping Turtle (*Chelydra serpentina),* a species of Special Concern. Based on this, it was concluded that Sixteen Mile Creek provides significant wildlife habitat for Snapping Turtle (Special Concern).

Snakes

Potential snake hibernaculum exists throughout Seaside. In addition, Eastern Ribbonsnake (Special Concern) has been observed within 1 km of the site and there are known occurrences of Eastern Foxsnake (Endangered) and Milksnake (Special Concern) near Seaside.

No favourable structures for snake hibernaculum (rock piles, stone fences or crumbling foundations) were found on the Seaside lands. In addition, no burrows were found in the Sixteen Mile Creek valley. Although rock gabions along the drainage feature on the east side of Havens Lake Road is suitable, no congregation of snakes was found.

Biologic made 23 site visits for a snake board study completed from May to October, 2012. The following is a summary of the study:

- Eastern Gartersnake, Brownsnake and Milksnake (Special Concern) were found;
- The area where Milksnake was found did not have favourable habitat for anything except foraging;
- None of the species targeted for the survey, including Eastern Foxsnake and Gray Ratsnake, both Endangered, were found. Since Eastern Foxsnake has the same preferences as Milksnake for mammalian prey and open and semi-open habitats, the coverboards should have successfully attracted Eastern Foxsnake; and
- Biologic concluded that there is no resident population of Eastern Foxsnake on the Seaside lands and the individual known to have occurred nearby in 2011 was a vagrant.

Based on these considerations, Biologic concluded that the Seaside lands provide foraging habitat for Milksnake, a species of Special Concern.

Amphibians

Amphibian monitoring was undertaken in April and May 2013, followed up in April 2015.

The small wetland inclusions on the Seaside site (Communities 12b and 14a) and the Sixteen Mile Creek mouth and valley have small numbers of amphibians, including one Western Chorus Frog in Community 14a, one or two Spring Peepers in the drainage swale from the parking lot and five American Toads on the riverbank at the creek mouth. Thirty American Toads were found along the creek bank toward Gray Line, with no other species noted.

Since the species abundance does not meet the threshold of significance of at least 20 individuals from two or more listed species, the Seaside lands are not considered to be significant wildlife habitat for amphibians.

Butterflies

One Monarch Butterfly (listed as a species of Special Concern) was observed in 2008 on the flats west of Sixteen Mile (outside the Seaside lands). None were observed in 2013, possibly due to cool temperatures during the late spring. Since there are only strips of asters and goldenrods at the edges of woodlands and farm fields, Seaside likely does not provide suitable habitat for Monarch Butterfly.

Although the total area of woodland and fields on the Seaside lands exceeds the Provincial threshold of 10 ha, the wooded portion where Monarchs might roost far exceeds the field portion where Monarchs might stop to feed before continuing migrating. Based on the small amount of feeding habitat, the Seaside lands do not provide significant wildlife habitat for migrating Monarchs or other types of butterflies.

Dragonflies

Two types of Provincially S-ranked (Conservation Status Rank) dragonfly species were observed during the 2008 survey, including Painted Skimmer and Swamp Darner, but not observed in 2013 likely due to cool late spring temperatures. Since Sixteen Mile Creek is likely used for breeding, it is considered to be significant wildlife habitat for S-ranked dragonflies.

2.8.4 Summary of Significant Natural Heritage Features and Species at Risk

Figure 2.6 shows the following significant natural heritage features and Species at Risk and their habitat on the Seaside lands:

- Sixteen Mile Creek provides Provincially Significant Fish Habitat;
- Provincially Significant Woodlands (Communities 6, 8 and 12);
- Sixteen Mile Creek is a Provincially Significant Valleyland;
- Butternut (Endangered) and habitat;
- Carrion Flower, Eastern Narrow-leaved Sedge and Woodland Bluegrass and habitats, all Provincially S-Ranked species;
- Potential Whip-poor-will (Threatened) habitat;
- Snapping Turtle habitat, a species of Special Concern;
- Foraging habitat for Milksnake, a species of Special Concern; and
- Habitat for Provincially S-Ranked dragonflies.

In 2016, Biologic completed an Information Gathering Form (IGF) under the Ontario *Endangered Species Act.* The intent of the form is to assist MECP to determine if a proposed activity is likely to contravene that Act's provisions protecting Species at Risk and their habitat.

2.9 Cultural Heritage Resources

Seaside retained Mayer Heritage Consultants Inc. to undertake Archaeological Assessments of the Seaside development and lands affected by the proposed wastewater facilities. Prepared in 2007, 2009, 2011 and 2013, the reports completed by Mayer are listed in **Appendix A.** The assessments cover Stages 1 to 4 of the archaeological assessment process and were prepared according to Provincial standards of the time and the Ministry of Tourism and Culture's (now MTCS) Standards and Guidelines for Consultant Archaeologists, (2011), consisting of "best practices for consulting archaeologists".

A Stage 1 Archaeological Assessment consists of background research and a "windshield" survey to determine existing registered archaeological sites and lands with moderate and high archaeological potential, requiring further, more detailed archaeological assessments prior to construction.

According to the Stage 1 research:

- the woodlands and steep ravines along Sixteen Mile Creek and Havens Lake Road have low archaeological potential due to steep topography. These areas, including the site of the proposed wastewater facilities, were not surveyed. No further archaeological assessments of these areas are required.
- The remainder of the Seaside lands have high potential for the discovery of pre-contact Aboriginal and Euro-Canadian archaeological resources based on several factors. These include the presence of existing registered archaeological sites located nearby, the presence of Lake Erie and permanent/seasonal streams for food and water supplies and the suitability of soils for human settlement. Also, the Seaside lands are located one concession south of the historic Talbot Road (Highway 3).

A Stage 2 assessment is a field examination of areas with high archaeological potential and involves surface survey of ploughed fields or shovel testing at regular intervals in areas that are undisturbed. Many findspots were found on the Seaside lands during the Stage 2 assessment.

Stage 3 testing was recommended for almost all of the findspots identified during Stage 2. A Stage 3 assessment consists of testing to determine the dimensions of a site, its cultural affiliation and significance.

During the Stage 3 investigations, eight archaeological sites were identified throughout the property containing pre-contact Aboriginal artifacts and features, some of an unknown age and cultural affiliation and some from the Early Woodland period (1000 to 400 B.C.), possibly with an Early Archaic (7800 to 6000 B.C.) component. Stage 4 assessments were recommended for the eight sites. Stage 4 assessments involve the mitigation of impacts on the site, by either excavation or avoidance (preservation). Mayer completed Stage 4 assessments of four of the sites, as documented in a report dated February 26, 2014, submitted to MTCS.

As outlined in a letter dated August 9, 2016, MTCS reviewed and entered Mayer's report on the Stage 4 assessments into the Ontario Public Register of Archaeological Reports. The Ministry concluded that no further archaeological investigations are required for the four sites. The Ministry's letter stated that Stage 4 assessments are required for the four remaining sites and included recommendations for the methodologies to be used, along with the requirement for a Native monitor. These assessments will be completed as a condition of the final approval of Seaside's Draft Plan of Subdivision and Condominium applications.

As noted, the site of the proposed wastewater facilities has low archaeological potential. As a result, no further archaeological assessments of the facilities are required.

Mayer's reports noted that, as with all lands across Ontario, it is possible that Aboriginal or Euro-Canadian human burials could be discovered during construction. The report includes a protocol for dealing with this.

2.10 Source Water Protection

The Study Area for Seaside proposed wastewater services is in the Lower Thames Valley Source Protection Area and falls under the Thames-Sydenham and Region Source Protection Plan. The Study Area is not located in a "Vulnerable Area". Since the development does not change or create new vulnerable areas, policies in the local source protection plan do not apply to the proposed activity. In addition, the West Elgin Regional Water Supply Plant and its "Intake Protection Zone", located at Eagle approximately 8 km west of Seaside, will not be affected by the proposed wastewater services.

2.11 Local/Provincial Planning Policies

2.11.1 Introduction

Alternative stormwater and wastewater servicing solutions and design options developed for the Seaside Class EA were based on County, local and Provincial land use planning policies and Provincial technical guidelines, including MECP's *Stormwater Management (SWM) Planning and Design Manual* (2003) and *Design Guidelines for Sewage Works* (2008). Relevant land use planning policies are included in the County of Elgin Official Plan, the Municipality of West Elgin Official Plan, Port Glasgow Secondary Plan and *Provincial Policy Statement* (PPS) issued under the *Planning Act* (2014).

2.11.2 County of Elgin Official Plan

The County of Elgin Official Plan was approved in 2013. Port Glasgow's attraction as a tourism and recreational living resource is acknowledged in Section A2 of the plan, "Community Vision". The proposed development of Seaside is also supportive or consistent with several other policies of the Official Plan, including its Goals and Strategic Objectives.

The proposed Seaside development is directly supportive of Goals 5 and 6 in Section A3. Seaside will help ensure that an adequate supply of land and housing choices are available for present and future residents and help ensure the protection and enhancement of tourism and recreational opportunities (both active and passive) in the many downtown/main street areas and ports throughout the County.

Section A4.1e) of the Official Plan's Strategic Objectives is: "To focus new development in settlement areas in the following order of priority: fully serviced settlement areas, privately serviced settlement areas, and partially serviced settlement areas." The proposed Seaside development will be serviced by piped municipal water and a communally owned and operated sanitary sewage disposal system. Considered in combination with the existing residential development in Port Glasgow which is serviced by the municipal water supply system, the Seaside development should elevate Port Glasgow to at least a Tier 2 Settlement Area.

Strategic Objective A4.1f) intends: "To allow the expansion of a settlement area boundary when appropriate justification is provided and only at the time of a comprehensive review." This Seaside ESR, along with the Environmental Impact Studies (EIS) and other technical reports completed for the project can be used as appropriate justification for a Port Glasgow Settlement Area designation at the time of a forthcoming comprehensive review. The proposed Seaside development will also help "To identify and highlight the importance of the 'port' communities along the Lake Erie shoreline" in support of Strategic Objective A4.1g).

Section A4.2 of the Official Plan provides the policy framework for the protection of Natural Systems in the County of Elgin. The Seaside ESR and its accompanying EIS combine to address key points in this section of the Official Plan; by identifying natural heritage features and areas, protecting them from development, and outlining sensitive development strategies. These strategies are incorporated in the proposed Low Impact Development (LID) storm water management alternatives, and the proposed planting of naturally occurring plant species in disturbed areas. To this end, the proposed Seaside development will contribute to the protection, maintenance and enhancement of water and related resources and aquatic ecosystems. Further, as is demonstrated in this ESR, the preferred waste water servicing system has been selected to "minimize negative changes to the water quality and hydrological functions of watercourses, lakes, aquifers and wetlands."

The proposed Seaside development will also "support the role of 'ports' in the County as the primary locations for tourism and economic activity" in accordance with Section A4.3b) of the Official Plan, "Economic Prosperity". Schedule 'B' to the plan designates Havens Lake Road (Seaside's "main street") as a "Tourism Corridor".

Section A4.4 of the County Plan provides a policy framework for "Infrastructure". The preparation of this ESR supports the policy in Section A4.4b) "to ensure that the construction of all infrastructure, or expansion of existing infrastructure, occurs in a manner that is compatible with adjacent land uses and with a minimum of social and environmental impact."

Section A5.3 of the Official Plan provides a policy framework for Tourism in the County of Elgin. The proposed Seaside development is supportive of the key tourism policies of the Official Plan by means of its promotion of high-quality attractions, facilities and accommodations.

Section B of the Official Plan establishes the Growth Management policy framework for the County. Although there are several hundred hectares of land suitable for development in existing Settlement Areas, development activity has been relatively slow in the west part of the County. Section B2.3 of the Official Plan states that 20% of future growth to 2031 will occur in the west part of the County. The proposed Seaside development will be one of the most significant contributors to this growth target.

Section B2.8 of the Official Plan provides Locational Criteria for Settlement Area Expansions and new Settlement Areas. The Municipality of West Elgin currently has two Tier 1 Settlement Areas with full municipal services in Rodney and West Lorne. New Glasgow and Eagle have piped municipal water and are Tier 2 Settlement Areas. Clachan is a Tier 3 Settlement Area.

Although the proposed Seaside development will not result in a Settlement Area expansion as per Section 2.8.3 of the Official Plan, most of the applicable policies of this section have already been addressed during the preparation and approval of the Port Glasgow Secondary Plan. Section 2.8.4 of the Official Plan establishes that New Settlement Areas will require an amendment to the Official Plan. It is not unreasonable to anticipate that Port Glasgow would be subject to such an amendment in the future, establishing the existing and proposed community as a Settlement Area.

Section E.2 of the County Plan encourages the preservation of cultural heritage resources. There are no significant cultural heritage resources or significant cultural heritage landscapes affected by Seaside. There are, however, archaeological resources that are being dealt with as part of the Plan of Subdivision approval process.

2.11.3 Municipality of West Elgin Official Plan and Port Glasgow Secondary Plan

The West Elgin Official Plan was approved in February 2011. The Port Glasgow Secondary Plan was approved in August 2013 and subsequently consolidated into the West Elgin Official Plan. The Official Plan and Secondary Plan are available on the Municipality's website http://www.westelgin.net

The "Port Glasgow Specific Policy Area" comprises Lots 6 and 7 and Part Lot 8, Concession 14, Aldborough Ward. These lands, including the Seaside lands (Part Lot 6), are designated "Lakeshore Area" in the West Elgin Official Plan. According to Section 7.5 of the plan:

> *"… It is intended that lands within the Port Glasgow Specific Policy Area… continue to develop as the centerpiece of the 'Lakeshore Area' offering a range of housing types, recreational and cultural opportunities, and commercial establishments catering to both residents of the Municipality and visitors from outside the area.*
>
> *Development within the Port Glasgow Specific Policy Area is anticipated and encouraged subject to the appropriate level of services being in place. The natural heritage features, cultural heritage features, access to the lake, and views of the lake will be protected and enhanced wherever possible."*

The Port Glasgow Secondary Plan establishes the policy framework for a multi-lot development, such as Seaside, and other future development in the community. According to the West Elgin Official Plan:

> *"The Seaside Lands comprise 37% of the community of Port Glasgow. Approximately half of the Seaside lands are characterized by ravines, Carolinian forest and part of the Sixteen Mile Creek watershed. The developable portion of the Seaside lands are in agricultural cultivation. These lands are entirely within the community of Port Glasgow, and exhibit significant development potential."*

The significant development potential of Seaside is important for future growth in the municipality. The West Elgin Official Plan states that growth in the Municipality is hindered primarily due to a lack of employment opportunities. Section 1.4 of the plan states:

> *"The prospects for future growth of West Elgin will depend largely on economic growth in the region as well as the ability of the municipality to attract those persons prepared to commute to nearby centres (i.e. Chatham, London and St. Thomas) for employment and higher order goods and services."*

Land use designations from the Port Glasgow Secondary Plan are shown on **Figure 2.8.** The existing developed portion of the community is designated as "Parks and Open Space" along the beach with "Pedestrian Trails and Connections", "Existing Built Area", "Existing Seasonal Residential" and a future "Seasonal Residential" area.

Seaside is designated as follows:

- The tablelands east and west of Lake Havens Road are designated "Residential". Low and medium density housing is permitted, generally to a maximum of four storeys.
- Lands along Havens Lake Road near the marina are designated "Commercial" and "Mixed Use". Permitted commercial uses include "retail, service and hospitality uses which primarily serve the permanent and seasonal residents of Port Glasgow and recreational day users and tourists". "Mixed Uses" include a combination of residential and commercial uses with commercial uses located on the ground floor.
- A "Protected Natural Corridor", including "Parks and Open Space" and "Hazardous Lands", follow the Sixteen Mile Creek valley lands and ravines east of Havens Lake Road. According to the Secondary Plan, these features have significant potential as a wildlife corridor. The plan states that Port Glasgow includes significant fish habitat, wildlife habitat, habitat of endangered or threatened species, valleylands, woodlands and potential wetlands with regionally rare plant species. Regulated by the LTCVA, "Hazardous Lands" are potentially unsafe for development because of flooding, erosion, dynamic beaches or unstable soil. No buildings and structures are permitted unless approved by the LTCVA.
- The valleylands of Sixteen Mile Creek also include lands designated "Parks and Open Space", "Woodlands" and "Pedestrian Trails and Connections". According to the plan, the interconnected public open space system builds on the area's natural attributes
- The lakeshore, including the marina, is designated "Waterfront Amenity and Attraction" and includes a "Public Promenade".

Figure 2.8 Port Glasgow Secondary Plan

In 2008, the Municipality of West Elgin initiated a Class EA to identify a preferred sanitary servicing solution for existing and future development in Port Glasgow, including the Seaside lands. A municipal wastewater treatment facility was identified as the preferred alternative to service existing and future development on Lots 3 to 7 in Port Glasgow. However, in response to significant public opposition expressed at a public meeting held on September 4, 2008, a private communal wastewater treatment facility to service Seaside only was identified as the preferred solution. Although the Class EA process was never formally completed by the municipality, it was implemented by the policies of the Port Glasgow Secondary Plan.

With respect to sanitary sewage servicing, Section 11.3.2. of the Port Glasgow Secondary Plan states:

> *"The preferred method of providing sanitary sewage disposal services for all classes of development in Port Glasgow will be by private, communal systems, subject to the completion of a provincial environmental assessment process. Private, non-communal sewage disposal systems will also be permitted for individual dwelling and commercial units which are not part of a plan of subdivision or plan of condominium, in accordance with the regulations of the Ministry of the Environment or their delegated authority."*

Section 6.5.5 d) of the West Elgin Official Plan requires that all new development submit a stormwater management plan to the Municipality to eliminate or minimize water quality impacts, erosion and flood risk and the conveyance of flows onto adjoining properties. Section 11.3.3 of the Port Glasgow Secondary Plan states that

> *"The preferred method of providing storm water management services will be by private communal works and facilities, and/or other private individual works or facilities, as approved by the Ministry of the Environment under the Ontario Water Resources Act. All run-off and drainage from impervious surfaces proposed by development or redevelopment will have regard for, and mitigate any negative impacts on Sixteen Mile Creek, its tributary, and Lake Erie … "*

Other relevant policies from the Official Plan and Secondary Plan include the following:

- A key principle of the Port Glasgow Secondary Plan is to protect and minimize impacts on the natural environment by ensuring that development has no negative impacts on the Sixteen Mile Creek watershed and Lake Erie.
- The West Elgin Official Plan encourages the identification, conservation, protection, restoration, maintenance and enhancement of cultural heritage resources. Although no heritage buildings are located in Port Glasgow, the Port Glasgow Secondary Plan acknowledges that the area has high potential for the discovery of Aboriginal and European-Canadian archaeological resources.
- The Official Plan permits public infrastructure, including SWM and sanitary sewage treatment facilities, in all land use designations in accordance with all required environmental approvals. The plan requires a 100 metre separation distance between a sewage treatment plant and sensitive lands uses, such as residential uses.

2.11.4 Provincial Policy Statement

The *Provincial Policy Statement* (PPS) was issued under the *Planning Act* in 2014. In the exercise of any authority that affects a planning matter, the *Planning Act* requires that decisions affecting these matters "shall be consistent" with the PPS. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.

Along with municipal official plans, the PPS provides a framework for comprehensive, integrated, place-based and long-term planning that integrates the principles of strong communities, a clean and healthy environment and economic growth over the long term.

The proposed Seaside development, along with the required wastewater services, has been planned and designed to conform to local Official Plans and be "consistent with" the PPS.

Based on the Province's key interest of wisely managing growth, the PPS requires efficient development patterns to focus growth in settlement areas and direct growth away from significant or sensitive resources. Efficient development patterns optimize the use of land, resources and public investments in transportation, servicing and other infrastructure, resulting in strong, livable and healthy communities.

Infrastructure Policies

Section 1.6 of the PPS includes policies for "Infrastructure", defined as "physical structures (facilities and corridors) that form the foundation for development". ("Development" is defined as not including "activities that create… infrastructure authorized under an environmental assessment process"). Among other types, infrastructure includes sewage systems, septage treatment systems, SWM systems and associated facilities. Sewage systems are defined in the PPS as including municipal sewage services, private communal sewage services and individual on-site sewage services.

Section 1.6.1 of the PPS requires that infrastructure be provided in a coordinated, efficient and cost-effective manner that considers impacts from climate change while accommodating projected needs. Green infrastructure, including "natural and human-made elements that provide ecological and hydrological functions and processes", are encouraged by the PPS. Section 1.6.2 states that the use of existing infrastructure should be optimized before the development of new infrastructure is considered.

Policies applying to "Sewage, Water and Wastewater" services are included in Section 1.6.6. The PPS requires that planning for sewage services shall direct and accommodate expected growth or development in a manner that promotes the efficient use and optimization of existing municipal sewage services (such as the existing Rodney WWTF) or, where such services are not available, private communal services.

Planning authorities must also ensure that these services are provided in a manner that:

- Can be sustained by the affected water resources;
- Are feasible and financially viable and comply with all regulatory requirements;
- Protects human health and the natural environment;
- Promotes water conservation and water use efficiency; and
- Integrates servicing and land use considerations during all stages of the planning process.

Section 1.6.6 includes the following hierarchy for providing sewage services:

- Municipal sewage services are the preferred form of servicing for settlement areas.
- Where municipal services are not provided, municipalities may allow the use of private communal sewage services, defined as sewage works that serve six or more lots or private residences.
- Where municipal or communal services are not provided, individual on-site sewage services, such as septic tank and tile bed systems, may be used provided site conditions are suitable for the long-term provision of such services with no negative impacts.

In settlement areas, these services may only be used for infilling and minor rounding out of existing development.

As mentioned, Port Glasgow is currently serviced by the municipality's water system and individual on-site sewage systems. These "partial services" are discouraged by the PPS unless they are provided to address failed individual water services for existing development (as was the case in Port Glasgow). Partial services, however, may be permitted for infilling and minor rounding out of existing development provided soil conditions are suitable and there are no negative impacts.

As outlined in Section 1.6.6.7 of the PPS, planning for SWM shall:

- Minimize, or where possible, prevent increases in contaminant loads;
- Minimize changes in water balance and erosion;
- Not increase risks to human health and safety and property damage;
- Maximize the extent and function of vegetative and pervious surfaces; and

- Promote stormwater management best practices, including stormwater attenuation and re-use and low impact development.

Wise Use and Management of Resources

When planning infrastructure, Section 1.6.8.5 of the PPS requires that consideration shall be given to the significant resources protected by Section 2.0, "Wise Use and Management of Resources". Significant resources potentially affected by the proposed wastewater services include:

Natural Heritage Features and Areas

These include significant woodlands, wetlands, valleylands and wildlife habitat, Areas of Natural and Scientific Interest (ANSIs), fish habitat, habitat of endangered and threatened species and lands adjacent to these features and areas. Features and areas potentially affected by the development of Seaside are summarized in Section 2.8 of this ESR.

Quality and Quantity of Water

These policies cover water resource systems, such as ground water features, hydrologic functions, natural heritage features/areas and surface water features, including shorelines.

Also, to be considered are:

- Maintaining linkages and related functions among these systems.
- Municipal drinking water supplies. As noted in Section 2.10, the Seaside wastewater facilities are not located in a "Vulnerable Area" or affect the "Intake Protection Zone" of the West Elgin Regional Water Supply Plant, as designated in the Thames-Sydenham and Region Source Protection Plan
- As noted in Section 2.6, a perched aquifer is located on the tablelands of the Seaside site. This feature will be considered in the design of the development and services
- SWM practices that minimize stormwater volumes and contaminant loads and maintain or increase the extent of vegetative and pervious surfaces. Seaside's proposed LID SWM measures are consistent with this policy.

Cultural Heritage and Archaeology Resources

There are no significant built heritage resources or cultural heritage landscapes potentially affected by Seaside's proposed wastewater services. Archaeological assessments of the proposed wastewater services have been prepared to identify, protect and manage archaeological resources, as required by the *Ontario Heritage Act*.

3.0 Phase 1, Problem/Opportunity

3.1 Introduction

Phase 1 of the Class EA process, “Problem/Opportunity”, provided the justification of the need for the wastewater facilities proposed to service Seaside. Public and agency consultation also occurred during Phase 1, as outlined in Section 6 of this ESR.

3.2 Problems and Opportunities

Located on a site of 24.7 hectares, the proposed Seaside development consists of 394 single detached and multiple residential units and 4,938 m2 of restaurant and commercial space, along with extensive open space and parks. With a projected population of over 800, it is expected to appeal to a mature demographic.

The development of Seaside is encouraged by, and conforms to, the County of Elgin Official Plan, West Elgin Official Plan and Port Glasgow Secondary Plan. As outlined in the West Elgin Official Plan, Port Glasgow is intended to be developed as the “centerpiece” of the “Lakeshore Area” with “a range of housing types, recreational and cultural opportunities, and commercial establishments catering to both residents of the Municipality and visitors from outside the area”. The Secondary Plan provides a policy framework for the future development of Port Glasgow, including the Seaside lands.

Seaside will contribute to future population and economic growth in West Elgin and is consistent with the Municipality’s target demographic:

- The West Elgin Official Plan states that growth in West Elgin is hindered primarily by a lack of employment opportunities. With a projected population of 800 people, Seaside will significantly increase the Municipality’s 2016 census population of 4,995. In addition, the construction of Seaside, along with the proposed commercial and recreational uses, will contribute to short and long-term economic growth in the Municipality and provide employment opportunities for local residents.
- According to the West Elgin Official Plan, future growth will depend largely on economic growth in the region, as well as the Municipality’s ability to attract people who commute to nearby urban centres (London, St. Thomas and Chatham) for employment and higher order goods and services. The population of Seaside will help support businesses and services located in West Elgin communities, such as Rodney and West Lorne. The development will also support tourism and tourism related recreational and commercial uses.
- Currently, there are no schools or other institutional uses or commercial uses in Port Glasgow. Based on this, the Port Glasgow Secondary Plan notes that the target demographic for the community is “primarily comprised of mature family units” due to the lack of schools, shopping and other facilities which attract younger families and individuals. This is consistent with Seaside’s projected mature demographic.

Municipal water but no sanitary sewage treatment facilities are currently available in Port Glasgow. The West Elgin Official Plan requires “an appropriate level of services” for the development of Seaside, including “private communal sanitary sewage and stormwater management works planned and designed under the Municipal Class EA”. In addition, since the WWTF planned for Seaside is designed to be expandable, it could be expanded in the future to service existing development in Port Glasgow in the event that the existing septic tank and tile bed systems fail.

Section 2 of this ESR describes the significant environmental features potentially affected by Seaside's proposed wastewater facilities. In addition to technical and economic considerations, the proposed wastewater facilities were planned and designed to avoid or minimize impacts on the following significant environmental features:

- Existing development in Port Glasgow, including residential development and tourist related and recreational uses, such as the Port Glasgow Marina and Lake Erie beaches;
- Groundwater, including the perched aquifer near Gray Line and Furnival Road;
- Water quality in Sixteen Mile Creek;
- Provincially Significant Fish Habitat provided by Sixteen Mile Creek;
- Provincially Significant Woodlands;
- Provincially Significant Valleyland;
- Butternut (Endangered) and habitat;
- Carrion Flower, Eastern Narrow-leaved Sedge and Woodland Bluegrass and habitats, all Provincially S-Ranked species;
- Potential Whip-poor-will (Threatened) habitat;
- Snapping Turtle (Special Concern) habitat;
- Foraging habitat for Milksnake (Special Concern);
- Habitat for Provincially S -Ranked dragonflies; and
- Cultural heritage resources, including archaeological resources.

The planning and design process also considered opportunities to enhance natural heritage resources. Another important consideration is the requirement to conform to/be consistent with the County of Elgin Official Plan, West Elgin Official Plan, Port Glasgow Secondary Plan and *Provincial Policy Statement.*

3.3 Problem/Opportunity Statement

Since it has many benefits for the growth and economic development of the Municipality, the proposed Seaside development is encouraged and permitted by the County of Elgin and West Elgin Official Plans.

As required by both Official Plans, the development must be serviced by private communal sanitary sewage and SWM works planned and designed under the Municipal Class EA. In addition to considering relevant technical and economic factors, the proposed wastewater services will be planned and designed to avoid or minimize impacts on the significant environmental features identified in this ESR and to conform to/be consistent with County and local municipal Official Plans and Provincial planning policies. Opportunities to enhance natural heritage resources will also be considered.

4.0 Phase 2, Alternative Solutions

Phase 2 of the Class EA process, “Alternative Solutions”, consisted of the development and evaluation of alternative solutions to the wastewater servicing problems and opportunities identified in Phase 1. Preferred wastewater servicing solutions for stormwater management (SWM) and sanitary sewage treatment were chosen at the end of Phase 2.

4.1 SWM Approach

A Low Impact Development (LID) approach to SWM was chosen for the Seaside development. LID mimics the natural hydrologic cycle by promoting plant growth, uptake of pollutants, water attenuation, filtration and infiltration and can be used to create wildlife habitat. It effectively controls water quality and erosion and converts urban stormwater run-off from “wastewater” to a resource.

The benefits of LID at the lot/block level of development, conveyance controls and end-of-pipe facilities include the following:

Lot/Block Level Controls

- Promotes storage/infiltration of stormwater;
- Reduces peak run-off;
- Promotes treatment and polishing of run-off; and
- Can be integrated with lot landscaping.

Conveyance Controls

- Provides additional storage/infiltration;
- Further reduces peak run-off;
- Provides additional treatment and polishing; and
- Has a similar aesthetic to the natural environment

End-of-Pipe Facility (wet/dry ponds, wetlands/constructed wetlands)

- Eliminates the need for or reduces the size or depth of end-of-pipe SWM facilities, such as detention ponds, constructed wetlands or bio-retention areas;
- Reduces footprint; and
- Benefits from upstream treatment and storage.

Based on its many benefits, a LID approach was incorporated into all of the alternative solutions developed for SWM. Examples of the LID approach to SWM are shown on **Figures 4.1** and **4.2** and include rain gardens, native landscaping, bioswales, bioretention cells, level spreaders and pervious paving.

Figure 4.1 Examples of LID Approach to SWM

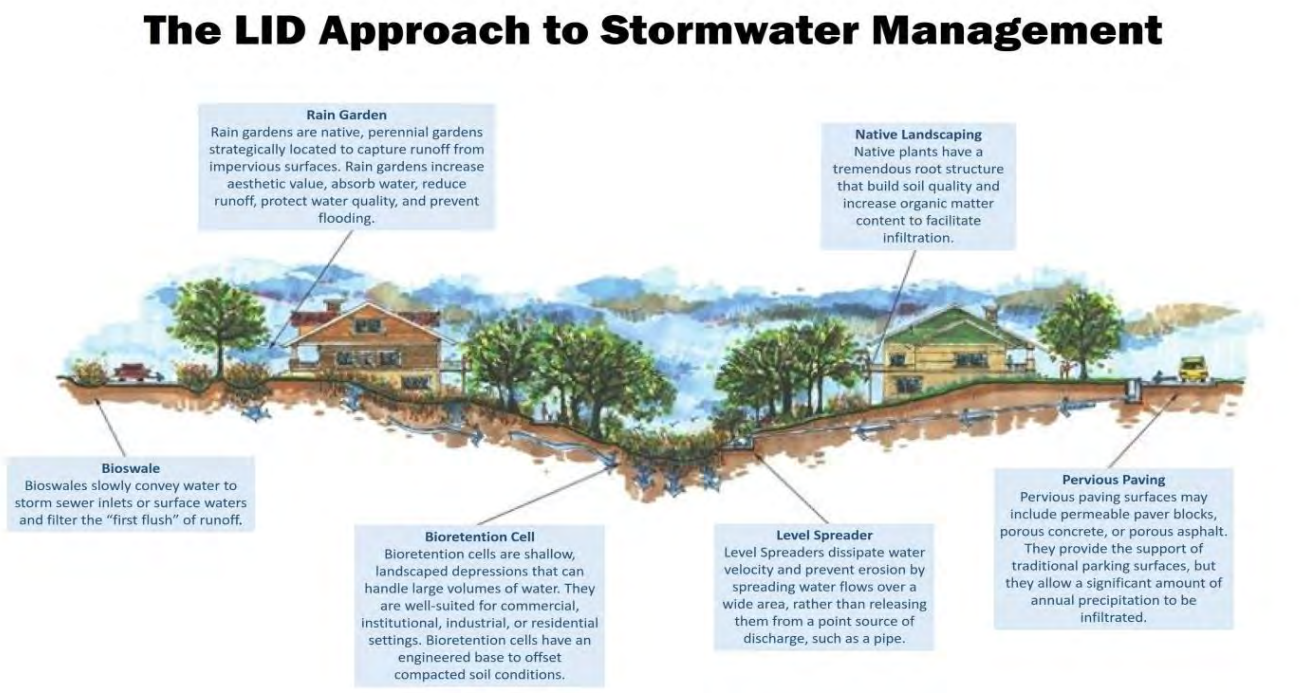
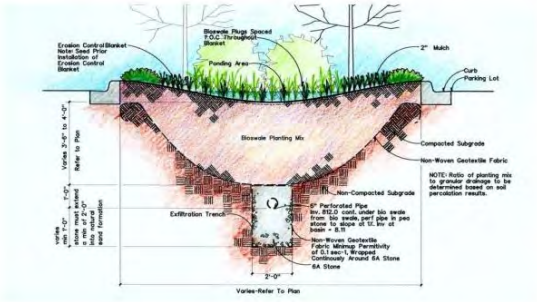


Figure 4.2 More Examples of LID Approach to SWM

Bioswales



Bioretention Areas

4.2 SWM Environmental and Design Targets

Following the requirements of MECP's *SWM Planning and Design Manual* (2003), enhanced protection water quality control is proposed for Seaside to protect the water quality and aquatic habitat of Sixteen Mile Creek, Lake Erie and intermittent tributaries. This type of protection is typically applied to cold water receiving watercourses/waterbodies and exceeds the treatment required for discharge to a warm to coolwater watercourse like Sixteen Mile Creek. The Design Manual also includes guidelines for erosion and water quantity (or flood) control to minimize the negative impacts of stormwater runoff on receiving watercourse and waterbodies.

The following environmental targets for SWM were developed for the site's three sub-catchment areas, including the East Tableland (east of Havens Lake Road), Havens Lake Road and West Tableland (west of Havens Lake Road):

- Provide enhanced protection for water quality control by removing more than 80% of Total Suspended Solids (TSS). This target exceeds MECP's regulatory requirements for Lake Erie and Sixteen Mile Creek;
- For erosion control, control 2-year peak flows to less than pre-development levels;
- Reduce the footprint of or eliminate the need for end-of-pipe SWM facilities; and
- Provide thermal control to reduce impacts on water temperatures in Sixteen Mile Creek.

SWM design targets for the three sub-catchment areas are summarized as follows:

East Tableland:

Water Quality Control – Enhanced Protection
Erosion Control – over-control 2-year post development flows to less than pre-development levels
Quantity Control – over-control to limit coincidental peaking with Havens Lake Road sub-catchment area.

Havens Lake Road:

Water Quality Control – Enhanced Protection
Erosion Control – control 2-year post development flows to pre-development levels
Quantity Control – limit attenuation to avoid coincidental peaking with East Tableland.

West Tableland:

Water Quality Control – Enhanced Protection
Erosion Control – over-control 2-year post development flows to less than pre-development levels
Quantity Control – control peak run-off and conveyance to Sixteen Mile Creek.

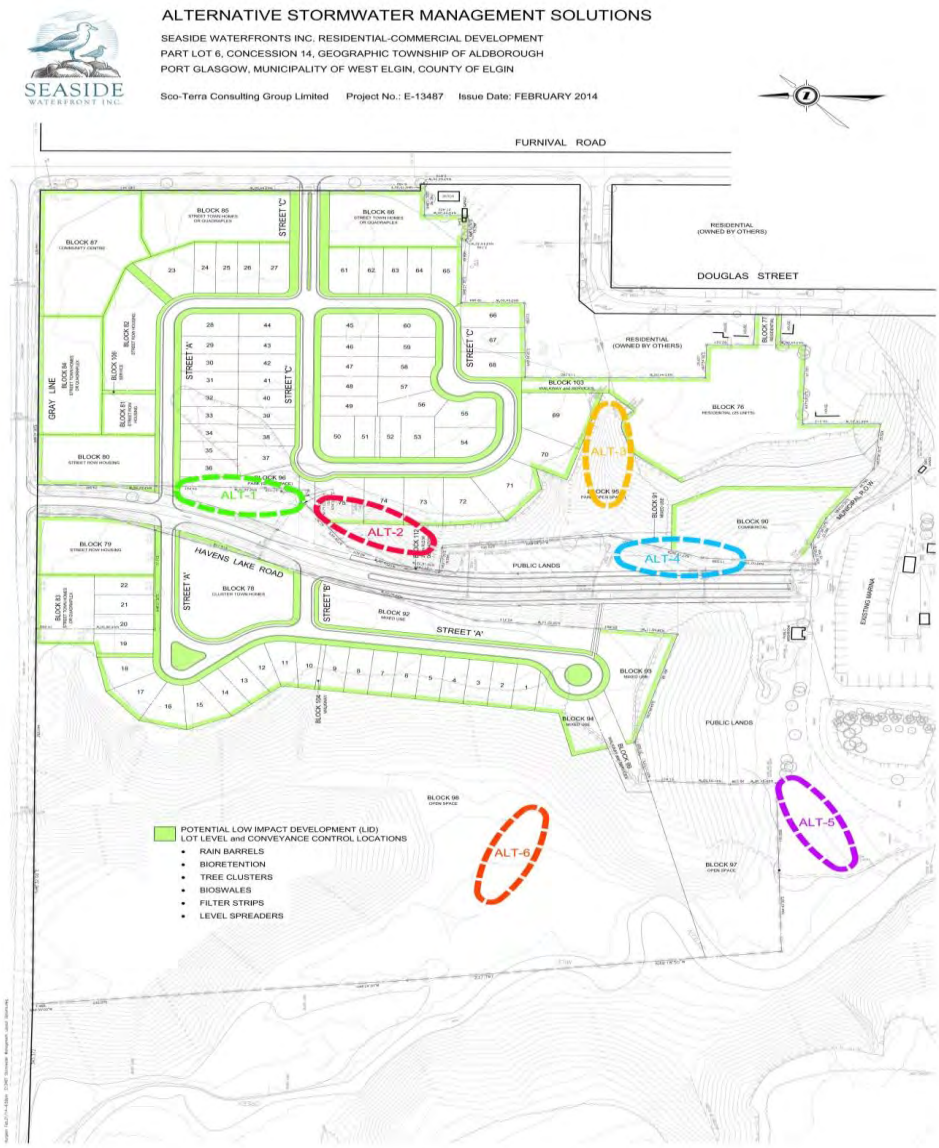
4.3 Alternative Locations and Evaluation of End-of-Pipe SWM Facilities

Although a LID approach to SWM may reduce the footprint of, or eliminate the need for, end-of-pipe SWM facilities, some facilities may still be required. As shown on Figure 4.3, six alternative locations for end-of-pipe SWM facilities were identified and evaluated. Alternative 7, consisting of a combination of LID and decentralized facilities east and west of Havens Lake Road, was also evaluated. All alternatives made optimal use of upstream lot level and conveyance controls.

The six alternatives include:

- Alternative Location 1 is adjacent to the upper ravine, east of Havens Lake Road
- Alternative Location 2 is in the upper ravine, east of Havens Lake Road
- Alternative Location 3 is in the upper ravine, west of Douglas Line
- Alternative Location 4 is in the south segment of the watercourse east of Havens Lake Road
- Alternative Location 5 is located on municipal lands southwest of Seaside. It is located on vegetation Community 14a, a Forb Mineral Meadow Marsh
- Alternative Location 6 is a low-lying area located on Seaside lands in the Sixteen Mile Creek valley.

Figure 4.3 Alternative Locations for End-of-Pipe SWM Facilities



Broad evaluation criteria were used to rank Alternatives 1 to 7. As shown on Table 4.1, the criteria included impacts on the natural environment and natural heritage features, public health and safety, impacts on the social and cultural environment, including land uses, conformity to/consistency with County/local municipal Official Plans and Provincial planning polices and technical performance and economics.

Table 4.1 Evaluation of Stormwater Servicing Alternatives

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
	East of Havens Lake Road				West of Havens Lake Road		Combination
	Adjacent to Upper Ravine East of HLR	Upper Ravine East of HLR	Upper Ravine West of Douglas Line	South Segment of Watercourse East of HLR	Municipal Lands Southwest of Seaside	Sixteen Mile Creek Valley	Multiple Facilities East and West of HLR
All Categories							
A. Natural Environment/ Natural Heritage Features	5	3	4	6	1	2	1
B. Public Health and Safety	2	2	3	3	1	1	1
C. Social and Cultural Environment	2	2	2	3	1	1	1
D. & E. Technical Performance and Economics	4	3	3	5	1	1	1
Overall Preference	**5**	**3**	**4**	**6**	**1**	**2**	**1**

Impacts on the Natural Environment/Heritage Features

Since they potentially have the fewest impacts, Alternatives 5 and 7 were ranked the highest with respect to impacts on the natural environment/heritage features, while Alternative 6 ranked second, Alternative 2 ranked third, Alternative 3 ranked fourth, Alternative 1 ranked fifth and Alternative 4 ranked last.

Alternative Location 5 is a wetland constructed by the Municipality of West Elgin, consisting of a forb mineral meadow marsh. An end-of-pipe facility at this location provides an opportunity to stabilize and improve the aquatic habitat of the existing wetland and could create direct fish habit and endangered species habitat. Currently, Alternative Location 5 provides a limited habitat function but, when integrated with a SWM function, it has more potential than Alternative Location 6 for improving natural heritage features.

Public Health and Safety

For public health and safety, Alternatives 5, 6 and 7 were ranked the highest and Alternatives 3 and 4 were ranked the lowest.

Impacts on the Social and Cultural Environment

Alternatives 5, 6 and 7 were also ranked the highest with respect to impacts on the social and cultural environment. Alternative 4 was ranked the lowest.

Conformity to/Consistency with County/Municipal and Provincial Planning Polices

The Port Glasgow Secondary Plan states that SWM facilities must avoid or minimize potential environmental impacts on the Sixteen Mile Creek watershed and Lake Erie. The PPS requires that SWM practices minimize stormwater volumes and contaminant loads and maintain or increase the extent of vegetative and pervious surfaces.

Since Alternatives 5 and 7 have the least impact on the natural environment, they are preferred with respect to conformity with local and Provincial planning policies. Alternatives 1, 3 and 6 are the least preferred since they have the most impacts on the natural environment.

Technical Performance and Economics

For this factor, Alternatives 5, 6 and 7 were ranked the highest and Alternatives 1 and 4 were ranked the lowest.

Summary

Overall, Alternative Location 5 and Alternative 7 ranked the highest, Alternative Location 6 ranked second, Alternative Location 2 ranked third, Alternative 3 ranked fourth, Alternative Location 1 ranked fifth and Alternative Location 4 ranked last. Alternative 7, along with an end-of-pipe facility for water quality and erosion control at either Alternative Locations 5 or 6, has the most potential for improving natural heritage features.

4.4 Preferred SWM Solutions

As shown on **Figure 4.4**, Low Impact Development (LID) SWM measures, combined with decentralized SWM facilities for water quantity and quality and erosion control (Alternative 7), was chosen as the preferred SWM solution during Phase 2 of the Class EA process.

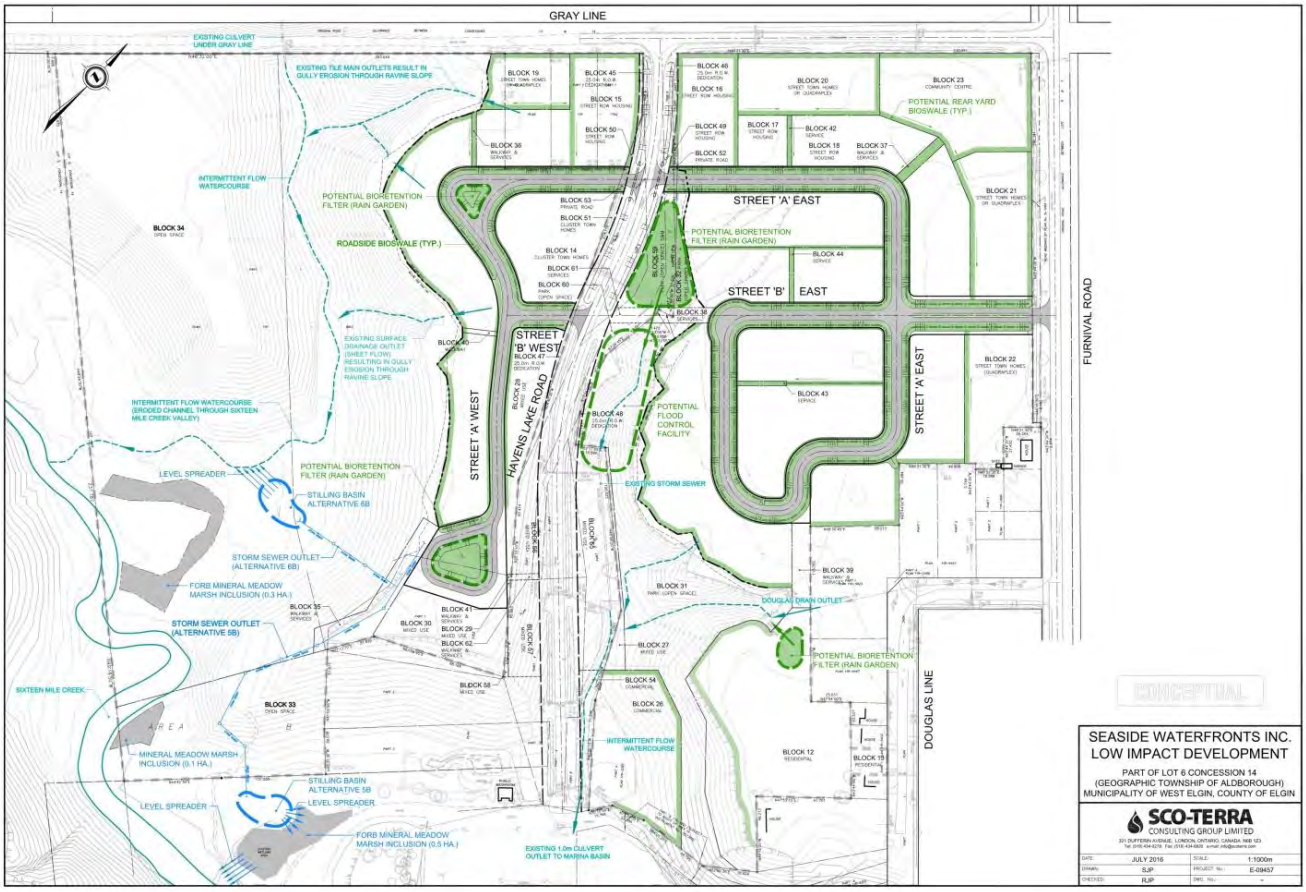
Based on Alternative 7, the preferred SWM solutions for the three sub-catchment areas are as follows:

- For the East Tablelands, LID measures are planned, along with end-of-channel detention facilities at Locations 1, 2 and/or 3 to control run-off to pre-development levels to the Port Glasgow Marina basin. Also, optimal use will be made of LID lot level and conveyance controls suited to site conditions.

- For Havens Lake Road, LID measures are planned, along with localized SWM measures to attenuate and release controlled stormwater run-off to the existing drainage outlet at the marina basin. An end-of-pipe SWM facility is not feasible in this area due to the steep topography and potential impacts on natural heritage features in the ravine.
- For the West Tablelands, LID measures are planned, along with end-of-channel detention facilities for piped conveyance to Sixteen Mile Creek. Alternative Locations 5 and 6 were carried forward for further evaluation as potential locations for the detention facilities.

The preferred SWM solutions for the three sub-catchment areas were further refined during Phase 3 of the Class EA process, as summarized in Section 5 of this ESR.

Figure 4.4 Low Impact Development Opportunities



4.5 Service Area and Sanitary Sewage Design Flows

As outlined in the Port Glasgow Secondary Plan, the Service Area for the proposed wastewater treatment facility consists of the Seaside development only.

The estimated population of the residential units proposed in Seaside, along with the size of the proposed commercial and recreational uses, is shown on **Table 2.2** in Section 2.3 of this ESR. Using the figures shown on the table, MTE estimated the design wastewater flows for Seaside, as shown on **Table 4.2**. These estimated flows were used to develop the wastewater servicing alternatives outlined in the next section.

Table 4.2 Design Population and Flows

Design Population and Flows	
Item Design Criteria	**Item Design Criteria**
Design Population	• 370 Residential Units • 2.22 ppu weighted density – refer to Planning Report (Kirkness) • 370 Units x 2.22 ppu = 821 persons
Per Capita Flow	• per capita domestic sewage flow – 275 L/cap-day • per capita extraneous flow (i/i) allowance – 90 L/cap-day • Total per capita sewage flow incl. i/i - 365 L/cap-day
Design Sewage Flow (Residential Only)	• Average Day Flow (ADF) = 300 m3/day (3.47 L/s) • Maximum Day Flow (MDF) = 2.0 X ADF = 600 m3/day (6.94 L/s) • Peak Instantaneous Flow (PIF) = 11.8 L/s (conveyance system)
Design Sewage Flow (Residential Only)	• Average Day Flow (ADF) = 300 m3/day (3.47 L/s) • Maximum Day Flow (MDF) = 2.0 X ADF = 600 m3/day (6.94 L/s) • Peak Instantaneous Flow (PIF) = 11.8 L/s (conveyance system)
Commercial Contributions	• Multiple Restaurant Uses – 450 seats assumed • 125 L/d-seat (OBC Part 8) • **56.25 m3/day High Strength Wastewater** • 5,000 m2 GFA - Commercial Other (allowance) • 5L/d/m2 GFA • **25.0 m3/day Domestic Wastewater**
Design Sewage Flow (Residential + Commercial)	• **Average Day Flow (ADF) = 381 m3/day (4.41 L/s)** • Maximum Day Flow (MDF) = 2.0 X ADF = 762 m3/day (8.82 L/s) • Peak Instantaneous Flow (PIF) = 14.3 L/s (conveyance system)

4.6 Sanitary Sewage Servicing Alternatives

Although the Port Glasgow Secondary Plan only permits a private communal WWTF for new Plans of Subdivision, six alternatives were developed for the treatment of sanitary sewage generated by the proposed Seaside development. For the wastewater servicing alternatives that include a WWTF, the facility would be designed to meet or exceed the effluent quality criteria of the Rodney WWTF, as shown on Table 2.3. These criteria are intended to protect the water quality and fish habitat of the receiving watercourses and waterbodies.

Alternative 1, Individual Private Sewage Disposal Systems

This alternative includes septic tank and tile beds, or tertiary systems, such as EcoFlow, Waterloo Biofilter, FAST Canada systems, etc. Owned and maintained by the homeowner, these systems collect, treat and disperse effluent to the subsurface where the soil polishes the effluent before returning it to the environment. These types of systems provide primary sewage treatment. Systems handling less than 10,000 litres a day must meet the requirements of the Ontario Building Code.

Alternative 1 was screened out from further consideration for several reasons:

- These systems are not feasible for a development like Seaside due to the large areas required to accommodate a septic tank and tile bed system or the large area beds and distribution piping required for tertiary systems. Very costly to install, these systems only have a life span of 20 years. As a result, they do not provide a long-term servicing solution. In addition, tertiary systems require operating attention and maintenance and involve on-going yearly maintenance costs.
- To meet the lot area requirements for individual private systems, the development yield of Seaside would have to be substantially reduced. Seaside, as currently proposed with 394 units, is encouraged by the County of Elgin and West Elgin Official Plans based on its growth and economic benefits for the Municipality.
- Private, non-communal sewage disposal systems are not permitted by the West Elgin Official Plan for a development like Seaside. According to the plan, these systems are only permitted for individual dwellings and commercial units which are not part of a plan of subdivision or plan of condominium.
- Alternative 1 is completely inconsistent with the PPS. The PPS states that in settlement areas like Port Glasgow, individual on-site services "may only be used for infilling and rounding out of existing development".

The remaining alternatives are all capable of meeting the sanitary sewage servicing needs of the Seaside development.

Alternative 2, Clustered Communal WWTFs with Subsurface Discharge

With Alternative 2, sewage is conveyed to and treated by multiple WWTFs serving clusters of development. Effluent is dispersed to subsurface beds for polishing by the soil before it is returned to the environment. These types of systems provide secondary sewage treatment. With proper design and maintenance, the WWTFs, along with the subsurface effluent beds, can be designed to meet or exceed the effluent quality criteria of the Rodney WWTF.

With Seaside's projected sewage flow, this type of system would be classified as a "large subsurface sewage disposal system" by MECP's *Design Guidelines for Sewage Works* (2008) and require approval under the *Ontario Water Resources Act*. A significant amount of land is required for the effluent beds to comply with the guidelines.

Alternative 3, Centralized Communal WWTF with Subsurface Discharge

With this alternative, sewage is conveyed to and treated by a centralized WWTF with effluent dispersed to a large subsurface bed for polishing before being returned to the environment. A secondary level of treatment is provided by this type of system.

An engineered effluent disposal bed, designed and constructed in accordance with MECP's *Design Guidelines for Sewage Works*, requires a significant amount of land for the bed and separation distances required by the guidelines. In addition, the required separation distances may severely limit potential locations. An assessment of the site-specific potential for impacts on water resources would be required to confirm separation distances between the effluent bed and property lines, SWM ponds, wells and Sixteen Mile Creek.

The combination of a WWTF capable of producing secondary quality effluent with subsurface effluent disposal for polishing will result in non-detect contaminant concentrations at the point of discharge to groundwater and surface water. Similar to Alternative 2, the WWTF can be designed to meet or exceed the effluent quality criteria of the Rodney WWTF. This type of system would also be classified as a large subsurface sewage disposal system.

Alternative 4, Centralized Communal WWTF with Surface Water Discharge

With Alternative 4, sewage is conveyed to and treated by a centralized WWTF capable of providing tertiary sewage treatment. Treated effluent is then discharged to a suitable surface water receiver by means of a gravity outfall. A compact treatment process, the WWTF and the rest of the system require only a small amount of land.

This alternative can be designed to meet or exceed the effluent quality criteria of the Rodney WWTF.

Alternative 5, Pump Station and Forcemain to the Rodney WWTF

Located about 10 kms north of Seaside, the Rodney WWTF is the closest municipal treatment facility to Port Glasgow. The Rodney WWTF is owned and operated by the Municipality of

West Elgin. Alternative 5 involves the construction of a centralized pump station on the Seaside lands and a 10 km long, approximately, forcemain to convey sewage to the Rodney WWTF for treatment. Intermediate lift stations may also be required.

According to the plant's 2017 Annual Report, flows received at the Rodney facility averaged 348.1m3/day, more than 59% of the rated or approved treatment capacity (590m3/d). Based on 2017 recorded sewage flows, the plant only has the capacity to treat an additional 241.9m3/d. of sanitary sewage. As a result, an expansion to the WWTF, including a Schedule 'C' Class EA, would be required to service Seaside.

Alternative 6, "Do Nothing"

The Port Glasgow Secondary Plan highlights the need for growth as a primary goal/objective, particularly developments which encourage alternative housing forms, tourism and economic development. The Seaside development meets these goals/objectives and will encourage growth in West Elgin. Since Seaside requires sanitary sewage treatment facilities and could not be developed without them, Alternative 1, "Do Nothing", was rejected as a possible solution.

4.7 Evaluation of Sanitary Sewage Servicing Alternatives

As explained in the previous section, Alternatives 1 and 6 were screened out from further consideration. The remaining alternatives, Alternatives 2, 3, 4 and 5 were ranked using broad evaluation criteria. As shown on **Table 4.3**, these criteria included impacts on the natural environment and natural heritage features, public health and safety, impacts on the social and cultural environment, including land uses, conformity to/consistency with County/Municipal and Provincial planning policies and technical performance and economics.

Table 4.3 Evaluation of Wastewater Servicing Alternatives

Evaluation Criteria	Alternative 1 Individual Private Sewage Disposal – Subsurface Discharge	Alternative 2 Clustered Private Communal WWTFs – Subsurface Discharge	Alternative 3 Centralized Private Communal WWTF – Subsurface Disposal	Alternative 4 Centralized Private Communal WWTF – Surface Water Disposal	Alternative 5 Pump Station and Forcemain Conveyance to Rodney WWTP
All Categories					
A. Natural Environment/ Natural Heritage Features	3	3	3	1	2
B. Public Health and Safety	3	3	3	1	2
C. Social and Cultural Environment	3	3	3	1	2
D. & E. Technical Performance and Economics	4	4	3	1	2
Overall Preference	**4**	**4**	**3**	**1**	**2**

Impacts on the Natural Environment/Heritage Features

As shown on **Table 4.3**, Alternative 4, Centralized Private Communal WWTF with Surface Water Disposal, ranked the highest with respect to impacts on the natural environment/heritage features. Alternative 5, Pump Station and Forcemain to Rodney WWTF, ranked second while Alternatives 2 and 3, involving subsurface discharge ranked third. The reasons for these rankings are:

- Since it is centralized, Alternative 4 is likely to have the smallest footprint and, therefore, the least impact on vegetation and wildlife habitat. Also, this type of system can be designed to minimize impacts on surface water, aquatic habitat and groundwater.
- Although Alternative 5 would also minimize impacts on surface water, aquatic habitat and groundwater, its long forcemain may adversely impact vegetation, aquatic habitat and wildlife habitat located along its route.
- Alternatives 2 and 3, ranked last, involve subsurface discharge. Due to large hydraulic loads, these types of systems could cause negative impacts on groundwater, such as groundwater mounding.

Soils and groundwater conditions may make a large portion of the Seaside site unsuitable for the large subsurface sewage disposal systems proposed as part of Alternatives 2 and 3. As outlined in Section 2 of this ESR, most of the Seaside site has clayey silt/silty clay soils. The subsoil in the north and northeast portion of the site is characterized by silty sands overtopping a poorly drained layer of silt and clay, creating a perched aquifer near Gray Line and Furnival Road. This same subsoil condition occurs on the west portion of the site, with groundwater encountered approximately 1.3 metre below the ground surface (bgs). In areas with low permeability soils near the ground surface, infiltration of significant volumes of stormwater or treated wastewater is not considered practical. Also, these low permeability soils are too thick to be removed through site grading.

Public Health and Safety

For public health and safety, Alternative 4, Centralized Communal WWTF with Surface Water Discharge, ranked the highest, while Alternative 5, Pump Station and Forcemain to the Rodney WWTF, ranked second. Both alternatives offer similar levels of treatment with discharge to Sixteen Mile Creek anticipated to meet all environmental impacts with the least risk of contamination of surface water and groundwater. Alternative 5, however, requires the construction of a forcemain to Rodney which has the potential for mechanical failure throughout its entire length over the course of its lifespan.

The remaining alternatives, including Alternatives 2 and 3, both involving subsurface discharge, ranked third. These alternatives do not offer the same high level of treatment as Alternatives 4 and 5 due to the low permeability of the subsoils within the Seaside lands. The regular maintenance required to maintain these systems would be much more difficult to implement.

Impacts on the Social and Cultural Environment

For this factor, Alternative 4 ranked the highest while Alternative 5 ranked second. The remaining alternatives ranked third. With the smallest footprint, Alternative 4 will have the least impact on land uses and archaeological resources. Alternative 5 potentially has more impacts since the construction of its long forcemain will affect existing land uses and areas with archaeological potential located along its route.

With Alternatives 2 and 3, Seaside's proposed multi-unit residential, commercial development and community centre would likely not be feasible due to the land areas required to treat the wastewater flows generated.

Conformity to/Consistency with Municipal and Provincial Planning Policies

Alternatives 4 and 5 ranked first with respect to this factor, while Alternatives 2 and 3 ranked last.

Alternative 4 conforms to the Port Glasgow Secondary Plan since the plan specifically requires private communal sanitary sewage works for all classes of new development and Plans of Subdivision in Port Glasgow. However, according to the PPS hierarchy for providing sewage services, communal systems of this type are the second most preferred after municipal sewage services.

Alternative 5 which makes use of the existing Rodney WWTF is consistent with the PPS policy that existing infrastructure should be optimized before considering the development of new infrastructure. Also, according to the PPS' hierarchy for providing sewage services, municipal sewage services are the preferred form of servicing. However, the long forcemain required to connect Seaside to the Rodney WWTF has the potential to impact the significant resources protected by the PPS, including natural and archaeological resources.

Similar to Alternative 4, Alternatives 2 and 3 are the second most preferred form of servicing. However, Alternatives 2 and 3, both involving subsurface discharge, potentially adversely affect a perched aquifer located on the Seaside site. The aquifer could be considered to be "vulnerable" by the PPS, meaning that it can be easily changed or impacted. The PPS includes policies protecting vulnerable groundwater resources.

Technical Performance and Economics

Alternative 4 ranked first with respect to technical performance and economics, while Alternative 5 ranked second. Alternative 3, Centralized Private Communal WWTF with Subsurface Discharge, ranked third. Alternative 2, Clustered Private Communal WWTFs with Subsurface Discharge, ranked last. The reasons for these rankings are:

- For Alternative 5, the technical performance of the Rodney WWTF would be equal to Alternative 4 since wastewater conveyed to the Rodney facility would be treated to the same effluent quality as a communal plant. However, this alternative requires an expansion of the Rodney WWTF to treat sewage from Seaside, plus the completion of a Schedule 'C' Class EA. With the required plant expansion, pump station and a 10 km long forcemain to Rodney, Alternative 5 will be significantly more costly than Alternative 4
- With Alternatives 2 and 3, Seaside's proposed multi-unit residential, commercial development and community centre would likely not be feasible due to the land areas required to treat wastewater flows generated. Also, due to the low hydraulic conductivity of the subsoils within the Seaside Lands, private sewage disposal systems would likely require large basal contact areas constructed of imported sand. If bed failure occurs, the owner will incur considerable expense for repairs.

4.8 Preferred Sanitary Sewage Servicing Solution

Alternative 4, Centralized Private Communal WWTF with Surface Water Discharge, was selected as the preferred wastewater servicing solution, as shown on Table 4.3. Compared with the other alternatives, Alternative 4 has the following advantages:

- It has the least impact on the natural environment and natural heritage features;
- It is preferred with respect to public health and safety;
- Alternative 4 has the least impact on the social and cultural environment;
- It conforms to the Port Glasgow Secondary Plan and is the most consistent with the PPS; and
- It is preferred with respect to technical performance and economics.

Along with the preferred SWM solution, the preferred wastewater servicing solution was further refined during Phase 3 of the Class EA process, as summarized in Section 5 of this ESR.

5.0 Phase 3, Conceptual Design of Preferred Solutions

5.1 Introduction

In summary, the preferred stormwater and wastewater servicing solutions chosen during Phase 2 of the Class EA process consisted of:

- Stormwater management -
    - Low Impact Development (LID) SWM measures, combined with decentralized SWM facilities for water quantity and quality and erosion control (Alternative 7)
- Wastewater Treatment -
    - A centralized private communal wastewater treatment facility (WWTF) with surface water discharge (Alternative 4).

These preferred solutions were further refined during Phase 3, Design Concepts. This phase consisted of the identification and evaluation of design options to implement the preferred solutions. Preferred designs for the proposed stormwater and wastewater services were chosen at the end of Phase 3.

5.2 SWM Design Concepts

SWM design concepts were developed for the site's three sub-catchment areas, as shown on Figures 5.1 to 5.4. Two design concepts were developed for each sub-catchment area.

East Tableland with Stormwater Outlets to Port Glasgow Marina Basin

- Design Concept 1A – LID measures and an extended detention wet pond at Alternative Locations 1 and 2, east of Havens Lake Road. Location 1 is adjacent to the upper ravine, Location 2 is in the upper ravine.
- Design Concept 1B – LID measures and bioretention areas at Locations 1, 2 and 3. Location 3 is in the upper ravine, west of Douglas Line.

Havens Lake Road with Stormwater Outlets to Port Glasgow Marina Basin

- Design Concept 2A – LID measures, oil grit separators (OGS) and upgrade the existing drainage system at Alternative Location 4. Alternative Location 4 is in the south segment of the watercourse east of Havens Lake Road.
- Design Concept 2B – LID measures and use the existing drainage system at Alternative Location 4.

The stormwater design concept for this area could include urban bioswales and roadside bioswales. The design will be sufficiently flexible to accommodate future commercial and mixed-use development in this area.

West Tableland with Stormwater Outlets to Sixteen Mile Creek.

- Design Concept 3A – LID measures and a constructed wetland at Alternative Locations 5 or 6 discharging to Sixteen Mile Creek. Alternative Location 5 is located on a wetland constructed by the Municipality and consists of forb mineral meadow marsh (Community 14a). Alternative Location 6 is located at a low point in the creek valley.
- Design Concept 3B – LID measures, tableland bioretention areas and stilling basins at Alternative Locations 5 or 6.

Figure 5.1 East Tableland SWM Design Concept A

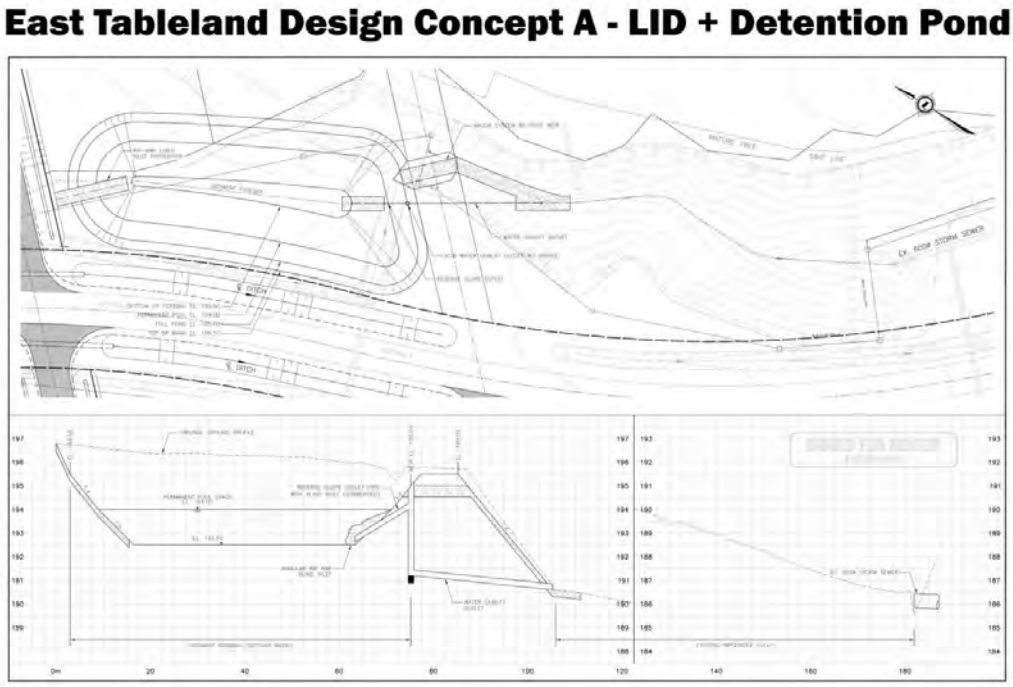


Figure 5.2 East Tableland SWM Design Concept B

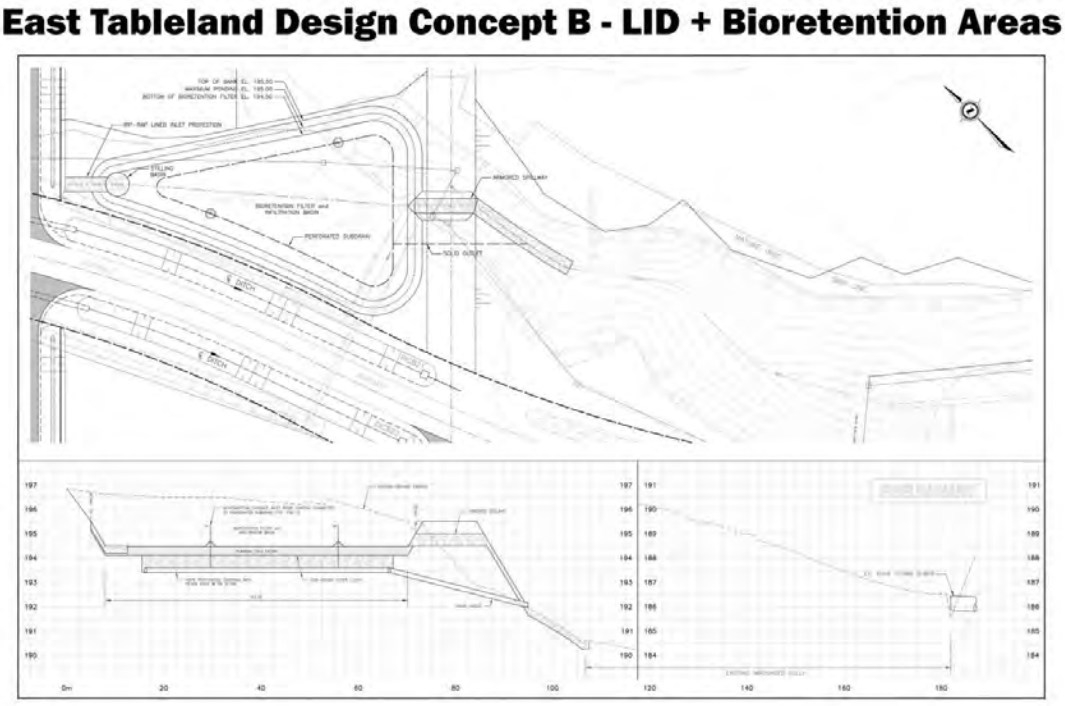


Figure 5.3 West Tableland SWM Design Concept A

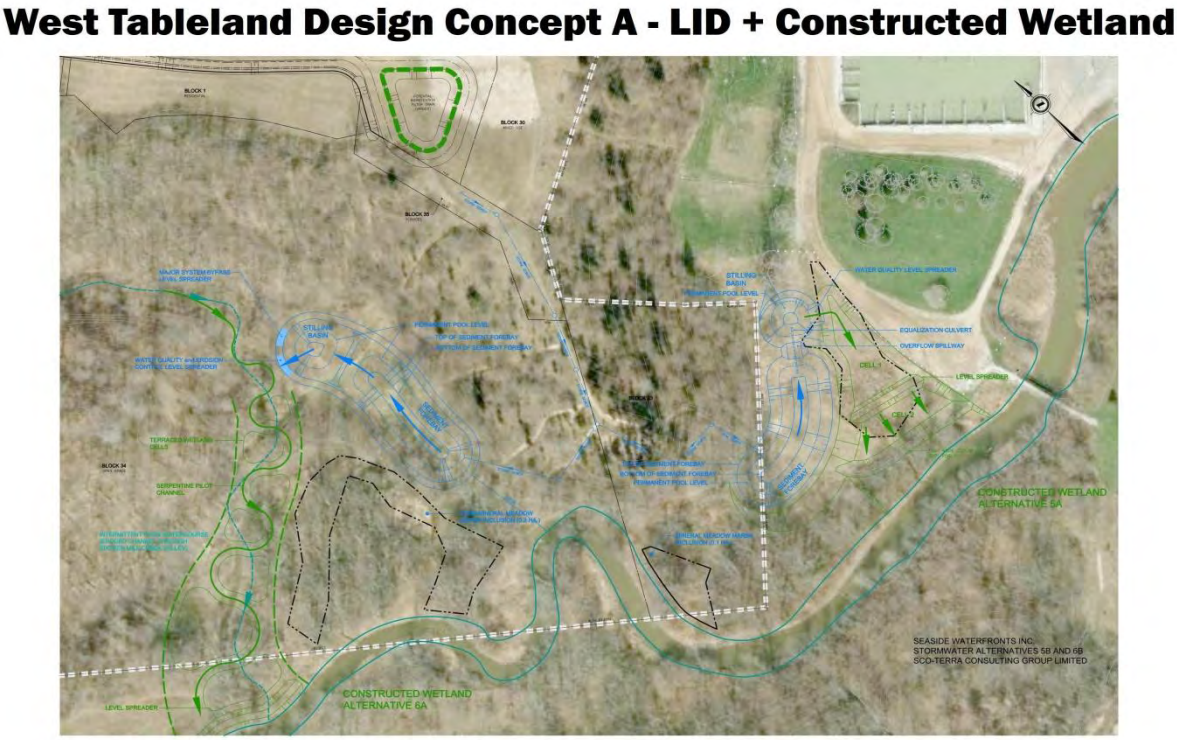
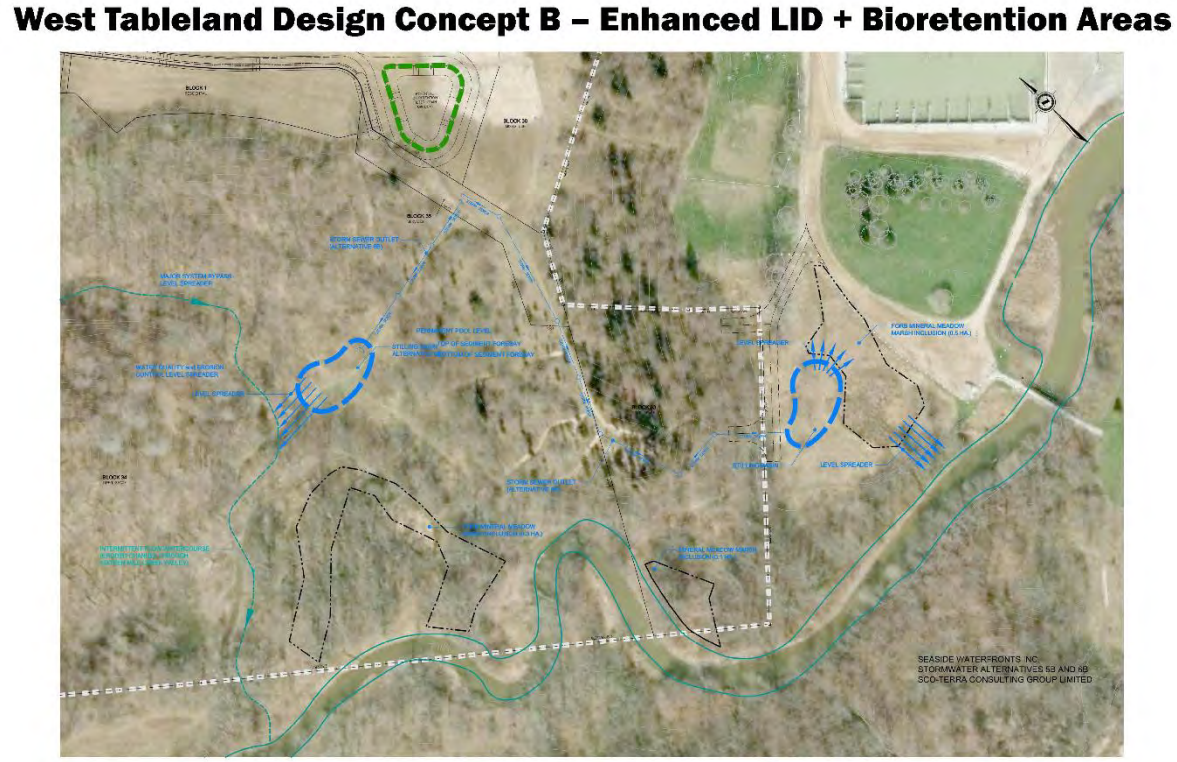


Figure 5.4 West Tableland SWM Design Concept B



5.3 SWM Evaluation Factors and Criteria

The following evaluation factors and criteria were used to evaluate the SWM design concepts:

Natural Environment and Heritage Features

This factor was given a weight of 25% for the overall evaluation and included the following criteria:

- Fisheries and aquatic resources;
- Vegetation and flora;
- Wildlife and linkages;
- Surface water resources;
- Groundwater resources; and
- Endangered species.

Public Health and Safety

Given a weight of 25%, this evaluation factor covered the following criteria:

- Ability to achieve environmental targets;
- Recreational use of surface waters; and
- Flood control requirements.

Social and Cultural Environment

Since impacts on archaeological resources can readily be mitigated by the preparation of archaeological assessments and there are no significant built heritage resources or cultural heritage landscapes potentially affected by Seaside's proposed wastewater services, this factor was given a weight of 10%.

It included the following criteria:

- Existing Community;
- Existing Residential Area;
- Archaeological Resources; and
- Cultural Heritage.

Technical Performance

This factor was given a weight of 20% and included the following criteria:

- Water quality and erosion control;
- Flood control capacity; and
- Outlet structure requirements.

Economics

Given a weight of 20%, economics covered the following criteria:

- Capital cost;
- Net impact on development viability; and
- Phasing.

5.4 Evaluation of SWM Design Concepts and Preferred Approach

The evaluations of the SWM design concepts for the three drainage areas are shown on **Tables 5.1 to 5.5**. A summary of the evaluation is shown on **Table 5.6.**

Significant negative impact on the Environmental Planning Target

Moderate negative impact on the Environmental Planning Target

Minor negative impact on the Environmental Planning Target

Meets the Environmental Planning Target

Meets and exceeds the Environmental Planning Target

Table 5.1 Evaluation of Stormwater Design Concepts - Natural Environment

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
Category A – Natural Environment / Natural Heritage Features (25% weight)						
A. Fisheries and Aquatic Resources						
B. Vegetation and Flora						
C. Wildlife and Linkages						
D. Surface Water Resources						
E. Groundwater Resources						
F. Endangered Species Habitat						
Category Rating	1	2	2	1	1	1

Table 5.2 Evaluation of Stormwater Design Concepts - Public Health and Safety

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
Category B – Public Health and Safety (25% weight)						
1. Ability to Achieve Environmental Targets						
2. Recreational Use of Surface Waters						
3. Flood Control Requirements						
Category Rating	1	2	1	1	1	1

Table 5.3 Evaluation of Stormwater Design Concepts - Social and Cultural Environments

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
Category C – Social and Cultural Environment (10% weight)						
1. Existing Community						
2. Existing Residential Areas						
3. Archaeological Resources						
4. Cultural Heritage						
Category Rating	1	1	2	1	1	1

Table 5.4 Evaluation of Stormwater Design Concepts - Technical Performance

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
Category D – Technical Performance (20% weight)						
1. Water Quality and Erosion control						
2. Flood Control Capacity						
3. Outlet Structure Requirements						
Category Rating	1	2	2	1	2	1

Table 5.5 Evaluation of Stormwater Design Concepts - Economics

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
Category E – Economics (20% weight)						
1. Capital Cost						
2. Net Impact on Development Viability						
3. Phasing						
Category Rating	2	1	2	1	1	1

Table 5.6 Summary of Evaluation of Stormwater Design Concepts

Evaluation Criteria	Havens Lake Road (marina basin)		East Tableland (marina basin)		West Tableland (Sixteen Mile Creek)	
	Design Concept A	Design Concept B	Design Concept A	Design Concept B	Design Concept A	Design Concept B
	LID + Oil Grit Separators + Upgrade Existing	LID + Existing Drainage System	LID + Detention Pond	LID + Bioretention Areas	LID + constructed Wetland	LID + Bioretention Areas
All Categories (100%)						
A. Natural Environment/ Natural Heritage Features	1	2	2	1	1	1
B. Public Health and Safety	1	2	1	1	1	1
C. Social and Cultural Environments	1	1	2	1	1	1
D. Technical Performance	1	2	2	1	2	1
E. Economics	2	1	2	1	1	1
Overall Performance	**1**	**2**	**2**	**1**	**2**	**1**

East Tableland with Stormwater Outlets to Port Glasgow Marina Basin

Design Concept 1B, LID and extended detention pond at Locations 1 and 2, ranked first for all five evaluation factors while Design Concept 1A, LID and bioretention areas at Locations 1, 2 and 3, ranked second for all factors. Design Concept 1A has moderate negative impacts on vegetation and flora and minor negative impacts on many of the criteria for all five evaluation factors.

Overall, **Design Concept 1B ranked the highest for this drainage area**.

Based on Design Concept 1B, the preferred SWM approach for the East Tableland has the following features:

- LID measures proposed at the lot level and block level include rain barrels, rain gardens, bioretention areas, level spreaders and vegetated filter strips;
- A roadside bioswale conveyance system to resemble a rural road cross-section;
- Water quality and erosioin control targets will be achieved by the LID measures;
- To supplement the LID measures, the impounded portion of the gully can potentially be used for flood control during infrequent storm events and will be controlled from post-development to pre-development levels;
- Slope stabilization and revegetation of the gully will be considered; and
- The LID measures will outlet to the existing drainage features, including the piped storm sewers and open channel intermittent watercourse and ultimately to the marina basin.

Havens Lake Road with Stormwater Outlets to Port Glasgow Marina Basin

Design Concept 2A, LID, OGS and Upgrade Existing Drainage System at Location 4, and Design Concept 2B, LID and Existing Drainage System at Location 4, were ranked equally with respect to the social and cultural environment.

Design Concept 2B was ranked second for the following four factors:

- Natural environment and natural heritage features because it has more substantial outlet structure requirements potentially causing more impacts;
- Public health and safety since it does not fully meet environmental targets and flood control requirements and has minor negative impacts on the recreational use of surface water; and
- Technical performance, in terms of water quality and erosion control and flood control capacity. As mentioned, Design Concept 2B also has more significant outlet structure requirements compared to Design Concept 2A.

Design Concept 2A was ranked second for economics since it is costlier to construct than Design Concept 2B.

Overall, Design Concept 2A ranked the highest for the Havens Lake Road drainage area. Based on Design Concept 2A, the preferred SWM approach for this area includes the following:

- LID measures, such as rain gardens and bioswales, are proposed for the block level of development. A roadside urban bioswale system will be incorporated into the future upgrade of Havens Lake Road.
- The preferred approach optimizes the use of the existing drainage system, east of Havens Lake Road, including the piped storm sewers and open channel intermittent watercourse. The LID measures will outlet to the marina basin.
- Water quality and erosion control targets will be achieved by the LID measures and OGS
- For less frequent storm events, peak run-off will be controlled to the capacity of the existing stormwater outlet.
- Roof runoff will be directed away from Havens Lake Road where feasible, subject to the future site planning of individual blocks.

West Tableland with Stormwater Outlets to Sixteen Mile Creek.

Design Concept 3A, LID measures and Constructed Wetland at Alternative Locations 5 or 6, and Design Concept 3B, LID measures and Bioretention Areas at Alternative Locations 5 or 6, were ranked equally with respect to all factors except for technical performance. Although Design Concept 3A meets water quality and erosion control targets, Design Concept 3B results in a net benefit for this target.

Although Design Concepts 3A and 3B ranked equally, Design Concept 3A was chosen as the preferred design concept because it would have a lower initial capital cost, as well as lower ongoing maintenance costs compared to the biorentention areas in Concept 3B. The main features of Design Concept 3A include the following:

- LID measures proposed at the lot/block level include rain barrels, rain gardens, bioretention areas, level spreaders and vegetated filter strips;
- A roadside bioswale conveyance system resembling a rural road cross-section;
- Water quality and erosion control targets will be achieved by LID measures;

- Stormwater will be conveyed by a storm sewer to a stilling basin and level spreader outlet in the Sixteen Mile Creek valley at Alternative Locations 5 or 6; and
- A constructed wetland, for further stormwater polishing and nutrient uptake, was also considered at Alternative Locations 5 or 6.

Alternative Locations 5 and 6 were further evaluated and refined. A constructed wetland at Alternative Locations 5 or 6 provides an opportunity to stabilize and improve the habitat of the existing forb mineral meadow marshes at these two locations. It could improve the aquatic habitat of Sixteen Mile Creek, create direct fish habit and create endangered species habitat. Currently, Alternative Location 5 provides a limited habitat function but, when integrated with a SWM function, it has more potential than Alternative Location 6 for improving natural heritage features. For this reason, Alternative Location 5 was chosen as the preferred site for the stilling basin, level spreader outlet and stilling basin.

Location 5 was subsequently refined to Location 5B, the site of a wetland constructed by the Municipality of West Elgin. The wetland is classified as a forb mineral meadow marsh (Vegetation Community 14b). Since it was approved by the Department of Fisheries and Oceans (DFO), any changes to the wetland require DFO approval.

5.5 Summary of Preferred SWM Design Concepts

The following design concepts were selected for SWM in the three sub-catchment areas:

- Design Concept 1B for the East Tablelands, consisting of LID measures and extended detention ponds at Locations 1 and 2;
- Design Concept 2A for Havens Lake Road, consisting of LID measures, OGS and upgrade the existing drainage system at Location 4; and
- Design Concept 3A for the West Tablelands, consisting of LID measures, a stilling basin, level spreader outlet and constructed wetland at Location 5B.

In summary, the preferred approach for SWM in Seaside converts stormwater run-off from wastewater to a resource. The LID measures planned for the development, including lot level, block level and roadside bioswale conveyance systems, are capable of returning water of an enhanced quality to the natural environment. The water quality and erosion control targets achieved by the LID measures will provide aquifer recharge and stream base flow beneficial to groundwater and surface water resources.

5.6 WWTF Design Considerations

Five WWTF design concepts were identified to implement the preferred wastewater servicing solution. All design concepts consist of a centralized private communal WWTF providing a tertiary level of treatment with the capacity to treat Seaside's design sanitary sewage flows. Treated effluent from the facility will meet the effluent quality criteria shown on Table 5.7 (in Section 5.8 of this ESR). Continuous surface water discharge will be provided to a suitable receiving watercourse.

Other design considerations include the following:

- Incorporate flow equalization for a consistent feed rate for optimal treatment;
- Incorporate proven wastewater treatment technologies for optimum effluent quality;
- Robust filtration and disinfection systems for superior bacteriological quality;

- Provide effluent storage capacity in the event of a critical equipment or process issue;
- Discharge effluent to a dry ditch or wetland feature for polishing and nutrient uptake;
- Mitigate impacts on Sixteen Mile Creek and Lake Erie water quality and fishery;
- Protect public health for recreational use of public beaches;
- Fully enclose WWTF with underground tankage and building (no open tankage); and
- Separate the WWTF from public use facilities, such as the Port Glasgow Marina.

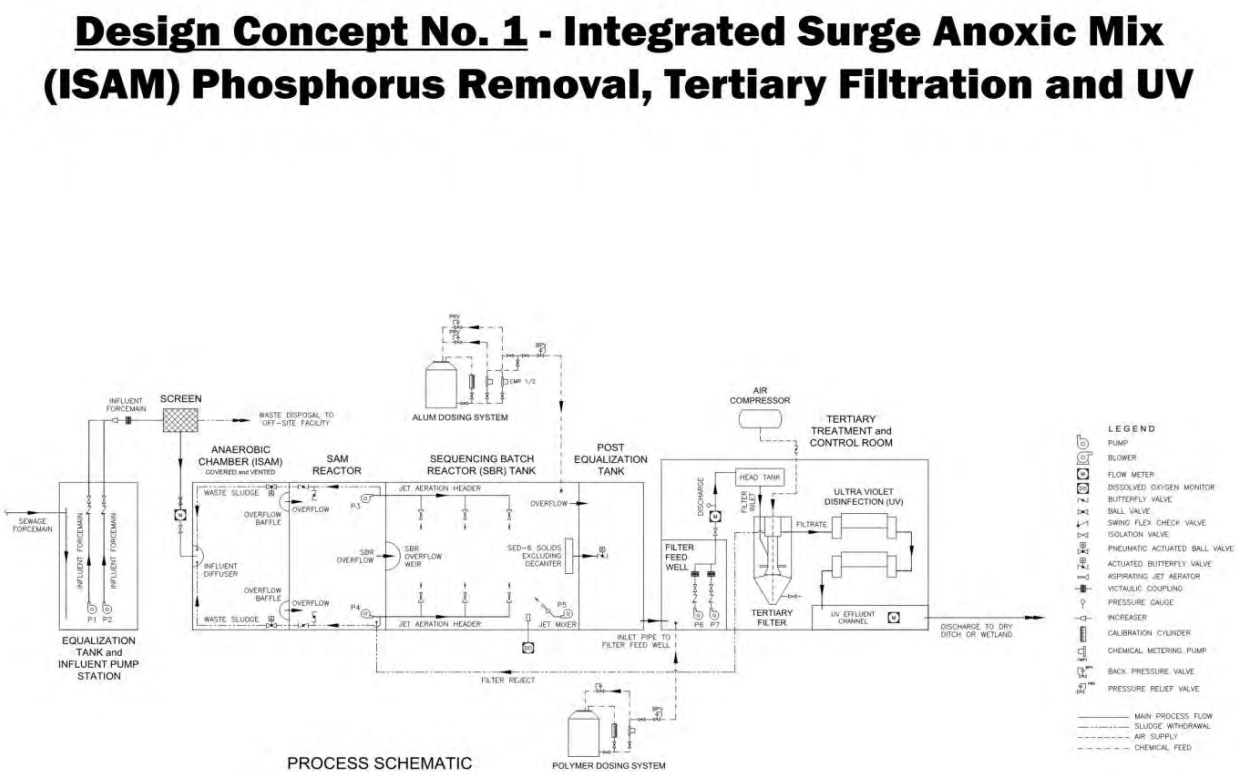
5.7 WWTF Design Concepts

As shown on Figures 5.5 to 5.9, the five WWTF design concepts include the following types of treatment systems:

- Design Concept 1, Integrated Surge Anoxic Mix (ISAM), Phosphorus Removal, Tertiary Filtration and UV;
- Design Concept 2, Membrane Bioreactor (MBR), Phosphorous Removal, Membrane Filtration and UV;
- Design Concept 3, Moving Bed Biofilm Reactor (MBBR), Phosphorous Removal, Tertiary Filtration and UV;
- Design Concept 4, Rotating Biological Contactor (RBC), Phosphorous Removal, Tertiary Filtration and UV; and
- Design Concept 5, Sequencing Batch Reactor (SBR), Phosphorus Removal, Tertiary Filtration and UV.

With all design concepts, it is anticipated the owner of the WWTF will be the condominium corporation.

Figure 5.5 Wastewater Design Concept 1



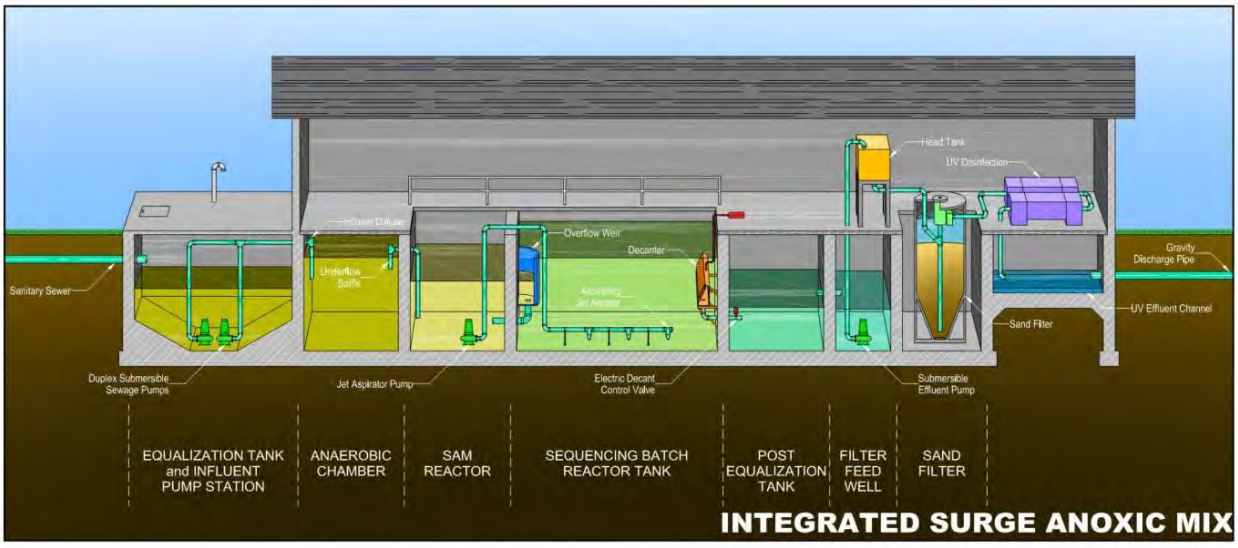
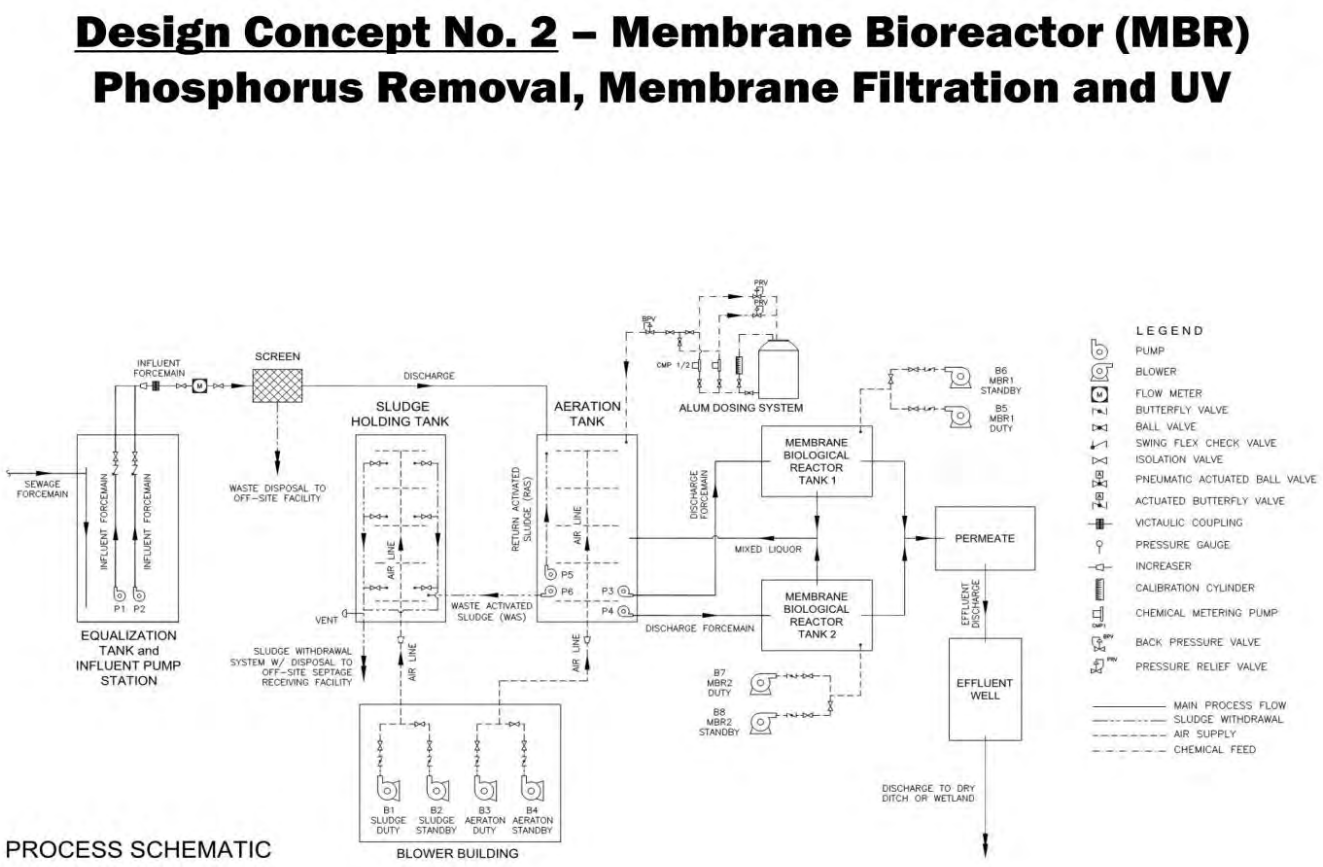


Figure 5.6 Wastewater Design Concept 2



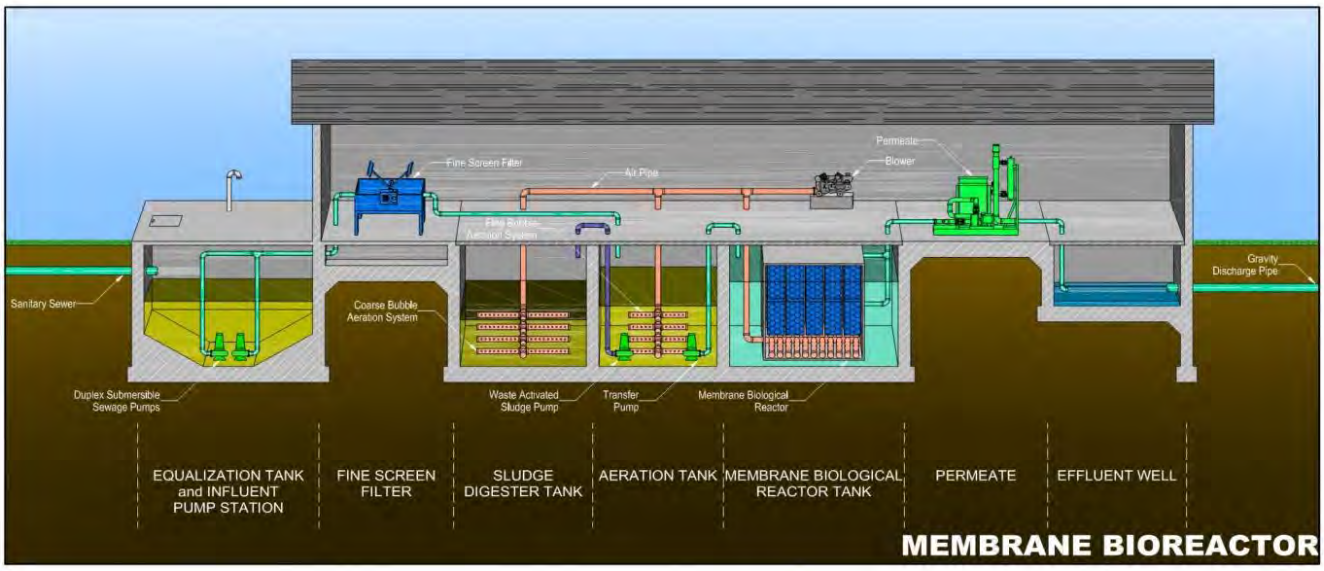


Figure 5.7 Wastewater Design Concept 3

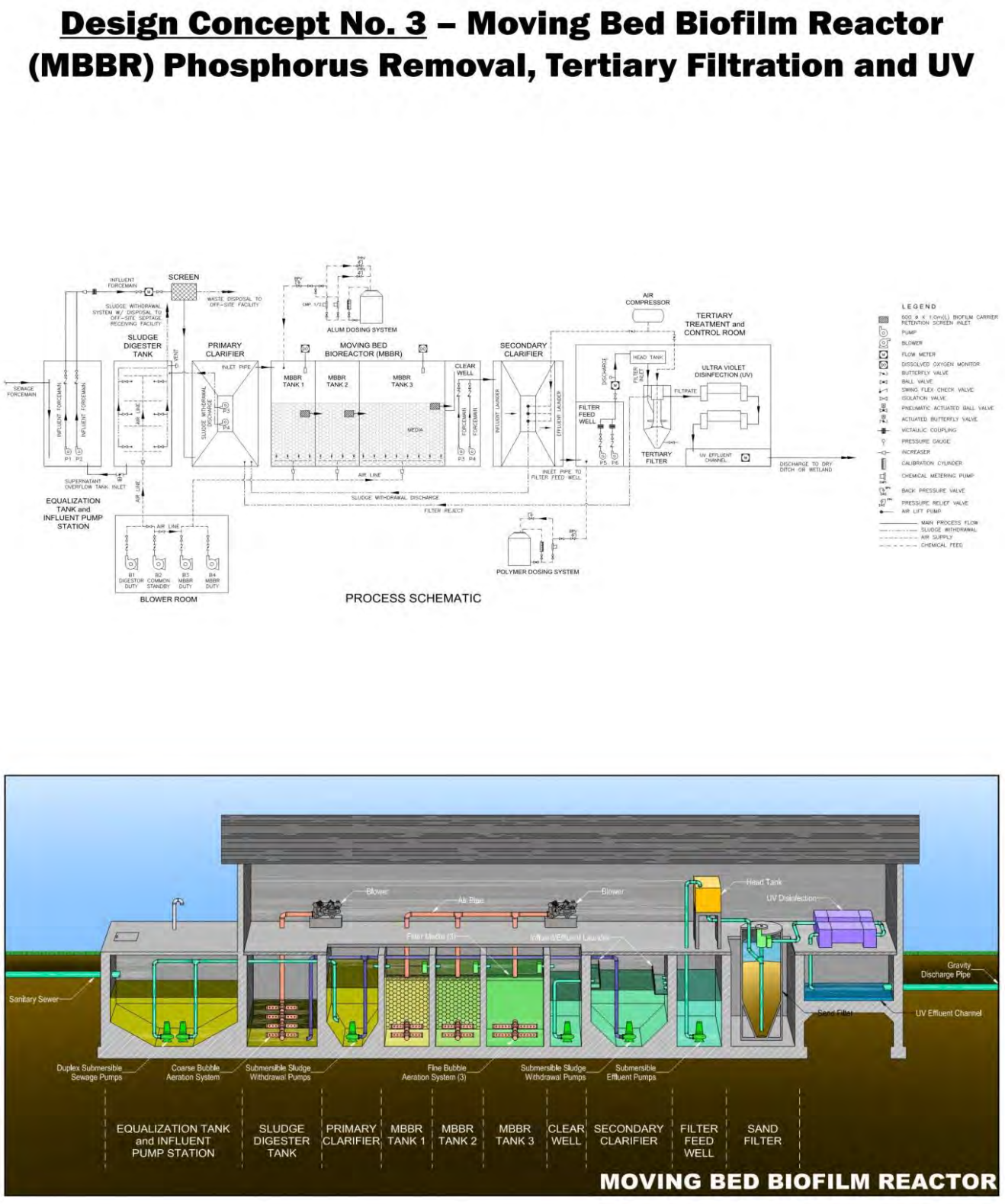
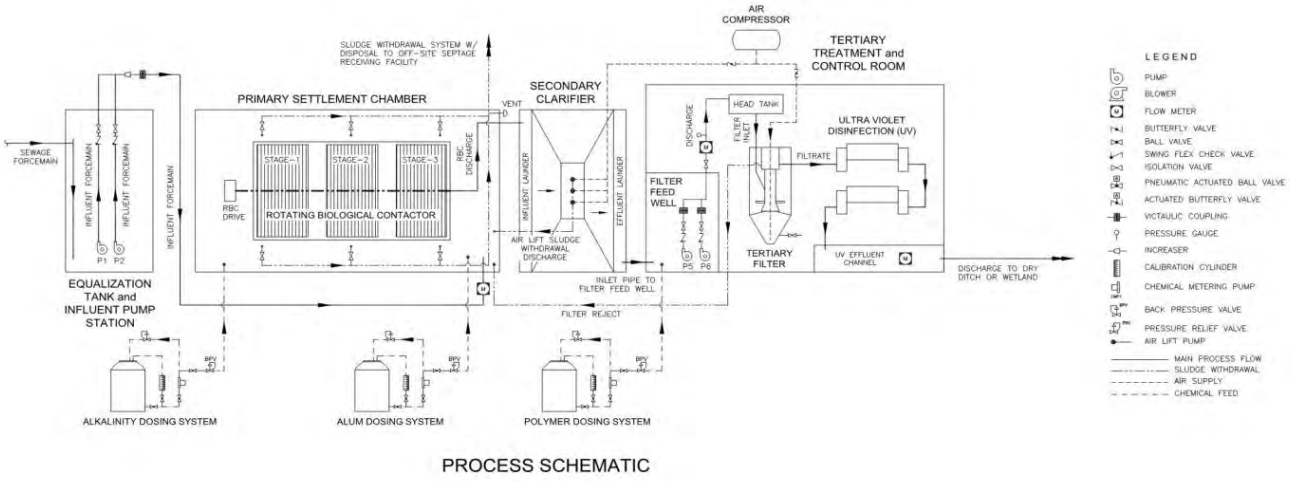


Figure 5.8 Wastewater Design Concept 4

Design Concept No. 4 – Rotating Biological Contactor (RBC) Phosphorus Removal, Tertiary Filtration and UV



PROCESS SCHEMATIC

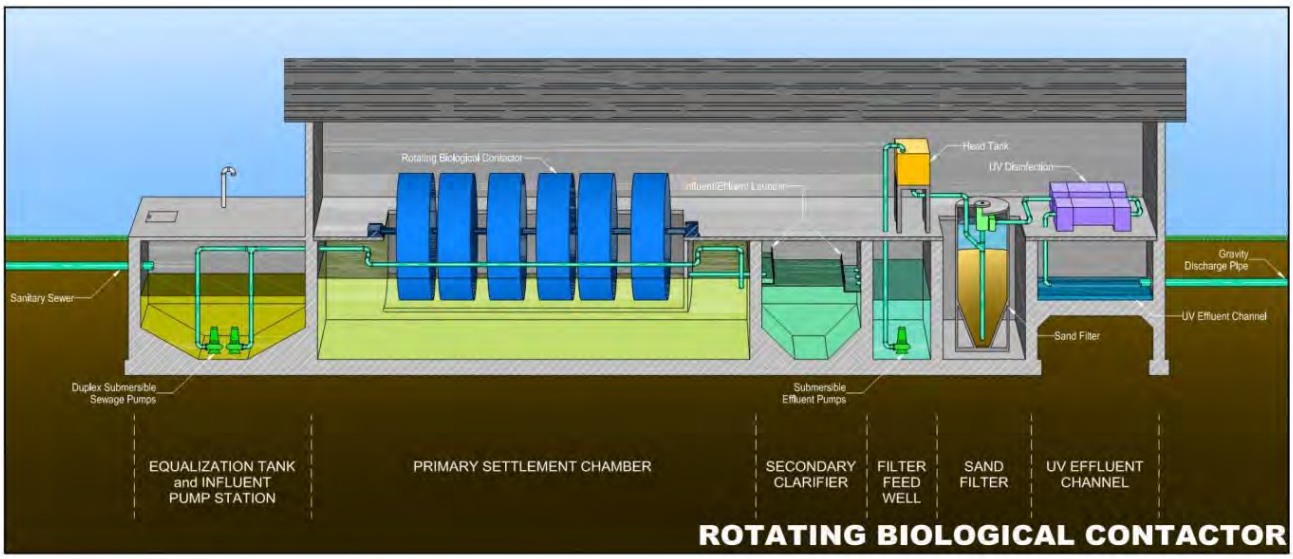
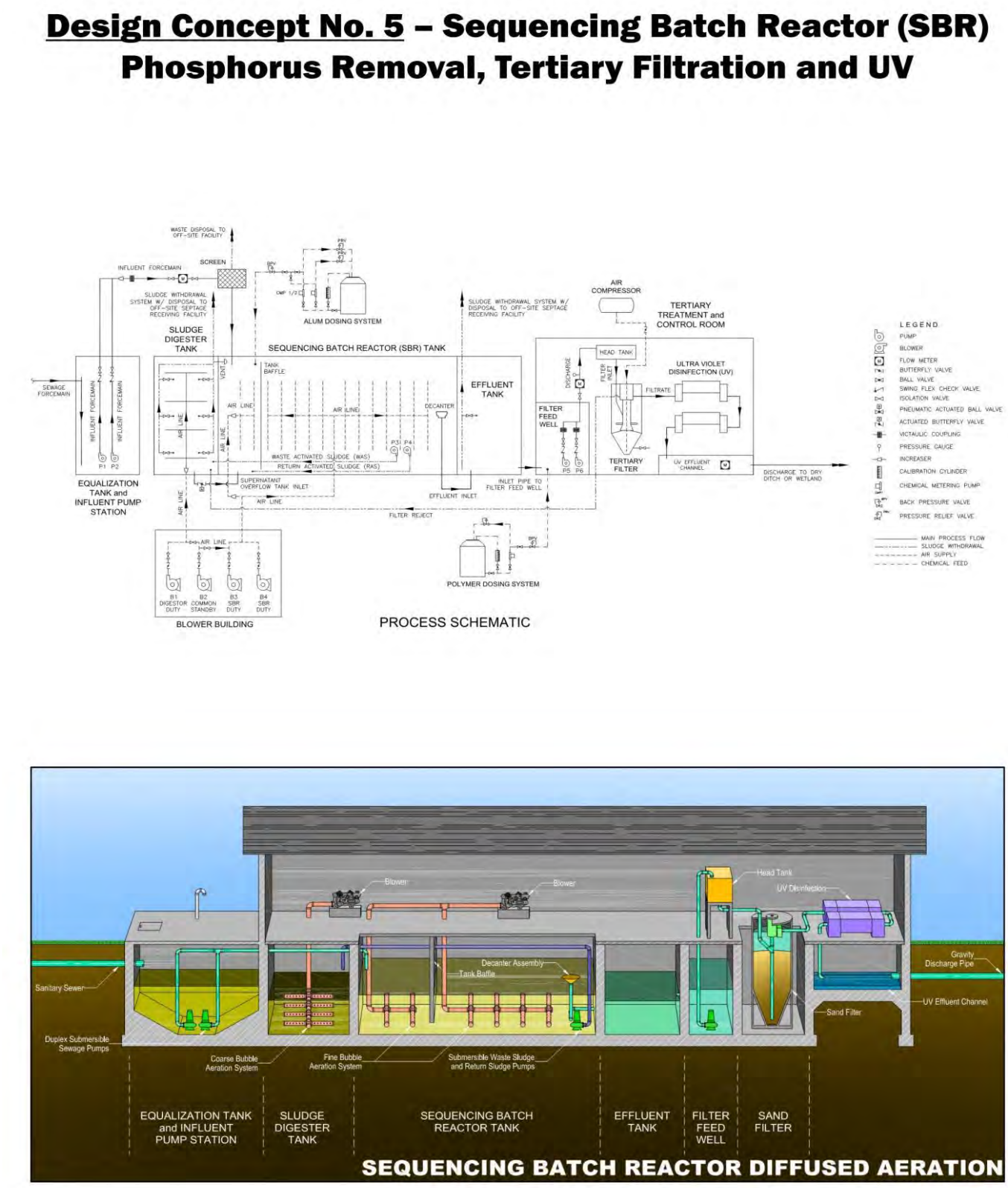


Figure 5.9 Wastewater Design Concept 5



5.8 WWTF Preferred Receiver and Location

Two alternative receiver streams were considered for the WWTF, including an intermittent watercourse east of Havens Lake Road and Sixteen Mile Creek/Lake Erie. Since the watercourse east of Havens Lake Road is intermittent and the ravine and woodlands along the watercourse are protected by an “Open Space” designation in the Port Glasgow Secondary Plan, Sixteen Mile Creek/Lake Erie was chosen as the preferred receiver for the WWTF. Sixteen Mile Creek is a continuous flow watercourse running north to south through the west limit of the Seaside development. The recommended location for the discharge point is just upstream of the Sixteen Mile Creek confluence.

The area around the mouth of Sixteen Mile Creek is prone to flooding resulting from sand buildup along the shoreline of Lake Erie during large storm events. During detailed design, the cause of the buildup of sand will be further analysed. A design solution will then be developed to prevent the sand buildup and backup of Sixteen Mile Creek.

The WWTF will require a site of approximately 0.1 hectare to accommodate the facility in an enclosed building with no outdoor tanks. No buffer is required because the system will be in an enclosed building.

Two alternative locations were identified, as shown on **Figure 5.10**. Alternative Location 1 is located in the southwest corner of the Seaside site. Location 2 is located in the southeast portion, east of Havens Lake Road. Location 1 was selected as the preferred location since it is located close to the preferred discharge point of Sixteen Mile Creek, thereby eliminating the need for a pump station. Also, it is located farther away than Location 2 from existing residential development in Port Glasgow and planned residential development in Seaside. As a result, it is expected to have no negative noise, odour or aesthetic impacts on sensitive land uses.

The preferred site at Location 1 can be located on Block 33 (0.87 hectare) in the Seaside Draft Plan of Subdivision/Condominium. This block has been reserved for services. At this location, treated effluent from the WWTF can discharge to the constructed wetland for polishing and nutrient uptake, then to Sixteen Mile Creek and ultimately to Lake Erie. The constructed wetland (at preferred Location 5B) is also part of the development’s planned SWM facilities.

Figure 5.10 Alternative Wastewater Treatment Facility Locations

5.9 WWTF Effluent Quality Criteria

Effluent quality criteria for the proposed Seaside WWTF were established through pre-consultation with the Ministry of the Environment (now MECP) in January 2011. The proposed criteria, in conjunction with continuous surface water discharge of treated effluent to Sixteen Mile Creek, meet or exceed MECP "dry- ditch discharge" criteria. The criteria are based on the principle of best available technology economically achievable (BATEA), as supported by the development proponent.

The effluent quality criteria shown on the following table will be verified through subsequent assessment of the receiving stream, the detailed design of the WWTF and the submission of an Environmental Compliance Approval application to MECP.

Table 5.7 Seaside WWTF Effluent Quality Criteria

SEASIDE WWTF EFFLUENT QUALITY CRITERIA				
Parameter	**Effluent Objective Criteria**		**Effluent Limit Criteria**	
	Summer	Winter	Summer	Winter
$cBOD_5$ (mg/L)	5	5	10	10
Suspended Solids (mg/L)	5	5	10	10
Total Phosphorus (mg/L)	0.15	0.15	0.3	0.3
Ammonia Nitrogen (mg/L)	2	4	3	5
E. coli (CFU/100 ml)	<50 cfu/100ml		<100 cfu/100ml	

The effluent 'design objective' and ‘compliance criteria’ shown in the table reflect the relatively stringent compliance limits for CBOD5, Suspended Solids, Total Phosphorus, Ammonia-Nitrogen and E. coli typically associated with dry-ditch discharge in Ontario, as previously discussed with MECP. The proposed effluent quality is intended to mitigate impact on the natural environment, including the primary (Sixteen Mile Creek) and terminal (Lake Erie) receiving surface water resources. As discussed with MECP, redundant ultra violet disinfection treatment units following tertiary filtration will achieve destruction of E.coli to non-detect limits, thereby protecting downstream water resources and the public use of these resources.

5.10 Evaluation of WWTF Design Concepts

Evaluation factors and criteria used to evaluate Design Concepts 1 to 5 are shown on **Tables 5.8 to 5.12.**

Table 5.8 Evaluation of Wastewater Design Concepts - Natural Environment

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
Category A – Natural Environment / Natural Heritage Features (25% weight)					
1. Fisheries and Aquatic Resources					
2. Vegetation and Flora					
3. Wildlife and Linkages					
4. Surface Water Resources					
5. Groundwater Resources					
6. Endangered Species Habitat					
Category Rating	1	1	1	1	1

Table 5.9 Evaluation of Wastewater Design Concepts - Public Health and Safety

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
Category B – Public Health and Safety (25% weight)					
1. Ability to Achieve Water Quality Targets					
2. Recreational Use of Surface Waters					
3. System Reliability					
Category Rating	1	1	1	1	1

Table 5.10 Evaluation of Wastewater Design Concepts - Social and Cultural Environment

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
Category C – Social and Cultural Environment (10% weight)					
1. Existing Community					
2. Existing Residential Area					
3. Archaeological Resources					
4. Cultural Heritage					
Category Rating	1	1	1	1	1

Table 5.11 Evaluation of Wastewater Design Concepts - Technical Performance

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
Category D – Technical Performance (20% weight)					
1. Effluent Quality					
2. Process Reliability					
Category Rating	1	1	1	1	1

Table 5.12 Evaluation of Wastewater Design Concepts - Economics

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
Category E – Economics (20% weight)					
1. Capital Costs					
2. Ability to Phase					
Category Rating	2	1	1	2	2

Impacts on Natural Environment/Natural Heritage Features - 25% weight
As shown on **Table 5.8**:

- All five design concepts are equal with respect to impacts on fisheries and aquatic resources since all will have no negative impacts on water quality and flows in Sixteen Mile Creek. In addition, all design concepts will help improve the aquatic habitat of the constructed wetland.
- Development of the site required for all five design concepts will have minor negative impacts on the vegetation located on Block 33, wildlife and natural linkages. Vegetation impacts include the removal of a small portion (0.05 ha) of fresh moist deciduous forest (Vegetation Community 12), temporary disturbance and enhancement of a cultural dry-moist old field meadow (Vegetation Community 14), with a forb mineral meadow marsh (Vegetation Community 14b, the site of the constructed wetland), and temporary disturbance of a red cedar cultural woodland (Vegetation Community 15).
- All five design concepts meet the project's environmental targets for surface and groundwater protection.

- All five design concepts potentially have minor negative impacts on the habitats of species of provincial conservation concern. Potential impacts include impacts on the habitat of Snapping Turtles (Special Concern), foraging habitat for Milksnake (Special Concern) and Painted Skimmer and Swamp Darner Dragonflies (Provincially S-Ranked).

Based on this evaluation, all design concepts are equal with respect to impacts on natural environment/heritage features.

Public Health and Safety - 25% weight

As shown on **Table 5.9,** all design concepts meet the project's planning targets for the ability to meet water quality targets, recreational use of surface waters, including swimming and fishing, and system reliability.

Social and Cultural Environment - 10% weight

All design concepts are equal with respect to the following criteria, as shown on Table 5.10:

- Negative impacts on the existing community of Port Glasgow and residential uses, such as noise and odour, are not expected due to the distance of the facility from these areas.
- All five design concepts conform to the West Elgin Official Plan and Port Glasgow Secondary Plan which permit public services, such as the WWTF, in all land use designations. The site for the WWTF is designated "Open Space" and "Woodlands" in the Secondary Plan. The constructed wetland is part of an area designated "Waterfront Amenity and Attraction". The site can be designed to avoid LTVCA's "Critical Regulated Area" (48 metres from Sixteen Mile Creek) covering the western half of Block 33.
- All design concepts are consistent with the PPS' servicing hierarchy and policies regarding the wise use and management of resources.
- The development of the site is expected to have no impacts on archaeological resources. Archaeological assessments completed for the Seaside development concluded that the steep ravines along Sixteen Mile Creek, including Block 33, have low archaeological potential due to steep topography. These areas, including the site of the proposed wastewater facilities, were not surveyed. No further archaeological assessments of these areas are required.
- All five design concepts will have some minor negative cultural heritage impacts because the development of the site will impact the old recreational trails that go through this area.

Technical Performance - 20% weight

All five design concepts meet the effluent quality criteria set for the facility, as shown on **Table 5.11.** With the exception of Design Concept 4, Rotating Biological Contactor (RBC), all five meet the project's targets for process reliability.

Economics - 20% weight

As shown on **Table 5.12**, Design Concepts 1, Integrated Surge Anoxic Mix (ISAM), 4, Rotating Biological Contactor (RBC), and 5, Sequencing Batch Reactor (SBR) are ranked lower than Design Concepts 2, Membrane Bioreactor (MBR) and 3, Moving Bed Biofilm Reactor (MBBR), since they have a higher capital cost. Design Concepts 1, 4 and 5 are also ranked lower than Design Concepts

2 and 3 as a result of the limited capability for phased implementation which is necessary over the course of this development's execution.

All Factors – 100%

All five design concepts are equal with respect to impacts on the natural environment/natural heritage, the social and cultural environment and public health and safety, as shown on **Table 5.13**. For process reliability, Design Concept 4, the RBC treatment system, is less preferred. Design Concepts 1, 4 and 5 are less able than Design Concepts 2 and 3 to accommodate phased development.

Although Design Concepts 2, the MBR system, and 3, the MBBR treatment system, ranked equally, Design Concept 2 was selected as the preferred plant process option. This was due in large part to the initial capital cost comparisons. Design Concept 2 provided the same level of treatment quality and quantity at a lower cost.

Table 5.13 Summary of Evaluation of Wastewater Design Concepts

Evaluation Criteria	Design Concept 1 Integrated Surge Anoxic Mix	Design Concept 2 Moving Bed Biofilm Reactor	Design Concept 3 Membrane Bioreactor	Design Concept 4 Rotating Biological Contractor	Design Concept 5 Sequencing Batch Reactor
All Categories (100%)					
A. Natural Environment / Natural Heritage Features	1	1	1	1	1
B. Public Health and Safety	1	1	1	1	1
C. Social and Cultural Environment	1	1	1	1	1
D. Technical Performance	1	1	1	1	1
E. Economics	2	1	1	2	2
Overall Performance	**2**	**1**	**1**	**2**	**2**

5.11 Summary of Selected WWTF Design

In summary, the selected design consists of a centralized private communal WWTF on Block 33 of the Seaside development using a Membrane Bioreactor (MBR) treatment system with surface water discharge to a constructed wetland, Sixteen Mile Creek and ultimately to Lake Erie. The preferred design is described in more detail in Section 7 of this ESR.

6.0 Public and Agency Consultation

6.1 Introduction

This section of the ESR summarizes the public and agency consultation undertaken during the Class EA process. Consultation materials referred to in Section 6 are included in Appendix B. The names and addresses of private individuals are not included to comply with the Freedom of Information and Protection of Privacy Act.

6.2 Contact List

The Contact List for the project includes the Municipality of West Elgin, Elgin County, Provincial Ministries, the Lower Thames Valley Conservation Authority (LTCVA), First Nations, adjoining property owners and local residents. The list was updated throughout the project to include additional agency contacts and residents who attended the Public Meetings.

6.3 First Nations Engagement

A plan for the engagement of potentially interested First Nations/Aboriginal Peoples was developed in January and February 2013, in consultation with MECP's Regional Environmental Assessment (EA) Coordinator. Along with guidance about the "duty to consult", MECP provided a list of First Nations potentially interested in the development of Seaside. MECP also recommended that the Consultation Accommodation Unit of Aboriginal Affairs and Northern Development Canada (AANDC) be contacted to confirm the list.

A response was received in September 2013 from AANDC confirming the list of First Nations, along with information about treaties, claims and legal proceedings. Based on the information, there are no treaties, claims or legal proceedings affecting the Seaside lands.

The Aboriginal and Treaty Rights Information System (ATRIS) database was used in 2019 to update the list of First Nations. No new First Nations were added to the list developed in 2013. As shown on Figure 6.1, the following eight Aboriginal communities are located within 100 km of the Seaside development:

- Chippewas of Kettle and Stony Point First Nation;
- Munsee-Delaware Nation;
- Chippewas of the Thames First Nation;
- Delaware Nation, Moravian of the Thames;
- Caldwell First Nation, The People of the Lake;
- Oneida Nation of the Thames, ONYOTA'A:KA;
- Walpole Island First Nation, Bkejwanong Territory; and
- Aamjiwnaang First Nation.

Seaside's consultants sent a letter dated February 4, 2014, to the eight First Nations with information on the Seaside development and the status of the Class EA. Information received from AADNC, along with a "Briefing Document" dated February 2014, were enclosed with the letter. The Briefing Document outlined the Class EA process, the project's approach to First Nations consultation, environmental constraints, archaeological assessments completed to date and the SWM and wastewater alternatives currently being considered as part of Phase 2.

By e-mail dated May 3, 2014, Caldwell First Nation requested a meeting with Seaside's consultants to discuss potential impacts on water and aquatic life. The meeting took place in May 2014 at the Caldwell First Nation band office in Leamington with representatives of Sco-Terra Consultants and the First Nation. At the meeting, representatives of the First Nation stated that they support the proposed constructed wetland and LID SWM measures since they will improve fish habitat and water quality in Sixteen Mile Creek and Lake Erie. The First Nation also requested that native plant species be used for the constructed wetland and LID SWM measures. Seaside's consultants agreed with this request.

No other First Nations replied to the letter dated February 4, 2014.

A copy of the Notice of Completion for the ESR was mailed by letter dated August 1, 2019, to the eight First Nations on the project Contact List. The letter described the preferred wastewater servicing scheme, surface and groundwater impacts, impacts on natural heritage resources and impacts on cultural resources. Comments received from the Consultation Co-ordinator, Chippewas of the Thames First Nation, during the ESR 30-day review period are summarized in Section 6.8.

No other First Nations replied to the August 1, 2019, letter or the Notice of Completion. To ensure that there are no outstanding concerns, Seaside's consultants emailed a copy of the August 1 letter and Notice of Completion on November 19, 2019, to the First Nations which did not reply to the Notice of Completion, including Chippewas of Kettle and Stony Point First Nation, Munsee-Delaware Nation, Delaware Nation (Moravian of the Thames), Caldwell First Nation, Oneida Nation of the Thames, Walpole Island First Nation and Aamjiwnaang First Nation. The email requested that the First Nations call or email Seaside's consultants with any comments, questions or concerns.

No input was received from the seven First Nations in response to the November 19, 2019, email. On December 10 and 11, 2019, Seaside's consultants followed up with telephone calls, including detailed voicemail messages, to contacts at the First Nations. None of the calls were returned.

Figure 6.1 Aboriginal Communities within 100km of Seaside

6.4 Agency Review Meetings

Agency review meetings were held during the Class EA process at MECP's SW Regional Office. Major agency consultation activities included:

Agency Review of Draft Interim Report, June 2014

Seaside's consultants distributed a copy of a draft Interim Report dated June 2014 on the work completed during Phase 2 of the Class EA process to the agencies involved in the Class EA. Detailed comments were received from MMAH, MECP and LTCVA. The following comments were addressed in a letter dated October 22, 2018, from Seaside's consultant, subsequent changes made to the Draft Plan of Subdivision, work completed for Phase 3 and the preparation of this ESR.

MMAH Comments

As outlined in the Ministry's August 28, 2014, letter, MMAH's comments were:

- LTCVA's comments were not addressed;
- The report should explain the potential impacts of the preferred SWM alternative on the constructed wetland at Location 5;
- The volume of sewage which could be conveyed to the Rodney WWTF should be included;
- Consistency with the PPS and conformity to the West Elgin Official Plan needs to be addressed; and
- MNRF's comments on the 2011 EIS need to be addressed.

MECP

- MECP's comments, as noted in a letter dated August 28, 2014, included the following:
- The report includes a lot of duplication;
- The "Problem/Opportunity" is not clearly defined;
- The requirements for consultation with First Nations should be more "high level";
- The list of references does not have to be included in the main body of the report;
- The intent of Section 8, Data Collection and Assembly, is not clear;
- Section 9, Description of the Environment, should be organized into four main sections, including Natural, Cultural and Economic Environment;
- The Natural Environment section should describe natural environmental features, including the processes creating/sustaining the features;
- The part of Section 9 on local and Provincial planning policies should be included in a section on the Social Environment;
- Section 10, Seaside Development Areas, should be included in the "Problem/Opportunity" section;
- Sections 11, Environmental Planning Targets, and 12, Phase 2 Evaluation Methodology, should be combined into one section;
- The evaluation and weighting methodology are too complex and difficult to understand;
- The evaluation of individual, private on-site systems could be shortened by simply saying that it does not meet the Secondary Plan's servicing policies;
- The evaluation of the Rodney WWTF alternative should cover the PPS and Official Plan policies;
- The report should also cover Lake Erie water quality to determine effluent criteria;
- The purpose of including influent criteria should be explained;
- The evaluation criteria for the alternative wastewater solutions should cover the fact that MECP does not approve SWM and wastewater treatment facilities in flood prone areas, flood plains or wetlands; and
- The Ministry will require a responsibility agreement for the operation of the proposed WWTF.

LTCVA

LTVCA's comments included many concerns regarding the potential impacts of the proposed Draft Plan of Subdivision and SWM and wastewater treatment facilities on the site's natural heritage features. Based on these concerns, LTVCA requested that the site's development limits be reduced by restricting them to the drip-lines of mature treed areas. The Conservation Authority also requested that a geotechnical survey be completed to determine the stability of the slopes located on the site. Although LTVCA supported the LID approach to SWM, it requested that the size of end-of-pipe SWM facilities be minimized to minimize potential impacts on natural heritage features.

July 21, 2014, Agency Review Meeting

The purpose of this meeting was to review MMAH, MECP and LTVCA comments on the draft Interim Report on Phase 2 of the Class EA process. As mentioned, the comments were addressed by a letter dated October 22, 2018, from Seaside's consultant, subsequent changes made to the Draft Plan of Subdivision, work completed for Phase 3 and the preparation of this ESR. At the meeting, it was agreed that the Class EA could proceed to Phase 3.

August 29, 2017, Agency Review Meeting

On August 29, 2017, representatives of Seaside Waterfronts Inc. met with the County of Elgin and MECP to discuss the integrated Class EA/Planning Act process and the revised "block plan" of subdivision. At the meeting, MECP stated it had no objection to the Class EA proceeding to Phase 4 (preparation of this ESR) provided that the preliminary servicing blocks showing the location of wastewater facilities were removed pending the completion of the Class EA process.

"Redline" revisions were made to the Plan of Subdivision/Condominium in 2016 and 2017 based on agency input, comments received from the original draft plan circulation, as well as the results and findings of the draft Interim Report. As requested by LTVCA, development blocks in the proposed Draft Plan were shifted away from the drip-lines of mature treed areas.

Following the meeting, by letter dated October 11, 2017, the County of Elgin closed the earlier 2011 applications, accepted the revised "block plan" of subdivision application and assigned a new file number (File No. 34T-WE1501A).

Agency Review of 2018 EIS Update

In November 2018, copies of the 2018 EIS Update prepared by Biologic and the "Redline" revisions version of the Draft Plan were distributed by Seaside's consultant to Elgin County, West Elgin, LTCVA, Caldwell First Nation, MECP and MNRF.

6.5 Public Consultation Session 1

Public Consultation Session 1 was held on February 26, 2014, at St. Mary's Church Hall in West Lorne. The purpose of the meeting was to obtain public and agency input on the work completed for Phases 1 and 2 of the Class EA process.

Distribution of Notice

The notice for Public Consultation Session 1 was the first mandatory contact issued by Seaside's consultants under the Integrated Municipal Class EA/Planning Act approach with Seaside as the proponent (not the Municipality). As required by the Class EA, the notice appeared in the local newspaper and was mailed to the project Contact List.

Attendance and Presentation

Public Consultation Session 1 was a four-hour session, consisting of a two-hour informal walk-in session with displays and a two-hour formal presentation by Seaside's consultants, followed by a question and answer period. Twenty-two people signed the Record of Attendance, including the County of Egin Manager of Planning, staff from the Municipality of West Elgin and residents from Port Glasgow, Rodney, West Lorne and Rodney.

A comment form with four questions was handed out to those in attendance. The questions were:

- Do you have any questions about the proposed Draft Plan of Subdivision?
- Do you have any comments or questions about the inventory of the environment?
- Do you have any questions regarding the environmental evaluation criteria and project evaluation methodology used in the preliminary preferred alternatives for stormwater or wastewater servicing?
- Do you have any other questions or comments regarding any other aspect of the project?

The displays and slide presentation summarized:

- Policies from the West Elgin Official Plan and Port Glasgow Secondary Plan on the development of Seaside.
- Seaside's Draft Plan of Subdivision/Condominium application, including number of residential units, commercial floor space and design population.
- The Municipal Class EA planning and design process, including the appeal provisions under the integrated Planning Act approach.
- Phase 1, Problem/Opportunity, and the Problem/Opportunity Statement prepared for the project.
- Phase 2, Alternative Stormwater Servicing Solutions, covering:
    - Background information gathered as part of the environmental inventory.
    - The recommended stormwater management approach, including LID lot level and conveyance controls and end-of-pipe facilities.
    - Opportunities for stormwater management improvements.
    - Six alternative locations for end-of-pipe facilities. Alternative 7 is a combination of multiple facilities east and west of Havens Lake Road with an end-of-pipe facility at Alternative Locations 5 or 6.
    - Evaluation of stormwater servicing alternatives.
    - Preliminary recommendations regarding preferred solutions. Alternative 7 with an end-of-pipe facility at Alternative Location 5 (on lands owned by the Municipality) was identified as preferred.

- Phase 2, Alternative Wastewater Servicing Solutions, covering:
    - Six alternative solutions, including “Do Nothing” as Alternative 6.
    - A comparative evaluation of Alternatives 1 to 5.
    - Preliminary selection of a preferred wastewater servicing alternative. Alternative 4, a centralized private communal Wastewater Treatment Facility (WWTF) was selected.
- Next steps in the planning and design process.

Public Comments

Many of the residents in attendance expressed support for the development and the preliminary recommendations on SWM and wastewater servicing. Most questions centred on the timing of development.

One written submission was received from a local resident:

- Concerns regarding the development included inadequate setbacks from hazard lands, impacts on the residents’ views of Lake Erie, potential traffic and safety hazards for golf carts and pedestrians going to the beach caused by private roads, the lack of public park space in the development, surplus lands along Havens Lake Road should be left in public ownership and used as green space and the development’s minimum lot size and frontages in the development do not meet the existing Zoning By-law.
- Concerns regarding the environmental inventory included the potential destruction of Milksnake habitat and other endangered species’ habitat and the lack of buffer zones along the wildlife corridor east of Havens Lake Road. The resident also stated that a more in-depth study should be done on impacts on the water quality of Sixteen Mile Creek, including an assimilative capacity study.
- For the question regarding the evaluation of alternatives, the resident stated that the approach to stormwater management and the facility should be located in a constructed wetland but not on municipal lands. Other concerns were that no location was identified for the WWTF. The Official Plan requires a 100 metre setback to minimize odour impacts.
- The resident also stated that discharging WWTF effluent to Sixteen Mile Creek close to a public beach will discourage tourism, use of the beach and recreational fishing in Sixteen Mile Creek. The constant flow of effluent will also change the ecology of the stream.

Seaside’s Consulting Engineer answered these concerns by an e-mail dated May 27, 2014.

6.6 West Elgin Council Public Meeting

A Public Meeting of the Municipality of West Elgin Council was held on June 25, 2014, at 7:00 p.m. at the Royal Canadian Legion Branch 525 in Rodney. The purpose of the meeting was to obtain Council and public and agency input on the Seaside Draft Plan of Subdivision/Condominium application and work completed to date on the Class EA.

Distribution of Notice

The Municipality distributed the notice for the meeting as follows:

- By prepaid first-class mail to all assessed owners within 150 metres of Seaside and Provincial Ministries and agencies, as required by Section 34(12) of the Planning Act and regulations under the Act; and
- The notice also appeared in May 29, 2014, and June 5, 2014, editions of the West Elgin Chronicle, as required by the Municipal Class EA.

Attendance and Presentation

The meeting was attended by the Mayor, Deputy-Mayor and three members of Council, representatives of Seaside and 20 local residents. Seaside's Planner and Consulting Engineer presented slides and display boards covering the following:

- The Port Glasgow Secondary Plan.
- Seaside's Draft Plan of Subdivision/Condominium application, including number of residential units, commercial floor space and design population.
- The Municipal Class EA planning and design process, including the integrated approach under the Planning Act.
- Phase 1, Problem/Opportunity Statement.
- Phase 2, Alternative Stormwater Servicing Solutions, covering:
    - An environmental inventory, including environmental constraints.
    - The recommended stormwater management approach, including LID lot level and conveyance controls and end-of-pipe facilities.
    - Six alternative locations for end-of-pipe facilities.
    - Evaluation of stormwater servicing alternatives and preliminary recommendations regarding preferred solutions. Alternatives 5 (End-of-pipe Facility on Municipal lands), 6 (End-of-pipe Facility in the Sixteen Mile Creek Valley) and 7 (Multiple Facilities east and west of Havens Lake Road in combination with Alternatives 5 or 6) were carried forward for further evaluation.
- Phase 2, Alternative Wastewater Servicing Solutions, covering:
    - Six alternative solutions, including "Do Nothing" as Alternative 6.
    - A comparative evaluation of Alternatives 1 to 5.
    - Preliminary selection of a preferred wastewater servicing alternative. Alternative 4, a centralized private communal Wastewater Treatment Facility (WWTF) was selected.
- Next steps in the planning and design process.

The presentation was followed by a question and answer period. Ratepayers asked the following questions:

- In response to a question about pumping sewage to Rodney, Seaside's Consulting Engineer stated that this alternative requires expanding the existing Rodney WWTF and the construction of an approximately 10 km forcemain from Port Glasgow to Rodney.
- In reply to a question about the need for existing uses to hook into the future sewage system, the Consulting Engineer explained that this is not required by the Port Glasgow Secondary Plan.
- One ratepayer asked about the development's access road to Douglas Line. Seaside's Planning Consultant stated that this access was designed to provide a buffer and accommodate access for the existing houses on Douglas Line.
- In response to a question about access for cars to one of the development's service corridors and walkways, the Planning Consultant stated that cars would not be allowed.
- In reply to a question about road maintenance, the Planning Consultant said this would be covered by the Condominium Agreement with owners.
- With respect to the timing of development, the Planning Consultant said that the commercial block along Havens Lake Road could be developed first.
- In response to a question about the location of the WWTF, Seaside's Consulting Engineer said that this would be determined at the end of Phase 3 of the Class EA process. More opportunities for consultation will be provided.

Public and Agency Comments

The Municipality requested written submissions by July 11, 2014, from the public and agencies who received a copy of the Public Meeting Notice. No further submissions were received.

6.7 Public Consultation Session 2

Public Consultation Session 2 was held on July 28, 2016, at the Royal Canadian Legion in Rodney. The purpose of the meeting was to obtain public and agency input on the work completed for Phases 1, 2 and 3 of the Class EA process.

Distribution of Notice

The notice for Public Consultation Session 2 appeared in the local newspaper and was mailed to the project Contact List.

Attendance and Presentation

Public Consultation Session 2 consisted of an informal walk-in session with displays and a slide presentation by Seaside's consultants, followed by a question and answer period. Seaside's consultants were present to explain the displays, answer questions and record comments.

Thirty-one people signed the Record of Attendance, including residents from Port Glasgow, Rodney and West Lorne and staff of the Municipality of West Elgin. A comment form with the same four questions as the February 26, 2014, Consultation Session was handed out to all present.

The presentation slides covered the following:

- The proposed Seaside development.
- The Integrated Municipal Class EA and *Planning Act* approvals process.
- Phase 1, Problem and Opportunity Statement.
- Phase 2, Alternative Solutions, including the identification and evaluation of:
    - Alternative SWM solutions. Alternative 7, a combination of LID measures and decentralized SWM facilities, was identified as the preferred solution.
    - Alternative wastewater servicing solutions. Alternative 4, a centralized private communal WWTF with surface water discharge, was identified as the preferred solution.
- Phase 3, Design Options, including:
    - Identification and evaluation of Design Concepts for SWM in Seaside's three sub-catchment areas. Preferred options were identified for Havens Lake Road, the East Tableland and the West Tableland.
    - Effluent design targets for the WWTF.
    - Identification and evaluation of five Design Concepts for the WWTF and alternative locations, including Location 1 in the southwest corner of Seaside and Location 2 in the southeast corner.
    - Based on the evaluation, Design Concept 2, Membrane Bioreactor (MBR) with phosphorus removal, membrane filtration and UV disinfection at Location 1 was identified as the preferred design. This design will be integrated with the preferred SWM design for the West Tableland.
- Next steps in the planning and design process, including the preparation of this ESR.

Public Comments

One comment form with the following positive comments was received from a local resident:

- The development is much needed in West Elgin;
- The proposed SWM plan is innovative and will improve water quality;
- The use of LID is progressive and will help protect the environment; and
- "Hope to see ground breaking as soon as possible".

6.8 Thirty Day Review Period of ESR

The ESR was placed on the public record for the 30-day review period from August 16 to September 14, 2019. The Notice of Completion and ESR were distributed as follows:

- The notice appeared in the West Elgin Chronicle on August 8 and 15, 2019. It was mailed/emailed to the project Contact List on August 8, 2019
- Hard copies of the ESR were placed at the Municipality of West Elgin's office in Rodney and the Rodney Public Library. The notice also included an MTE project website with a link to a pdf of the ESR
- A hard copy of the ESR was delivered to MEPC (the "One-Window" reviewer) on July 31, 2019. MEPC subsequently distributed the ESR to the agency review team.

No Part II Order requests were received during the 30-day review period. Comments were received from Chippewas of the Thames First Nation (COTTFN) and the Port Glasgow Yacht Club.

In a letter received in early September (the letter was incorrectly dated November 14, 2018), Fallon Burch, Consultation Co-ordinator, Chippewas of the Thames First Nation (COTTFN), stated that the First Nation does not have “any major concerns” and requested regular project updates, an opportunity to review the mitigation plan for Species at Risk and all archaeological studies related to the project.

In a letter dated September 6, 2019, Seaside’s consultants replied that:

- The ESR includes mitigation measures to avoid impacts on Species at Risk
- No further archaeological assessments are required for the proposed wastewater services but are required for the Plan of Subdivision. Seaside’s consulting archaeologist will notify COTTFN of upcoming assessments and invite a member of the First Nation to participate as an Archaeological Field Liaison
- COTTFN will be contacted prior to construction for its input on Species at Risk and cultural resources.

A letter dated August 19, 2019, from the Port Glasgow Yacht Club outlined the Board of Directors’ concerns regarding the proposed wastewater services. Concerns included potential odour impacts and impacts of the WWTF’s effluent on rising Lake Erie and Sixteen Mile Creek water levels and the West Elgin municipal beach “Blue Flag” designation. These concerns were addressed by Seaside’s consultants in a letter dated September 6, 2019.

Review agency comments co-ordinated by MEPC are included in a letter dated September 27, 2019, to MTE. The letter included comments from the Elgin County Planning Department, Ministry of Municipal Affairs and Housing, Ministry of Natural Resources and Forestry, Lower Thames River Conservation Authority and MEPC. These comments have been addressed in this revised ESR.

6.9 Agency Consultation during Detailed Design

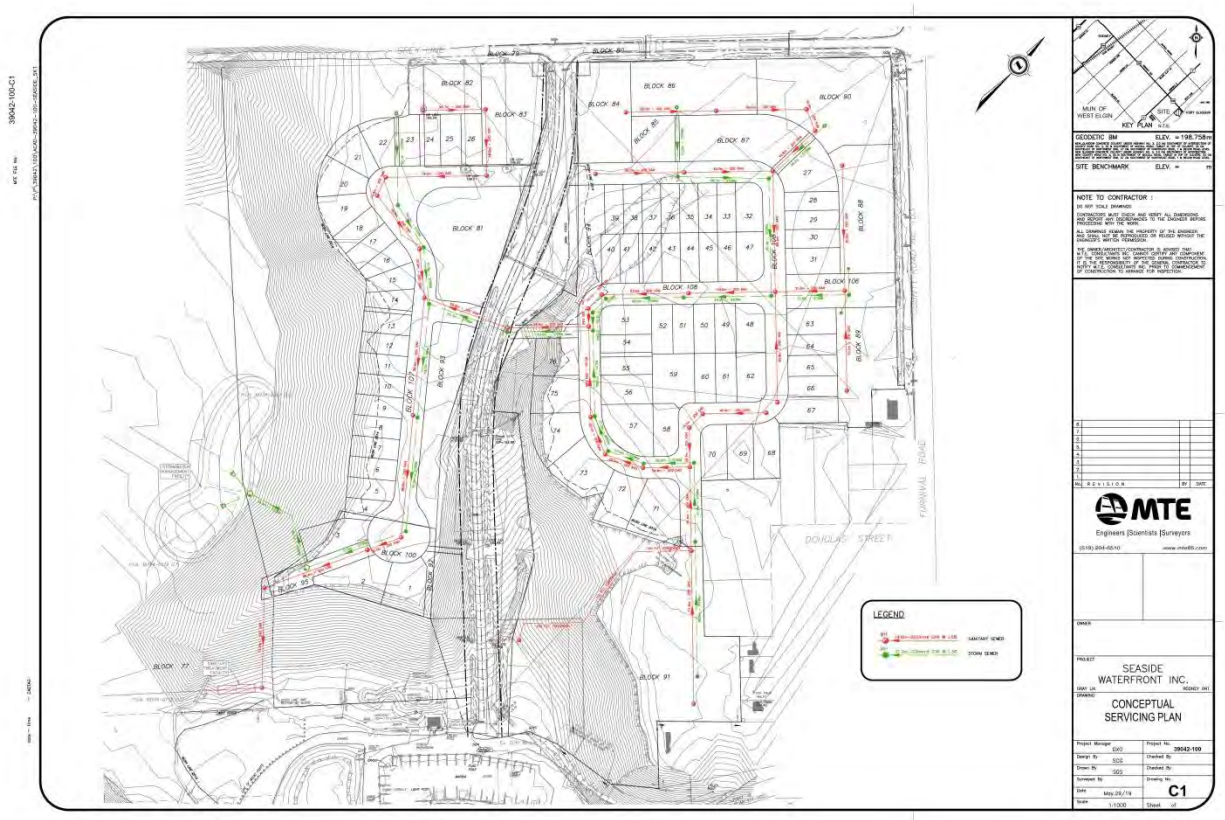
Further agency consultation is required during the Detailed Design phase, as outlined in Section 7.

7.0 Project Description

7.1 Introduction

This section of the ESR describes the selected design of the Seaside WWTF and constructed wetland. It also summarizes its benefits and impacts and the environmental protection and mitigation measures which must be implemented during the construction and operation of the new WWTF. The selected wastewater servicing scheme for Seaside is shown on **Figure 7.1**.

Figure 7.1 Selected Wastewater Servicing Scheme



7.2 Selected Design

In summary, the selected design consists of a centralized private communal WWTF on Block 33 of the Seaside development using a Membrane Bioreactor (MBR) treatment system. Effluent will discharge to a constructed wetland for further polishing and nutrient uptake, Sixteen Mile Creek and ultimately to Lake Erie. The facility will be designed to meet the effluent quality criteria shown on **Table 5.7** in Section 5 of this ESR.

Effluent from the facility will meet stringent disinfection requirements, achieved through tertiary effluent filtration and disinfection via UV irradiation. Risk of contamination of surface water by E. coli and associated public health risk is minimal. Wastewater effluent disinfection has a high priority considering the surrounding tourist and recreational uses.

The area around the mouth of Sixteen Mile Creek is prone to flooding resulting from sand buildup along the shoreline of Lake Erie during large storm events. Supplemental baseflow from the WWTF may assist in mitigating the impoundment of flow at the mouth of Sixteen Mile Creek, thereby reducing the level of algae within Sixteen Mile Creek and Lake Erie at Port Glasgow. During detailed design, the cause of the buildup of sand will be further analysed. A design solution will then be developed to prevent the sand buildup and backup of Sixteen Mile Creek.

The WWTF can be designed and constructed to provide robust treatment under all foreseeable operating conditions. Potential mechanical failures within the WWTF will be detected by required monitoring of flows and effluent quality, as well as ongoing maintenance of the facility.

The WWTF will be located in a fully enclosed building with an outdoor covered tank on a 0.1 hectare site. The site is part of Block 33 (designated for "Open Space, WWTF and Services") in the southwest corner of the proposed Draft Plan of Subdivision. Access to the site will be provided via an access road off the turning circle at the end of Street 'A". **Figure 7.2** is a Site Plan of the proposed facility, while **Figure 7.3** is an artist's rendering.

The WWTF site is approximately 88 metres away from the closest planned residential block in Seaside (Block 30). No buffer is required by MECP guidelines since the system will be in an enclosed building with odour control integral to various wastewater treatment processes. However, it could be moved slightly during Detailed Design to avoid any compliance issues.

Figure 7.2 Wastewater Treatment Facility Site Plan

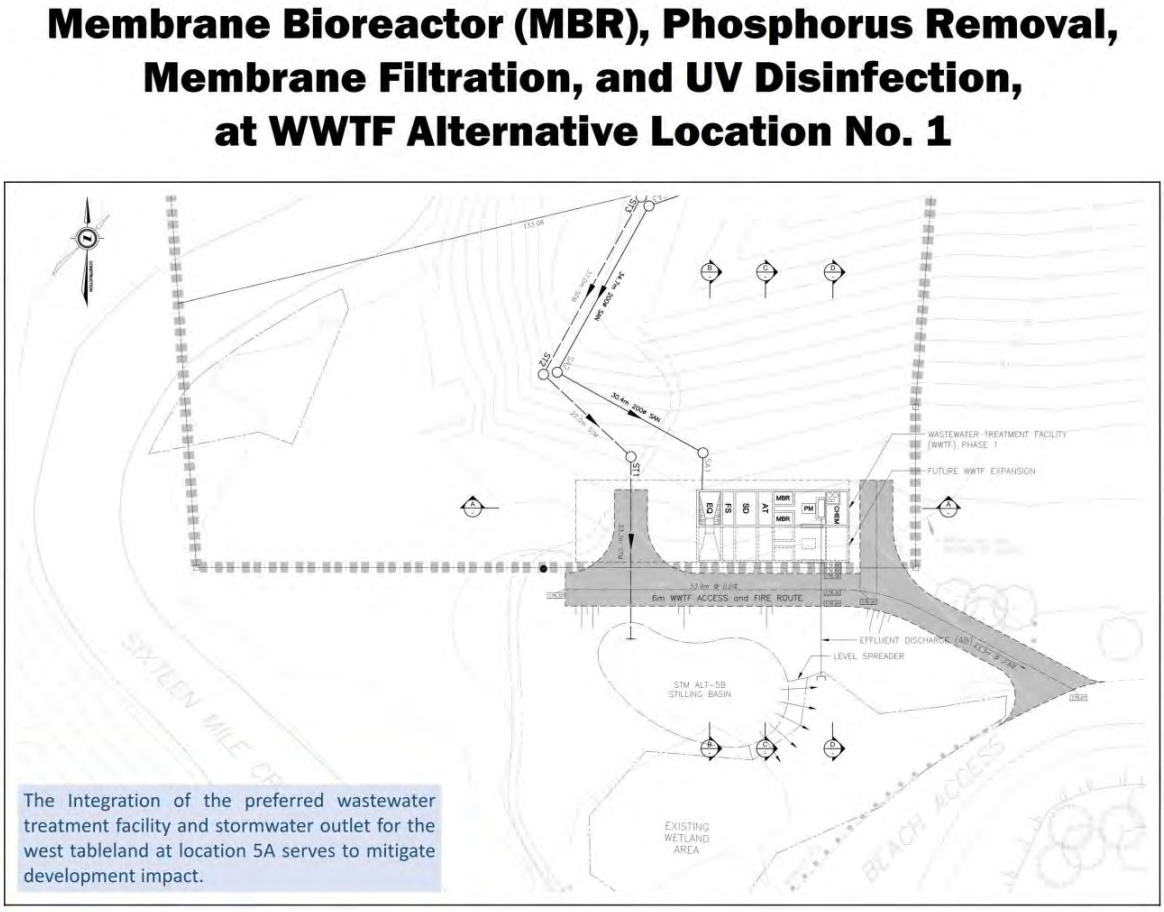
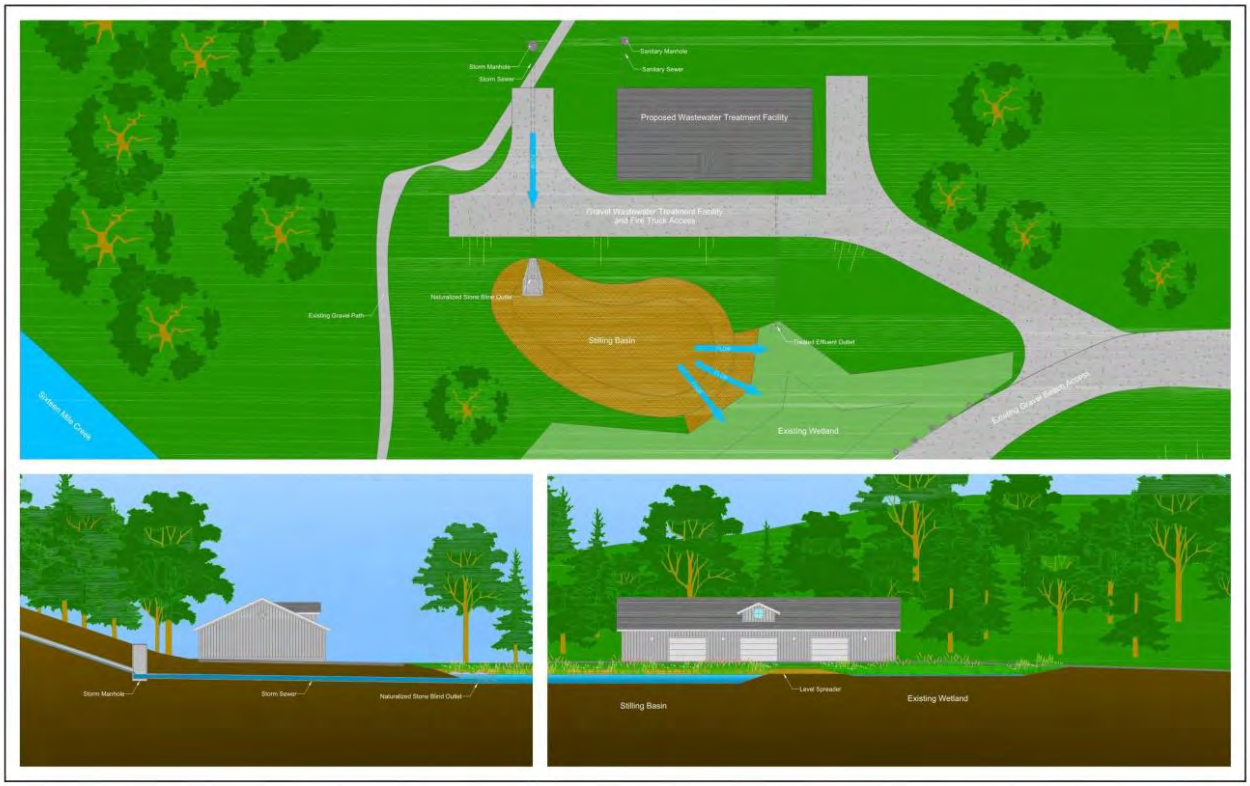


Figure 7.3 Wastewater Treatment Facility Site Rendering



As outlined in Section 5, Seaside will be serviced by Low Impact Development (LID) SWM measures, combined with decentralized SWM facilities for water quantity and quality and erosion control on the site's three sub-catchment areas. As part of the selected SWM design for the West Tableland sub-catchment area, a stilling basin, level spreader outlet and constructed wetland will be provided for water quality and erosion control before stormwater is discharged to Sixteen Mile Creek. In this way, the constructed wetland serves two functions: polishing and nutrient uptake for the WWTF effluent and; water quality and erosion control for stormwater. The constructed wetland is located on lands owned by the Municipality, southwest of the Seaside development.

Sewage will flow to the WWTF by a conventional gravity sewage collection system. The collection system will be constructed in the rights-of-way of the roads shown on the Draft Plan of Subdivision.

7.3 Climate Change Design Considerations

Appendix 2 of the Municipal Class EA includes "Typical Mitigating Measures for Adverse Environmental Effects", including those caused by climate change. The effects of climate change were considered in the planning and design of the proposed wastewater services and will continue to be considered during subsequent more detailed design phases.

Mitigating measures include:

- Local detention areas to slow the passage of major system flows
- Provision of grassed areas and LIDs to encourage infiltration, thereby reducing storm water run-off
- Increased capacity of sewer and treatment systems to accommodate additional flows

- Wastewater facilities will have provision for stand-by power as back-up for upset conditions and emergency response procedure
- Water conservation and efficiency through leakage loss detection and prevention in distribution system.

7.4 Service Area

The service area for the WWTF consists of the Seaside development, as shown on the Draft Plan of Subdivision. The WWTF has been designed to be expandable so that, in the future, it could be expanded to service existing development in Port Glasgow, in the event that the existing septic tank and tile bed systems fail.

7.5 Phasing

The selected design permits the development of individual lots/blocks allowing Seaside to be developed gradually over time. The design also allows for easier upgrades to the system to service future uses on the site, such as the community centre. In addition, given the size and modular nature of the proposed system, an expansion to the system will have little impact due to the small amount of land required and the ease of incorporating the expansion with landscaping.

The modular WWTF will be installed in three phases, each designed to treat one third of the total design capacity. Some components, including the flow equalization tank(s), fine screening, waste activated sludge management, and the PLC control system will be sized for the full build out and installed as part of Phase 1. Phases 2 and 3 will consist of additional aerobic and membrane filtration treatment trains. This approach allows the wastewater treatment capacity to be more closely monitored.

As the first homes close and are producing wastewater, the equalization tanks can be used to store wastewater to be hauled away for treatment. Membrane bio-reactor systems are well suited to operating at low flow conditions, and as flows reach approximately 10% of the design flow for Phase 1, the WWTF can be commissioned.

To accommodate the low flows, aerobic tank level set points can be adjusted down to reduce the effective volume of the reactor, and membrane filtration will pause and relax when there is no need to discharge permeate. This will not have an impact on filtration effectiveness or effluent quality.

7.6 Plant Operation and Maintenance

The WWTF is anticipated to be owned by the condominium corporation recuperating its costs through utility charges to the end users.

The facility's control system is designed such that, on a routine basis, an operator is only required on-site once per week to inspect the facility, perform on-site process monitoring and optimization, dispose of the screenings, collect samples for analysis and reporting, and perform all other required duties.

In between site visits, the WWTF can be monitored remotely, with email or text alarms automatically sent to the operators and full access to the HMI available remotely from a computer or smartphone.

Maintenance, repair and replacement of individual pieces of equipment will be performed based on need and equipment manufacturers guidelines. For individual electro-mechanical components (pumps, blowers, etc.) the run time will be recorded by the control system.

Membrane performance will be monitored, logged, and trending in the permeability can be used to pro-actively perform membrane cleaning.

7.7 Benefits, Impacts and Mitigating Measures

Table 7.1 is an assessment of the benefits and impacts of the planned wastewater services for the Seaside development.

Table 7.1 Benefits, Impacts and Avoidance/Mitigating Measures

Evaluation Factors and Criteria	Benefits, Impacts and Mitigation
1. Engineering Considerations	
Impacts on Groundwater Quality & Quantity	No impacts on groundwater quality and quantity. WWTF site and constructed wetland avoid perched aquifer located on northern tableland of Seaside site.
Impacts on Surface Water Quality	WWTF effluent quality limits avoid water quality degradation. Disinfection by UV irradiation limits the risk of contamination by E. coli and associated health risk. Constructed wetland provides further polishing and nutrient uptake.
Impacts on Surface Water Quantity	Supplemental baseflow to Sixteen Mile Creek may assist in mitigating impoundment of flow at mouth of Sixteen Mile Creek and reducing algae growth at creek mouth and Lake Erie. During detailed design, the cause of the buildup of sand will be further analysed. A design solution will then be developed to prevent the sand buildup and backup of Sixteen Mile Creek.
Erosion & Sedimentation	Constructed wetland provides water quality and erosion control for stormwater. An Erosion & Sedimentation Control Plan for construction of WWTF site will be prepared during detailed design.
Noise and Odour Impacts	No impacts since facility will be located in a fully enclosed building with an outdoor covered tank. No buffer is required.
Monitoring	Flow and effluent quality monitoring will be provided by the facility's control system and an on-site (once per week) licensed monitor to perform on-site process monitoring and optimization. Constant monitoring will detect potential mechanical failures.
Operation & Maintenance	WWTF will be owned and operated by the condominium corporation.
Long-Term Servicing Solution for Seaside	WWTF provides a long-term, environmentally sustainable sanitary sewage treatment facility for Seaside.
Long-Term Servicing Solution for Port Glasgow	WWTF can be expanded to service existing development in Port Glasgow in the event that septic systems fail.

2. Natural Heritage Resources	
Impacts on LTVCA Regulated Area	The WWTF and constructed wetland are located in LTVCA Regulated Area but outside of "Critical Regulated Area" (48 m from Sixteen Mile Creek). Written approval is required from LTVCA prior to any work, including grading, filling and construction.
Impacts on Sixteen Mile Creek Fish Habitat (Provincially Significant): • Potential loss of fish habitat • Water quality • Flow/stream morphology • Water temperature • Spawning and Young of the Year	No loss of fish habitat since there will be no in-water works. WWTF effluent quality limits and disinfection avoid degradation of water quality in Sixteen Mile Creek. Constant discharge from WWTF expected to have positive effect on flow, particularly during summer low flow conditions. May assist in reducing impoundment of flow at mouth of Sixteen Mile Creek and algae growth at creek mouth and Lake Erie. Flow increases not significant enough to affect stream morphology. Steady state temperature of discharge of between 14 and 20 degrees Celsius will have a slight moderating or cooling effect on the cool/warmwater conditions in Sixteen Mile Creek during summer low flow period.
Evaluation Factors and Criteria	**Benefits, Impacts and Mitigation**
	Steady state temperature of discharge not expected to adversely affect spawning or Young of the Year since discharge will have a slight moderating or cooling effect.
Impacts on Aquatic Habitat of Constructed Wetland	Constructed wetland provides an opportunity to stabilize and improve aquatic habitat. Could also create direct fish habitat in wetland, create endangered species habitat and improve aquatic habitat of Sixteen Mile Creek. Since the original wetland was approved by DFO for fish habitat compensation, DFO approval is required for any changes.
Impacts on Vegetation and Wildlife Habitat	Construction of WWTF site removes/disturbs the following vegetation: - Removes 0.05 ha of fresh moist deciduous forest in Community 12 - Temporarily disturbs a red cedar cultural woodland in Community 15. Construction of the constructed wetland temporarily disturbs: - A cultural dry-moist old field meadow in Community 14 - A forb mineral meadow marsh in Community 14b. However, aquatic habitat in the constructed wetland will be stabilized and improved. Removal/disturbance of vegetation will result in some loss of wildlife habitat. Vegetation removal will be kept to a minimum. Vegetation protection and erosion and sedimentation measures will be implemented during construction. A Landscape Plan will be prepared during detailed design to compensate for the loss of vegetation. Potential impacts and mitigation will be addressed in more detail by a Scoped EIS to be prepared during Detailed Design.

Impacts on Floral and Faunal Species of Provincial Concern: • S-ranked floral species ▪ Carrion Flower S2? ▪ Eastern Narrow-leaved Sedge S2 ▪ Woodland Bluegrass S1 • Snapping Turtle habitat (Special Concern) • Foraging habitat for Milksnake (Special Concern) • Habitat for Provincially S-ranked dragonflies	No impacts on S-ranked floral species since none are located within the proposed footprint of the WWTF. The S-ranked floral species are located within the protected forest habitat of Sixteen Mile Creek. Construction potentially affects habitat of Snapping Turtle (Special Concern), Milksnake (Special Concern) and S-ranked Dragonflies. To avoid impacts on these species: - Fact sheets and detection protocols will be provided to the contractor prior to construction - Habitat enhancement measures will be considered during Detailed Design - Measures will be put in place to prevent turtles and Milksnake from entering construction area prior to **April 1 and kept in place until October 1**. Measures will comply with MNRF's *Best Practices Technical Note on Reptile and Amphibian Exclusion Fencing*. These measures will be incorporated into the construction contract. In addition, an Information Gathering Form (IGF) under the *Endangered Species Act* has been submitted to MNRF (transferred to MECP in 2019). Potential impacts and mitigation will be addressed in more detail by a Scoped EIS to be prepared during Detailed Design.
Evaluation Factors and Criteria	**Benefits, Impacts and Mitigation**
Impacts on Migratory and Other Protected Birds	Potential destruction of eggs, nests and young prior to, and during construction avoided by prohibiting vegetation clearing during the bird nesting season from **April 15 to August 15**. If breeding birds are encountered during construction, work should not continue until after **August 15** or as soon as a qualified professional determines that the young have fledged and left the nest. These timing restrictions will be included in the construction contract documents.
Impacts on Species at Risk (SAR): - Butternut (Endangered) - Whip-poor-Will (Threatened)	WWTF site and constructed wetland will not affect the Butternut tree in Community 8 or Whip-poor-Will habitat in Community 6. Any impacts on these SAR will be dealt with as part of the Draft Plan of Subdivision approval process under the *Planning Act*.
3. Cultural Heritage Resources	
Potential Destruction/Disturbance of Archaeological Resources during Construction	No impacts. According to a Stage 1 Archaeological Assessment completed by Mayer Heritage Consultants Inc. in 2007, the WWTF site and constructed wetland have low archaeological potential since they are located in the Sixteen Mile Creek valley with steep topography.
Potential Destruction/Disturbance of Deeply Buried Cultural Deposits and Unmarked Human Remains during Construction	Avoided by provisions in the construction contract documents requiring immediate contact with MTCS if archaeological resources are uncovered during construction. The *Ontario Cemeteries Act* applies to the discovery of unmarked human remains.

4. Impacts on Land Uses & Socio-Economic Environment	
Impacts on Surrounding Existing Land Uses	No noise or odour impacts since facility will be located in a fully enclosed building with an outdoor covered tank. No buffer is required. Some minor noise impacts may occur during construction of WWTF and constructed wetland. Construction contract will include noise control provisions.
Impacts on Recreational Use of Sixteen Mile Creek and Lake Erie Beach	Likely to benefit recreational fishing in Sixteen Mile Creek and recreational use of Lake Erie Beach: - WWTF effluent quality limits and disinfection avoid degradation of water quality in Sixteen Mile Creek and Lake Erie - Disinfection by UV irradiation limits the risk of contamination by E. coli and associated health risk - Constructed wetland provides further polishing and nutrient uptake - Constant discharge from WWTF expected to have positive effect on flow, particularly during summer low flow conditions. May assist in reducing impoundment of flow at mouth of Sixteen Mile Creek and algae growth at creek mouth and Lake Erie.
Growth and Economic Development in Port Glasgow and West Elgin	The development of Seaside contributes to growth and economic development in Port Glasgow and West Elgin. Seaside's projected population of 800 will contribute to short and long-term economic growth for local businesses and support tourism, tourism related recreational and commercial uses. Commercial development in Seaside will also provide employment opportunities for local residents.
Evaluation Factors and Criteria	**Benefits, Impacts and Mitigation**
5. Conformity/Consistency with Local & Provincial Planning Policies	
Conformity to County of Elgin Official Plan, West Elgin Official Plan and Port Glasgow Secondary Plan	The Seaside development and proposed wastewater services conforms to/supportive of the goals, strategic objectives, Natural Systems, tourism, economic activity and Infrastructure policies of the Elgin County Official Plan. The development and proposed services are permitted and encouraged by local planning policies. Seaside conforms to: - The Port Glasgow Secondary Plan land use designations and policies - The Secondary Plan's policies for sanitary sewage disposal services (private communal systems) - The Official Plan's and Secondary Plan's policies for protection of the natural environment and conservation of cultural heritage resource's

	- The Official Plan's policies permitting public infrastructure, including SWM and sanitary sewage treatment facilities, in all land use designations - The Official Plan's policies requiring buffering between a WWTF and sensitive land uses. No buffer is required since the facility will be located in a fully enclosed building with an outdoor covered tank.
Consistency with Provincial Policy Statement (PPS)	Seaside and the proposed wastewater services are consistent with PPS policies for infrastructure and the wise use and management of significant resources. Potentially affected significant resources include: - Sixteen Mile Creek (Provincially Significant Fish Habitat) - 0.05 ha of Community 12 (Provincially Significant Woodlands) - Habitat for Snapping Turtle, Milksnake and Dragonflies (Provincially Significant Wildlife Habitat). Any adverse impacts on these resources will be mitigated/avoided by the measures outlined in this table.
6. Capital, Operation & Maintenance Costs	
Capital, Operation and Maintenance Costs	The developer, supplier and condominium owners will be responsible for all capital, operation and maintenance costs.

Benefits

As shown on **Table 7.1**, Seaside will make a significant contribution to growth and development in Port Glasgow and West Elgin. In addition, the planned wastewater services provide a long-term servicing solution for Seaside and Port Glasgow, in the event that the existing septic systems in the community fail.

Other benefits of the planned wastewater facilities are:

- The increase in flow at a constant rate to Sixteen Mile Creek will assist in mitigating the impoundment of flow at the mouth of Sixteen Mile Creek and Lake Erie, thereby reducing algae growth. This will benefit recreational uses of the Lake Erie beach. During detailed design, the cause of the buildup of sand will be further analysed. A design solution will then be developed to prevent the sand buildup and backup of Sixteen Mile Creek.
- The high quality of treated effluent and constant flow at a steady state temperature will improve fish habitat and recreational fishing in Sixteen Mile Creek, particularly during summer low flow conditions.
- The constructed wetland will stabilize and improve aquatic habitat. It could also create direct fish habitat, create endangered species habitat and further improve the aquatic habitat of Sixteen Mile Creek.

Impacts and Avoidance/Mitigation Measures

The planned wastewater services will have no impacts on:

- Groundwater quantity and quality. The perched aquifer on the Seaside tablelands will not be affected by the proposed wastewater services.
- Erosion and sedimentation will be avoided by the preparation of an Erosion and Sedimentation Control Plan during detailed design. The plan will be incorporated into the contract documents for the construction of the wastewater services. In addition, the constructed wetland will provide water quality and erosion control for stormwater.
- Surface water quality/quantity due to the WWTF's high quality treated effluent and supplemental baseflow at a steady temperature to Sixteen Mile Creek. Constant flow and effluent quality monitoring will be provided by the facility's control system and on-site licensed monitor. In addition, the contract documents will include provisions to protect surface water quality and fish habitat.
- S-ranked floral species since none are located within the proposed footprint of the WWTF. These species are located within the protected forest habitat of Sixteen Mile Creek. Any impacts on will be dealt with as part of the Draft Plan of Subdivision approval process under the Planning Act.
- Migratory and other protected wild birds. These will be protected by including a provision in the construction contract documents prohibiting vegetation clearing during the bird nesting season from **April 15 to August 15**.
- The WWTF site and constructed wetland will not affect the Butternut tree in Community 8 or Whip-poor-Will habitat in Community 6, both Species at Risk. Any impacts will be dealt with as part of the Draft Plan of Subdivision approval process.
- Surrounding existing land uses, including sensitive residential land uses. There will be no noise or odour impacts since the WWTF will be in a fully enclosed building with an outdoor covered tank.
- Archaeological resources. The WWTF site is located on lands with low archaeological potential. In addition, the contract documents will include provisions requiring immediate contact with MTCS if archaeological resources are discovered during construction.

Some minor noise may occur during construction potentially affecting surrounding residential uses. To mitigate this, the construction contract will include noise control provisions.

Construction of the WWTF site and constructed wetland remove 0.05 ha of fresh moist deciduous forest in Community 12 and temporarily disturb a red cedar cultural woodland in Community 15a, cultural dry-moist old field meadow in Community 14 and forb mineral meadow marsh in Community 14b. Although the aquatic habitat of the constructed wetland will be improved, construction of the WWTF site and wetland will result in some loss of wildlife habitat, potentially affecting the habitat of Snapping Turtle (Special Concern), Milksnake foraging habitat (Special Concern) and Provincially S-ranked dragonflies.

To avoid impacts on these species, the construction contract will require the following:

- Fact sheets and detection protocols for these species will be provided to the contractor prior to construction.
- Measures to be put in place by the contractor prior to **April 1 and kept in place until October 1** to prevent turtles and Milksnake from entering the construction area. These measures will comply with MNRF's *Best Practices Technical Note on Reptile and Amphibian Exclusion Fencing.*
- Vegetation removal will be kept to a minimum during construction. A Landscape Plan will be prepared during detailed design to compensate for the loss of vegetation.
- The constructed wetland also potentially creates habitat for Species at Risk.

A Scoped EIS will be prepared Detailed Design to address potential impacts on natural heritage resources. This will be completed when the final servicing plan details are available, following the completion of the integrated EA/*Planning Act* approval process.

In addition, an Information Gathering Form (IGF) under the Endangered Species Act has been submitted to MNRF (transferred to MECP in 2019) for these species.

The WWTF and constructed wetland are located in the LTVCA Regulated Area, but outside of the "Critical Regulated Area" within 48 metres of Sixteen Mile Creek. LTVCA requirements for the site will be dealt with during detailed design as part of the required application under the Conservation Authorities Act. Written approval is required from LTVCA prior to any grading, filling or construction.

The planned wastewater services conform to the West Elgin Official Plan and Port Glasgow Secondary Plan. They are also consistent with PPS policies for infrastructure and the wise use and management of significant resources. Any adverse impacts on significant resources will be mitigated by the avoidance/mitigation measures outlined in **Table 7.1**.

7.8 Approvals and Further Agency/First Nations Consultation

Approvals required during Detailed Design and prior to construction are:

- Department of Fisheries and Oceans approval of the constructed wetland.
- Environmental Compliance Approval (ECA).
- Drinking Water Works Permit.
- Permit to Take Water (PTTW) should there be a requirement to remove more than 50,000 litres of groundwater per day.
- Archaeological clearance from the Ministry of Tourism, Culture and Sport (MTCS).
- Written approval from LTVCA under the Conservation Authorities Act prior to undertaking any work in areas regulated by LTVCA, including, grading, filling and construction.
- Endangered Species Act sign off from MECP.
- Since species are periodically "uplisted" under Federal and Provincial Species at Risk legislation, any species identified as potentially present should be screened against species listed in the legislation prior to construction. Permits from MECP may be required for species not previously identified in this ESR as "at Risk".

These approvals require further consultation with MECP, MTCS, MNRF and LTVCA. Site plan approval and a Building Permits will be required from the Municipality of West Elgin prior to construction of the WWTF.

Further consultation is also required with Caldwell First Nation and Chippewas of the Thames First Nation regarding planting of native species, Species at Risk and First Nation participation in future archaeological assessments.

7.9 Timing Restrictions

Timing restrictions for construction of the project include:

- To avoid impacts on nesting migratory and other protected birds, no vegetation removal can occur from **April 15 to August 15**.
- Any in-water works must avoid the period from **March 15 to July 15** for warmwater watercourses and warm to coolwater watercourses, including Sixteen Mile Creek.

7.10 Capital and Operating Costs

Initial capital costs are anticipated to be financed and recuperated through condominium charges back to the end user.

These initial costs are currently anticipated to be as follows:

- Phase 1: $875,000;
- Phase 2: $500,000; and
- Phase 3: $400,000.

This includes all of the modular equipment, plus the equalization and sludge holding tanks and in-tank equipment supplied loose, freight to site and commissioning.

The operation and maintenance costs will be set up as a utility and charged back to the end user. The ultimate breakdown of these costs will be decided with the provider during the detailed design phase. The costs are proportional to the quantity of flow being handled by the facility.

At present, costs are anticipated to be as follows:

- 105 m3/d: $110,000/year;
- 210 m3/d: $186,500/year; and
- 315m3/d: $262,000/year.

This includes an estimate for chemicals, electricity, parts replacement and repair, annualized membrane replacement, operations, and waste activated sludge removal. The biggest contributor to these costs is waste activated sludge removal (estimated at $116,000/year at full build out).

At these volumes, there is the potential to install a sludge dewatering system which would take Waste Activated Sludge (WAS) to 15-20% dry solids, thus reducing handling costs by approximately $35,000/year at full build out.

7.11 Project Schedule

No Part II Order requests were received by the proponent during the 30-day review period. Once the integrated Class EA/Planning Act approval process has been completed, Seaside's proposed wastewater services will be considered to have met the requirements of the Municipal Class EA and may proceed to design and construction.

The project schedule is:

- Preparation of Detailed Design and Contract Documents for the construction of the WWTF in the fall of 2019. The drawings and documents will incorporate the environmental provisions and mitigating measures identified in this ESR to avoid or mitigate negative impacts. During Detailed Design, all mitigation measures will be developed in more detail.
- The receipt of all design and construction related approvals.
- Tendering of the project and construction. Construction is scheduled for summer 2020.

7.12 Municipal Responsibility Agreement

The proposed development will take the form of a condominium and NOT individual freehold ownership through a traditional draft plan of subdivision. As such, a legally binding municipal responsibility agreement will be put in place between the Municipality of West Elgin and the owner (namely the condominium corporation), along with the provision of sufficient financial assurance, so that the Municipality will take over operation of the sewage collection and treatment systems (sanitary and storm) in the event of default by the condominium corporation. The owner will be the condominium corporation, not the supplier of the WWTF. It is also acknowledged that if this development were not to proceed by plan of condominium, but rather by draft plan of subdivision, through individual freehold ownership, the sewage collection and treatment systems both for sanitary sewage and stormwater must be fully municipally owned and operated into perpetuity.

GARY BLAZAK, PLANNING CONSULTANT

LONDON, ONTARIO

Appendix A List of Background Documents

TABLE A.1 - BACKGROUND PLANNING DOCUMENTS AND TECHNICAL STUDIES	
1.0	**Land Use Planning Policy**
1.1	Provincial Policy Statement, Ministry of Municipal Affairs and Housing, 2005 and 2014.
1.2	Municipality of West Elgin Official Plan, Municipality of West Elgin, as modified by the OMB June 28, 2013.
1.3	Port Glasgow Secondary Plan, Municipality of West Elgin, as modified by the OMB June 28, 2013.
1.4	Ontario Municipal Board Memorandum of Oral Decision and Order, PL110240, August 16, 2013.
2.0	**Environmental Assessment Planning**
2.1	Municipal Class Environmental Assessment, Municipal Engineers Association, October 2000 as amended in 2007 & 2011.
2.2	Port Glasgow Marina & Yacht Club Entrance Feasibility Study, Shoreplan Engineering Limited, October 2006.
2.3	Port Glasgow Sewage System – Phase 2 Report, Municipal Class Environmental Assessment, Municipality of West Elgin, Spriet Associates and Stantec Consulting Ltd., May 2009.
3.0	**Port Glasgow Yacht Club and Marina**
3.1	Port Glasgow Yacht Club, Marina Master Plan, Monteith Brown Planning Consultants, November 2012.
4.0	**Natural Environment / Natural Heritage Studies**
4.1	Butternut Tree Assessment Study, William Huys, BioLogic Incorporated, July 2010.
4.2	Environmental Impact Study and addendums, Seaside Development - Port Glasgow, BioLogic Incorporated, 2011, 2015, 2018.
4.3	Species At Risk Permit AY-B-011-12 for Cover Board Studies at Port Glasgow targeting Eastern Foxsnake and Gray Ratsnake, BioLogic Incorporated, October 28, 2012.
5.0	**Archaeological Investigations**
5.1	Archaeological Excavations (Stage 4), Proposed Development, Part Lot 6, Concession 14, Municipality of West Elgin, Elgin County, Ontario, Mayer Heritage Consultants Inc., February 2008 (2007 Investigations).
5.2	Addendum to Archaeological Assessment (Stages 1 to 3), Proposed Development, Part Lot 6, Concession 14, Municipality of West Elgin, Elgin County, Ontario, Mayer Heritage Consultants Inc., March 2010 (October-November 2009 Investigations).
5.3	Archaeological Assessment (Stages 1 & 2), Port Glasgow Commercial Block, Part Lot 6, Concession 14, Municipality of West Elgin, Elgin County, Ontario, Mayer Heritage Consultants Inc., February 6, 2012 (December 2011 Investigations).
5.4	Original Report on Archaeological Assessment (Stages 1 & 2), Port Glasgow Stormwater Management Pond, Part Lot 6, Concession 14, Municipality of West Elgin, Elgin County, Ontario, Mayer Heritage Consultants Inc., October 25, 2013 (June 2013 Investigations).
5.5	Addendum to Archaeological Assessment (Stages 4 Investigation of Location 15), Proposed Development, Part Lot 6, Concession 14, Municipality of West Elgin, Elgin County, Ontario, Mayer Heritage Consultants Inc., ___ 2013 (May-June 2013 Investigations).

6.0	**Geotechnical and Hydrogeological Investigations**
6.1	Preliminary Geotechnical Assessment, Proposed Development, Lot 5 and Part Lot 6, Concession 14, Municipality of West Elgin, Port Glasgow. Golder Associates, June 2008.
6.2	Additional Geotechnical Comments, Proposed Development, Lot 5 and Part Lot 6, Concession 14, Municipality of West Elgin, Port Glasgow. Golder Associates, February 2009.
6.3	Additional Geotechnical Comments, Proposed Development, Part Lot 6, Concession 14, Municipality of West Elgin, Port Glasgow. Golder Associates, September 2010.
6.4	Geotechnical Investigation, Proposed Town Centre Development, Community of Port Glasgow, Municipality of West Elgin. Golder Associates, August 2011.
6.5	Draft Geotechnical Engineering Report, Seaside Residential-Commercial Development, Part Lot 6, Concession 14, Geographic Township of Aldborough, Municipality of West Elgin, County of Elgin, Port Glasgow, Ontario. LVM Inc., November 2012.
6.6	Draft Hydrogeology Study Report, Seaside Residential-Commercial Development, Part Lot 6, Concession 14, Geographic Township of Aldborough, Municipality of West Elgin, County of Elgin, Port Glasgow, Ontario. LVM Inc., November 2012.
7.0	**Studies prepared to support Draft Plan of Subdivision and Condominium Applications (April 2011)**
7.1	Planning Report for Seaside, a residential and commercial condominium development in Port Glasgow, Lot 6 (part), Concession XIV, Municipality of West Elgin, County of Elgin. Kirkness Consulting Inc., Urban and Rural Planning and Ron Koudys Landscape Architect Inc., April 2011.
7.2	Environmental Impact Study 2011 and addendums 2015, 2018, Seaside Development - Port Glasgow, BioLogic Incorporated.
7.3	Functional Servicing Report, Seaside Residential-Commercial Development at Port Glasgow. Sco-Terra Consulting Group Limited, April 2011.
7.4	Traffic Impact Study, F.R. Berry and Associates (October 2009)
8.0	**Agency Responses to circulation of Draft Plan Applications (November 2011)**
8.1	MMAH Letter dated November 3, 2011 together with extensive Agency comments received from the Ministry of the Environment, Ministry of Natural Resources, Lower Thames Valley Conservation Authority, Ministry of Agriculture, Food and Rural Affairs, Ministry of Tourism and Culture and other External Agencies.
9.0	**Stormwater Management Planning and Design Guidelines / Provincial Regulations**
9.1	Stormwater Management Planning and Design Manual, MECP 2003.
9.2	Ontario Regulation 152/06 made under the Conservation Authorities Act, LTVCA 2006.
9.3	LTVCA Operational Guidelines for Critically Regulated Areas, Lower Thames Valley Conservation Authority
9.4	Endangered Species Act Regulations, Ministry of Natural Resources and Forestry (MNRF) (transferred to MECP in 2019)
10.0	**Wastewater Servicing Planning and Design Guidelines**
10.1	Ontario Ministry of the Environment Design Guidelines for Sewage Works. MECP 2008.
10.2	Rodney STP Certificate of Approval and amended Certificate of Approval.
10.3	Rodney STP Annual Report for 2013, Municipality of West Elgin.
10.4	Background water quality sampling of Sixteen Mile Creek. Sco-Terra Consulting Group Limited, 2013

Appendix B Public and Agency Consultation

Seaside Wastewater Servicing Municipal Class EA
Contact List (for publication in ESR)
June 2019

1. Municipalities

Municipality of West Elgin
Genevieve Scharback, CAO/Clerk, gscharback@westelgin.net

Municipality of West Elgin
Heather James, Planner, planner@westelgin.net

County of Elgin
Julie Gonyou, CAO/Clerk, cao@elgin.ca)

County of Elgin
Steve Evans, Manager of Planning, sevans@elgin.ca

2. Provincial Ministries

Ministry of the Environment, Conservation and Parks
Southwestern Region
Craig Newton, Regional Environmental Planner/Regional EA Co-ordinator Craig.Newton@ontario.ca

Ministry of the Environment, Conservation and Parks
Southwestern Region
Hugh Geurts, Surface Water Specialist Hugh.Geurts@ontario.ca

Ministry of Municipal Affairs and Housing
London Municipal Services Office
Marion-Frances Cabral, Team Lead, Regional Planning Marion-Frances.Cabral@ontario.ca

Ministry of Natural Resources and Forestry
Aylmer District Karina Cerniavskaja, District Planner, MNRF.Ayl.Planners@ontario.ca

3. Conservation Authority

Lower Thames Valley Conservation Authority
Valerie Towsley, Resource Technician Valerie.Towsley@ltvca.ca

4. First Nations

Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, Ontario N0N 1J2
Attn.: Chief Jason Henry

Munsee-Delaware Nation
R.R. 1 Muncey, Ontario N0L 1Y0
Attn.: Chief Roger Thomas

Chippewas of the Thames First Nation
320 Chippewa Road
Muncey, Ontario N0L 1Y0
Attn.: Fallon Burch, fburch@cottfn.com and consultation@cottfn.com

Delaware Nation, Moravian of the Thames
14760 School House Line
R.R. 3 Thamesville, Ontario N0P 2K0
Attn.: Chief Denise Stonefish

Caldwell First Nation, The People of the Lake
14 Orange Street
Leamington, Ontario N8H 1P5
Attn.: Mary Duckworth

Oneida Nation of the Thames, ONYOTA'A:KA
2212 Elm Avenue
Southwold, Ontario N0L 2G0
Attn.: Jessica Hill

Walpole Island First Nation, Bkejwanong Territory
117 Tahgahoning Road
Walpole, Ontario N8A 4K9
Attn.: Chief Dan Miskokomon

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia, Ontario N7T 7H5
Attn.: Chief Chris Plain

5. Public

Names of private individuals not included to comply with the Protection of Privacy and Freedom of Information Act.

Gary Blazak, Planning Consultant
P.O. Box 444, Lambeth Station
London, Ontario
N6P 1R1

August 1, 2019

First Nation
Address Line
City, Ontario
Postal Code

Attention: (add)

Seaside Developments Inc.
Proposed Seaside Development, Port Glasgow, Municipality of West Elgin
Wastewater Servicing Class Environmental Assessment
Notice of Completion, Environmental Study Report

Dear (add):

The Environmental Study Report (ESR) for the Wastewater Servicing Class Environmental Assessment (EA) for the proposed Seaside development in Port Glasgow, West Elgin, has been completed. As explained in the enclosed Notice of Completion, the ESR is available for review and comments from **August 16 to September 14, 2019**, at the locations noted in the notice.

Prepared under the Municipal Class EA (October 2000, as amended), the ESR documents the planning and design process leading to the selection of the preferred wastewater services for the proposed Seaside development. The proposed development consists of approximately 400 residential units and 5,000 m^2 of commercial floor space.

This letter provides an overview of the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.

1. Preferred Wastewater Servicing

Phase 3 of the Class EA process identified the following wastewater services as preferred:

Stormwater Management (SWM)
SWM for the development will be provided by Low Impact Development (LID) measures, combined with decentralized SWM facilities for water quality and erosion control. For the westerly portion of the development, stormwater will flow to a constructed wetland for further polishing and nutrient uptake before being discharged to Sixteen Mile Creek. The LID approach to SWM reduces water quality and erosion impacts and converts urban stormwater run-off from "wastewater" to a resource.

Sanitary Sewage Treatment
Sanitary sewage treatment will be provided by a centralized private wastewater treatment facility (WWTF) located on Block 33 in the southwest corner of the Draft Plan of Subdivision. Sewage will flow to the facility by a conventional gravity sewage collection system. Effluent from the facility will flow by

continuous surface water discharge, first to a constructed wetland for further polishing and nutrient uptake, then to Sixteen Mile Creek, ultimately discharging to Lake Erie. The constructed wetland is also part of the proposed SWM system. A Membrane Bioreactor (MBR) was chosen as the preferred plant process option for the WWTF.

2. Surface and Groundwater Impacts

Since the LID approach and preferred SWM facilities in Seaside convert stormwater run-off from wastewater to a resource, the facilities are capable of returning water of an enhanced quality to the natural environment. The water quality and erosion control targets achieved by the LID measures will provide aquifer recharge and stream baseflow beneficial to groundwater and surface water resources.

The WWTF will be designed to meet the following effluent quality criteria, as agreed with the Ontario Ministry of the Environment, Parks and Conservation during pre-consultation on the project.

Seaside WWTF - Effluent Quality Criteria

Parameter	Effluent Objective Criteria		Effluent Limit Criteria	
	Summer	Winter	Summer	Winter
$cBOD_5$ (mg/L)	5	5	10	10
Suspended Solids (mg/L)	5	5	10	10
Total Phosphorus (mg/L)	0.15	0.15	0.3	0.3
Ammonia Nitrogen (mg/L)	2	4	3	5
E. coli (CFU/100 ml)	<50 cfu/100ml		<100 cfu/100ml	

These criteria reflect stringent compliance limits for CBOD5 (Carbonaceous Biochemical Oxygen Demand), Suspended Solids, Total Phosphorus, Ammonia-Nitrogen and E. coli typically associated with dry-ditch discharge in Ontario. The proposed effluent quality is intended to mitigate impacts on the receiving surface water resources, including the primary receiver (Sixteen Mile Creek) and ultimate receiver terminal (Lake Erie). Redundant ultra violet disinfection treatment units following tertiary filtration will destroy E.coli to non-detect limits, thereby protecting downstream water resources and public use of these resources.

3. Impacts on Natural Heritage Resources

The proposed wastewater services are expected to have minimal impacts on natural heritage resources:

- No direct impacts on fish habitat in Sixteen Mile Creek and Lake Erie will be caused. The proposed constructed wetland will improve fish habitat in the existing wetland
- As mentioned, the proposed SWM facilities will return water of an enhanced quality to Sixteen Mile Creek and Lake Erie. The WWTF will have no adverse impacts on the water quality of Sixteen Mile Creek and Lake Erie

- No Provincially Significant Woodlands will be affected. Vegetation affected by the proposed constructed wetland and WWTF consists of a red cedar plantation and a forb mineral meadow marsh, both of which are not significant
- Migratory and other protected birds will be protected by timing restrictions on vegetation removal prohibiting vegetation removal during the bird nesting season
- The developer's consulting biologists are currently working with the Ministry of Natural Resources and Forests (MNRF) to avoid impacts on potentially affected Species at Risk. These species include Snapping Turtle (a species of Special Concern), Milksnake (a species of Special Concern) and Painted Skimmer and Swamp Darter dragonflies (Conservation Status ranked).

4. Impacts on Cultural Resources

According to archaeological assessments completed by Seaside's licensed consulting archaeologist, lands affected by the proposed constructed wetland and WWTF have low archaeological potential due to the steep topography of the Sixteen Mile Creek valley. No further archaeological assessments of these areas are required.

The remainder of the Seaside site has high potential for the discovery of pre-contact Aboriginal and Euro-Canadian archaeological resources. Eight archaeological sites were discovered and subsequently registered, including some Early Woodland period (1000 to 400 BC), possibly with an Early Archaic component (7800 to 6000 BC). More detailed archaeological assessments are still required for four of these sites. The assessments will be completed as a condition of the final approval of Seaside's Draft Plan of Subdivision application. A member of one of the First Nations interested in the development of Seaside will be invited to monitor the more detailed assessments.

Like all lands across Ontario, it is possible that Aboriginal or Euro-Canadian human burials could be discovered during construction of the wastewater services. For this reason, the construction contract will include a protocol for dealing with the discovery of human remains.

5. Closure

If you have any comments, questions or concerns, please contact the undersigned at 519-639-1419 or gblazak@rogers.com.

Yours truly,

Gary Blazak, MA, RPP, MCIP
Planning Consultant

cc: Craig Newton, MEPC, Regional Environmental Planner/EA Co-ordinator

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:53 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Miskokomon-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 11:31 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <drskoke@wifn.org>, <dean.jacobs@wifn.org>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Miskokomon and Mr. Jacobs. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:54 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Stonefish-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 10:45 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <denise.stonefish@delawarenation.ca>
Cc: Gary Blazak <gblazak@rogers.com>

Dear Chief Stonefish. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:51 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Thomas-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 10:38 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <chief@muncey.ca>, <glenn@muncey.ca>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Thomas. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:52 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Plain-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 11:35 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <chief@aamjiwnaang.ca>, <sjohnston@aamjiwnaang.ca>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Plain and Ms. Johnston. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:54 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Duckworth-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 11:11 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <chief.duckworth@caldwellfirstnation.ca>, <nikki.orosz@caldwellfirstnation.ca>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Duckworth. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:54 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Jason Henry-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 10:33 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <jason.henry@kettlepoint.org>, <valerie.george@kettlepoint.org>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Henry and Ms. George. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

Laura McLennan

From:	Janet Smolders <janetmsmolders@gmail.com>
Sent:	Monday, January 6, 2020 2:53 PM
To:	Laura McLennan
Subject:	Fwd: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
Attachments:	Chief Hill-Seaside First Nations Notice of Completion Letter.pdf; Seaside Notice Revise_West Elgin Chronicle proof.pdf

---------- Forwarded message ---------
From: **Janet Smolders** <janetmsmolders@gmail.com>
Date: Tue, Nov 19, 2019 at 11:18 AM
Subject: Seaside Developments Inc., Wastewater Servicing Class EA, Environmental Study Report
To: <jessica.hill@oneida.on.ca>, <cherilyn.hill@oneida.on.ca>
Cc: Gary Blazak <gblazak@rogers.com>

Hello Chief Hill and Ms. Hill. As part of the Integrated Municipal Class EA/Planning Act process for the Seaside development, we are currently revising the ESR prepared for the proposed wastewater services. A copy of our August 1, 2019, letter to the First Nation, along with the Notice of Completion, are attached to this email. The August 1 letter describes the preferred wastewater services and potential impacts on surface and groundwater, natural heritage resources and cultural resources.
We did not receive a reply from the First Nation. To ensure that the revised ESR incorporates your input, please forward any comments, questions or concerns to Gary Blazak at 519-639-1419 or gblazak@rogers.com. We will follow up with a phone call to you over the next few days.
Thank you
Janet Smolders, Planner, on behalf of Gary Blazak, Planning Consultant

CHIPPEWAS OF THE THAMES FIRST NATION

November 14, 2018

VIA EMAIL

Gary Blazak, MCIP, RPP
Planning Consultant
Box 444, Lambeth Station
London, ON N6P 1R1

RE: Proposed Seaside Development, Port Glasgow, Municipality of West Elgin Wastewater Servicing Class Environmental Assessment

Dear Mr. Blazak,

We have received a *Notice of Completion* concerning the above-mentioned project, dated August 1th, 2019. The proposed project is located within the Mckee Treaty Area (1790) to which Chippewas of the Thames First Nation (COTTFN) is a signatory, and is also within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN's Traditional Territory.

We presently do not have any major concerns with the proposed project. However, I do recommend that this First Nation receive regular project updates. I would like to be given the opportunity to review the mitigation plan for the species at risk, and all archaeology studies associated to this project. We do request that if any archaeology assessments should arise, we require notification and the opportunity to actively participate by sending an Archaeology Field Liaison on behalf of COTTFN. All notifications and project reports can be sent electronically to consultation@cottfn.com.

We look forward to continuing this open line of communication. To implement meaningful consultation, COTTFN has developed its own protocol — a document and a process that will guide positive working relationships. We would be happy to review COTTFN's Consultation Protocol with you.

Please do not hesitate to contact me if you need further clarification of this letter.

Sincerely,

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
(519) 289-5555 Ext. 251
consultation@cottfn.com

Gary Blazak
Planning Consultant

P.O. Box 444 Lambeth Station
London, ON N6P 1R1

September 6, 2019

VIA EMAIL

Chippewas of the Thames First Nation
329 Chippewa Road
Muncey, Ontario
N0L 1Y0

Attention: Mr. Fallon Burch, Consultation Coordinator

Seaside Developments Inc.
Proposed Seaside Development, Port Glasgow, Municipality of West Elgin
Wastewater Servicing Class Environmental Assessment
Notice of Completion, Environmental Study Report

Dear Mr. Burch:

Thank you for your recent letter (incorrectly dated November 14, 2018) with the First Nation's comments on the Environmental Study Report (ESR) prepared for the Seaside Wastewater Servicing Class Environmental Assessment (EA). The 30-day review period for the ESR extends from August 16 to September 14, 2019.

In response to your comments:

1. Species at Risk

As noted in Section 7.6 and Table 7.1 of the ESR, construction of the proposed wastewater facilities potentially affects the habitat of Snapping Turtle (a species of Special Concern), foraging habitat for Milksnake (Special Concern) and the habitat of Provincially S-ranked dragonflies. Prepared in consultation with the Ministry of Natural Resources and Forests (MNRF), the following mitigation measures have been developed to avoid impacts on these species:

- Fact Sheets and detection protocols will be provided to the contractor prior to construction of the facilities
- Measures will be put in place to prevent turtles and Milksnake from entering the construction area prior to April 1 and kept in place until October 1. These measures will comply with MNRF's *Best Practices Technical Note on Reptile and Amphibian Exclusion Fencing*.

As required by the *Municipal Class EA* (October 2000, as amended), these measures will be incorporated into the Contract for the construction of the wastewater services. An Information Gathering Form (IGF)

under the *Species at Risk Act* has been submitted to MNRF to advise the Ministry about potential impacts on these species. No other Species at Risk are affected by the proposed wastewater facilities.

The Seaside development still requires final Plan of Subdivision approval under the *Planning Act* by the approval authority, the County of Elgin. The conditions to the final approval will require that any Species at Risk on the remainder of the Seaside lands (outside the lands affected by the wastewater facilities) be protected under the *Species at Risk Act*. For further information on the Plan of Subdivision approval process for Seaside, please contact Mr. Steve Evans, Manager of Planning, County of Elgin, sevans@elgin.ca.

2. Archaeological Assessments

As noted in Section 7.6 and Table 7.1 of the ESR, the proposed wastewater facilities have no impacts on archaeological resources. According to a Stage 1 Archaeological Assessment prepared by Mayer Heritage Consultants Inc. in 2007, the Wastewater Treatment Facility (WWTF) site and constructed wetland have low archaeological potential since they are located in the Sixteen Mile Creek valley with steep topography. As a result, no further archaeological assessments of these areas are required. Archaeological clearance will be required from the Ministry of Tourism, Culture and Sport prior to construction of the wastewater facilities.

Like all lands across Ontario, it is possible that Aboriginal or Euro-Canadian human burials could be discovered during construction of the wastewater services. For this reason, the construction Contract will include a protocol for dealing with the discovery of human remains.

The remainder of the Seaside site (outside the lands affected by the wastewater facilities) has high potential for the discovery of pre-contact Aboriginal and Euro-Canadian archaeological resources. Eight archaeological sites were discovered and subsequently registered, including some Early Woodland period (1000 to 400 BC), possibly with an Early Archaic component (7800 to 6000 BC). More detailed archaeological assessments are still required for four of these sites. The assessments will be completed as a condition to the final approval of Seaside's Plan of Subdivision application.

As requested in your letter, Seaside's Consulting Archaeologist will notify the First Nation (at consultation@cottfn.com) prior to the archaeological assessments required for the Plan of Subdivision. At that time, the First Nation will be invited to participate as an Archaeology Field Liaison.

3. Regular Project Updates

As noted in Section 7.9, construction of the proposed wastewater facilities is currently scheduled for the summer of 2020, subject to the receipt of all required approvals. The First Nation will be contacted prior to construction for your input on Species at Risk and cultural resources.

Thanks again for your comments. If you have other comments, questions or concerns, please call me at 519-639-1419.

Yours truly,

Gary Blazak, MCIP, RPP
Planning Consultant

cc: Craig Newton, MEPC, Regional Environmental Planner/EA Coordinator
David O'Gorman, MTE Consultants Inc.

Port Glasgow Yacht Club

P.O. Box 315, Rodney, ON N0L 2C0

August 19th, 2019

TO: **Gary Blazak, MCIP, RPP**
Planning Consultant
and,
David O'Gorman, PMP
Manager, Municipal

RE: **Seaside Wastewater Servicing Municipal**
Class Environmental Assessment
Notice of completion

In response to the Notice of Completion issued August 8th, 2019 the Port Glasgow Yacht Club and Marina provides the following:

The preferred option you identify provides for the construction of a wastewater management, enclosed facility to be in the southwest corner of the "draft plan" that will ultimately discharge processed effluent into Sixteen Mile Creek. Sixteen Mile Creek has been identified by you as being an "open flow" to Lake Erie. Your material identifies minimal impact to creek out flow during periods of heavy rain and that; treated effluent from the WWTF will meet strict compliance criteria set by the Ministry of the Environment, Parks and Conservation.

Port Glasgow Yacht Club and Marina have concerns that we wish to have you respond to.

First, your preferred option based on somewhat dated (2007 to 2014) data does not accurately represent the capacity of Sixteen Mile Creek currently. For the past three years Lake Erie water levels have increased dramatically and this season levels are well in excess of historical chart datum. Climatic studies from various sources are predicting the high-water state will not only remain but will increase over the next season(s).

The result of this high-water is that; Sixteen Mile Creek is often overpowered by lake levels, backs up which has and continues cause flooding and erosion of low-lying areas on the west side of the marina draining into the basin, the parking area of the West Elgin municipal beach and encroaches on and could negatively impact the marina aerobic septic bed. This is further exacerbated by much higher than normal rainfall. These factors would not appear to have been contemplated when original studies were done. Digital images of this flooding taken August 16th are attached.

Second the West Elgin municipal beach has been awarded Blue Flag designation. With effluent, all be it processed as you indicate, flowing into the creek and ultimately discharged into the lake there is a concern such designation may be in jeopardy.

Lastly despite the indication the wastewater management system will adhere to strict provincial guidelines there is in our view a valid concern that odor may have a negative impact on a major tourist area in West Elgin.

Sincerely,

The Board of Directors
Port Glasgow Yacht Club and Marina

Gary Blazak
Planning Consultant
P.O. Box 444 Lambeth Station
London, ON N6P 1R1

September 6, 2019

VIA EMAIL

Port Glasgow Yacht Club
P.O. Box 315
Rodney, Ontario
N0L 2C0

Attention: Board of Directors, Port Glasgow Yacht Club and Marina

Seaside Developments Inc.
Proposed Seaside Development, Port Glasgow, Municipality of West Elgin
Wastewater Servicing Class Environmental Assessment
Notice of Completion, Environmental Study Report

Dear Board of Directors:

Thank you for your letter dated August 19, 2019, expressing the Board of Directors' concerns regarding the Environmental Study Report (ESR) prepared for the Seaside Wastewater Servicing Class Environmental Assessment (EA). In response to your comments:

1. WWTF Discharge to Sixteen Mile Creek

As described in Section 7.2 of the ESR, the selected design concept for the proposed wastewater treatment facility (WWTF) consists of a centralized private communal plant on Block 33 of the Seaside development using a Membrane Bioreactor (MBR) sewage treatment system with surface water discharge to a constructed wetland, Sixteen Mile Creek and ultimately to Lake Erie. The constructed wetland will provide further polishing and nutrient uptake and control the quantity of discharge to Sixteen Mile Creek. Since the increase in flow is not significant enough to affect stream morphology, the discharge from the Seaside development will not alter the current characteristics of the creek.

The increase in base flow in Sixteen Mile Creek is expected to have some benefits:

- Constant discharge from the WWTF is expected to have a positive effect on the flow of Sixteen Mile Creek, particularly during summer low flow conditions. This will help improve fish habitat and recreational fishing in the creek

- As you know, the area around the mouth of the creek is prone to flooding resulting from sand buildup along the shore of Lake Erie during large storm events. Supplemental baseflow from the WWTF may assist in mitigating the impoundment of flow at the creek mouth, thereby reducing the level of algae in the creek and Lake Erie at Port Glasgow. As outlined in Sections 7.2 and 7.6 of the ESR, the cause of the buildup of sand will be further analysed during the detailed

engineering design of the wastewater facilities. A design solution will then be developed to prevent the sand buildup and backup of Sixteen Mile Creek.

2. Lake Erie Water Levels

Since the Seaside development and associated infrastructure are not being constructed within the flood plain of Lake Erie, they will have no impacts on potential flood events caused by large rain events.

3. Sixteen Mile Creek Water Quality

The effluent design objective and compliance criteria shown on Table 5.7 of the ESR reflect relatively stringent compliance limits for CBOD5, Suspended Solids, Total Phosphorus, Ammonia-Nitrogen and E.coli, typically associated with dry-ditch discharge in Ontario. These criteria were developed in consultation with the Ministry of the Environment, Conservation and Parks (MECP). Since the proposed WWTF has been designed to meet or exceed these criteria, impacts on the natural environment, including water quality impacts on the primary (Sixteen Mile Creek) and terminal (Lake Erie) receiving watercourses, will be mitigated.

As discussed with MEPC and outlined in the ESR, the proposed Seaside WWTF will also employ ultra-violet disinfection treatment units following tertiary filtration. This will achieve destruction of E.coli to non-detectable limits, thereby protecting downstream water resources and the public use of these resources. As mentioned, the treated effluent will be discharged to a constructed wetland for further polishing and nutrient uptake. It is important to note that this criteria is more stringent than the effluent E.coli requirements for the Rodney Sewage Treatment Plant which also discharges to Sixteen Mile Creek.

Based on background water quality sampling, the proposed Seaside WWTF will achieve superior bacteriological quality for E.coli compared to the background levels in Sixteen Mile Creek during the summer period. The facility will also completely eliminate contamination associated with other uses of these lands, such as farming activities. In addition, it will provide increased biodiversity with the improvement of the constructed wetland as new habitat.

4. Blue Flag Beach Designation

The effluent E.coli limits for the proposed WWTF, developed in consultation with MEPC, are below the limits for beach closure in Ontario (100 CFU/100 ml) specified by the Ministry of Health. The effluent criteria will be verified through the submission of an Environmental Compliance Approval application to MECP pursuant to Section 53 of the *Ontario Water Resources Act*. Also, as mentioned, the supplemental baseflow from the WWTF may assist in mitigating the impoundment of flow at the creek mouth, thereby reducing the level of algae in the creek and Lake Erie at Port Glasgow.

5. Noise and Odour

As outlined in Section 7.6 of the ESR, the proposed Seaside WWTF is expected to have no noise or odour impacts on surrounding lands since the facility will be located in a fully enclosed building with a covered and sealed outdoor covered tank. No buffer is required under MEPC guidelines.

Thanks again for your comments. If you have other comments, questions or concerns, please call me at 519-639-1419.

Yours truly,

Gary Blazak MA, RPP, MCIP
Consulting Planner

cc: Craig Newton, MEPC, Regional Environmental Planner/EA Coordinator
David O'Gorman, MTE Consultants Inc.

Ontario

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON N6E 1L3
Tel: 519 873-5000

Ministère de l'Environnement, de la Protection de la nature et des Parcs
Direction régionale du Sud-Ouest
733, rue Exeter
London ON N6E 1L3
Tél.: 519 873-5000

September 27th, 2019

MTE Consultants Inc.
123 George Street
London, Ontario
N6A 3A1

Attention: Mr. David O'Gorman, Division Manager, Municipal

Re: Notice of Completion Seaside Wastewater Servicing Municipal Class EA Environmental Study Report, Port Glasgow, Municipality of West Elgin Dated July 31st, 2019

Dear Mr. O'Gorman:

This letter acknowledges this ministry's receipt, with thanks, the Notice of Completion for the Seaside Wastewater Servicing Municipal Class EA Schedule C Environmental Study Report, Port Glasgow, Municipality of West Elgin, Dated July 31st, 2019. As you know, the proponent of this project has chosen to follow the Integrated Municipal Class EA / Planning Act planning and design process for a Schedule "C" project, as outlined in the Municipal Engineers Association Municipal Class EA.

Also, as you, know, it was previously agreed amongst agencies, that for this proposed project, the Ministry of Environment, Conservation and Parks Southwestern Region (MECP SWR) would act as the One Window for this project. More specifically, MECP SWR would co-ordinate the review comments of: the Elgin County Planning Department; the Ministry of Municipal Affairs and Housing (MMAH): the Ministry of Natural Resources and Forestry (MNRF): the Lower Thames River Conservation Authority (LTRCA); and the Ministry of Environment, Conservation and Parks (MECP) on the July 31st, 2019 Environmental Study Report into a single written response.

The Elgin County Planning Department:

The County of Elgin has provided the following comments:

1. ESR July 31st, 2019 – Gary Blazak Planning Consultant & MTE Engineering:

Section 2.3.3 reference to (File No. 34T-WE1501A) should be File No. 34T-WE1501

- Table 2.2 Seaside Development Distribution – Residential Population and Commercial Uses – this table makes references to Blocks that do no appear on the draft plan

- Section 2.9 Cultural Heritage Resources – second last paragraph states: *"However, this report is no longer valid since the location of the SWM facilities was changed after the report was prepared".*

- Section 2.10 Local/Provincial Planning Policies – this section makes no reference to the County of Elgin Official Plan which includes policies about Natural Heritage, Water and Natural Hazards, Development Policies as well as marine archaeological resources.

- Page 95 Impacts and Avoidance/Mitigation Measures – The planned wastewater services will have no impacts on ....however 2nd and 4th bullet points state that more work will be required for erosion and S – ranked floral species

- Section 7.7 Approvals required during detailed design and prior to construction – the last paragraph states that these approvals require further consultation with a number of agencies, however, the County of Elgin as the approval authority is not included.

2. Environmental Impact Study, Updated March 2018:

- As a general comment there appears to be more work required in the following areas:

  - Targeted whip-poor-will nesting surveys
  - Woodlands of Sixteen Mile Creek
  - Habitat for concern and rare species i.e. snapping turtles, dragonflies
  - Fish Habitat
  - Removal of vegetated areas
  - Butternut
  - Scoped EIS will be required for final servicing concepts

The Ministry of Municipal Affairs and Housing:

MMAH continues to support the option of coordinated water and wastewater services over the private partial servicing options presented by the proponent. As stated in MMAH's January 4, 2016 and May 30, 2016 letters, the PPS, 2014 encourages comprehensive and coordinated planning of water and wastewater infrastructure, and it encourages that healthy, integrated and viable rural areas be supported by the efficient use of rural infrastructure. MMAH encourages the proponent to look at alternatives to an on-site WWTF and consider an approach that coordinates and maximizes infrastructure with nearby communities, and that any decisions are not based on costs alone but on

the principles and merits of good planning. Furthermore, MMAH supports the provision of municipal water services. MMAH will continue to review the project as it moves forward, especially as the proponent seeks approval for *Planning Act* applications in coordination with this Municipal Class Environmental Assessment.

The Ministry of Natural Resources and Forestry:

The Ministry of Natural Resources and Forestry has provided the following comments:

1. General Comments:

- The Ministry of Environment, Conservation and Parks (MECP) has now assumed responsibility for the *Endangered Species Act* (ESA), including species at risk (SAR) in Ontario. All future correspondence related to ESA or SAR should be sent to SAROntario@ontario.ca to reach the MECP directly.

- All references to the Ministry of Natural Resources and Forestry (MNRF) and future ESA requirements should be changed to MECP to reflect the transfer of the legislation

- MNRF would like to be continually notified of the project activities (e.g. review of the detailed design phases and any specific mitigation or monitoring plans for Significant Wildlife Habitat impacts).

2. Environmental Study Report:

- On Page 29, 'Swamp Darter' should read 'Swamp Darner'

- On page 30, 92 & 96, '*Species at Risk Act*' should read '*Endangered Species Act*'

- Within Appendix B, please change the MNRF Aylmer District contact to Karina Cerniavskaja, District Planner, MNRF.Ayl.Planners@ontario.ca

3 Environmental Impact Study:

- Section 6.9, Opportunity 3 discusses the integration of a formal trail system that links the proposed developed with Sixteen Mile Creek. MNRF recommends that the design and location of any trails should avoid locations of species of conservation concern and significant wildlife habitats wherever possible (e.g. Carrion Flower, Eastern Narrow-leaved Sedge).

- MNRF recommends including a monitoring plan (to track success of transplanting efforts and adaptive management strategies) for replanting of species of conservation concern/rare plants

The Lower Thames River Conservation Authority:

The Conservation Authority is responsible for addressing the Natural Hazard Section of the Provincial Planning Policy Statement as well as the Conservation Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation, R.S.O. 152/06 under the Conservation Authorities Act.

After reviewing LTRCA files and mapping, staff determined that the property in question is subject to the Authority's Development and Alteration to Watercourses and Shorelines portion of the regulations. The issue of concern in this area is the Lake Erie shoreline, the watercourse and associated ravine system, stable slopes and erosion.

Materials Reviewed:

1. Seaside Wastewater Servicing, Port Glasgow, Municipality of West Elgin, Municipal Class Environmental Assessment Integrated with the Planning Act, Environmental Study Report, July 31, 2019.

Engineering Comments

Current Drainage Conditions:

The tablelands east of Havens Lake Road, Havens Lake Road and a portion of the tablelands west of the road drain to a gully system and intermittent watercourse east of Havens Lake Road which outlets to the Port Glasgow Marina. The storm system consists of open channel (gullies) and enclosed storm sewer segments.

The remainder of the area on the west side of the Havens Lake Road Drain into Sixteen Mile Creek.

SWM Design:

It is understood that:

- Enhance water quality protection will be provided for all three sub-catchment areas
- For erosion control, 2- year peak flows will be kept at or lower than pre-development flows
- The footprint of the SWM will be minimized
- Thermal control will be provided for the discharge into Sixteen Mile Creek
- The design will involve quantity control to avoid coincidental peaking of East Tableland sub-catchment and Havens Lake Road sub-catchment.

SWM Design Concepts and Evaluation Criteria:

- Design concept 1B is acceptable.

- Design concept 2A is acceptable because it provides more hydraulic capacity and enhances water quality.
- Design concept 3A might prove to be ineffective during the high lake levels. This might lead to public health concerns as well. Climatic studies from various sources are predicting the high-water state will increase over the next few seasons. A new design concept is most advisable that takes the above into consideration.

Concerns Over the Proposed WWTF:

- Port Glasgow Yacht Club has expressed their concerns over the potential impact of this WWTF on local tourism and on the Blue Flag status of the West Elgin Municipal Beach. These concerns were received by Lower Thames Valley Conservation Authority (LTVCA) on 21 August 2019.

- Port Glasgow Yacht Club also expressed their concern over the back-water impacts on the capacity of the Sixteen Mile Creek due to the high lake levels. LTVCA shares the same concern.

Sixteen Mile Creek has a backwater flooding issue at its mouth that results from the sand build-up. The cause of sand build-up is a result of wave action pushing sediments back up along the beach after spring freshet. The lack of force of flowing water consistently exiting the creek results in the lakes ability to refill the outlet channel seasonally.

It is understood that a solution to this issue will be determined during the detailed design phase. Please keep in mind that any 'solution' that requires the installation of hard infrastructure or altering the outlet in any way will require a permit from this office, prior to any work/activity taking place. A report from a Coastal Engineer on the long-term processes affecting this stretch of shoreline and the impacts to this area in relation to any proposed development would be required. A hearing before the Authority's Executive Hearing Committee to review the submission will be required should recommended work not conform with Board approved policies and guidelines. Please note that the proponent obtaining the report does not necessarily mean the application will be approved. It is highly recommended that anyone interested in undertaking works to/on shoreline property come in to the LTVCA Administration Office for pre-consultation with our Water Resources and Regulations Technician to ensure that what they want to do can be undertaken.

Additional Comments:

The proposed outlet from the WWTF is to an enhanced wetland that was part of compensation work required by the Department of Fisheries and Oceans (DFO) for a municipal project. DFO approval for this alternate use must be obtained to determine if they would be in agreement with the use of the wetland as a component of the WWTF process.

The plan does not address the current climate trends and the high-water levels in Lake Erie. Due to the high lake levels, the beach area had been flooded and the constructed wetland further inland had water deeper than normal conditions throughout the area. If the same conditions occur again, this could lead to water quality issues in Sixteen Mile Creek and Lake Erie as a result of the higher water levels. This has the potential to lead to problems with the polishing and nutrient uptake of the WWTF effluent in the constructed wetlands.

The Ministry of Environment, Conservation and Parks:

The Ministry of Environment, Conservation and Parks provides the following comments:

Sewage Treatment Works:

The design specification for the WWTP is a package sewage treatment plant that will discharge to a constructed wetland and from the constructed wetland into Sixteen Mile Creek. It should be noted that compliance limits for the facility should be set at a geographic point prior to discharge to the constructed wetland.

MECP SWR is generally satisfied with the information provided in Section 5.9 WWTF Effluent Quality Criteria with regard to Sanitary Servicing and is consistent with the Functional Servicing Report provided by Scoterra Engineering 2011 (see attachment). The ESR notes on Page 73, under the heading of Section 5.9 WWTF Effluent Criteria that redundant UV disinfection will result in virtual non detect of E.coli.

There has been concern put forth by involved third parties with respect to sand build up at the Sixteen Mile Creek outlet with the Lake; effectively damming the creek and creating a backwater effect. MECP agrees that this may be problematic. On Page 92, Table 7.1 of the ESR, the following is noted. *"…. The cause of the build-up will be further analyzed. A design solution will then be developed to prevent the sand build up and back up of Sixteen Mile Creek".*

It is this ministry's understanding that this proposal is for a condominium development, and not individual freehold ownership through a traditional draft plan of subdivision. As such, this Section of the EA must include a written acknowledgement that a legally binding municipal responsibility agreement will be put in place between the municipality and the owner (namely the condominium corporation), along with the provision of sufficient financial assurance, so that the municipality will take over operation of the sewage collection and treatment systems (sanitary and storm) in the event of default by the condominium corporation. The owner must be the condominium corporation, not the supplier of the WWTF as expressed in Section 7.5 of the ESR. The ESR should also acknowledge that if this proposal were not to proceed by plan of condominium, but rather by draft plan of subdivision, through individual freehold ownership, the sewage collection and treatment systems both for sanitary sewage and stormwater must be fully municipally owned and operated into perpetuity.

MOE August 1996 Guideline D-2 Compatibility between Sewage Treatment and Sensitive Land Uses provides recommended and minimum buffer separation distances between sewage treatment works and sensitive land uses, based on type of sewage works (mechanical plant vs. lagoon) and/or volume of sewage to be treated.

Section 5.8 WWTF Preferred Receiver and Location states that the WWTF will require a site of approximately 0.1 hectare to accommodate the facility in an enclosed building with no outdoor tanks. The sewage treatment works is proposed to be situated on Block 33 (designated for Open Space WWTF and Services). According to the proponent, no buffer is reportedly required because the system will be in an enclosed building.

Notwithstanding the proponent's claim that no buffer is required, how many meters of buffer separation distance will there in fact be between the sewage treatment works and the nearest sensitive land use? Please confirm and advise this ministry accordingly.

As noted in attached MOE Guideline D-2, a separation distance of less than 100 meters may be permitted, however a qualified professional must produce a study, to the satisfaction of this ministry, showing the feasibility of the distance based on:

a) the application of noise reduction equipment to any potential noise source(s), and;

b) the degree and type of odour mitigation applied to the facility.

c) other contaminants of concern (i.e. aerosols) which may need to be addressed.

Source Protection:

The July 31st, 2019 ESR does not include any discussion of drinking water source protection. As per the 2015 amendments to the Municipal Engineers Association (MEA) Class EA parent document, proponents undertaking a Municipal Class EA project must identify whether a project is occurring within a vulnerable area early in the process, as policies in the local source protection plan may apply to the proposed activities.
The study area for the proposed Seaside development's wastewater treatment facility is in the Lower Thames Valley Source Protection Area; and therefore, falls under the Thames-Sydenham and Region Source Protection Plan. The study area is not located in a vulnerable area (See Figure 1 Below).

Please include a section in the report on Source Water Protection. Specifically, it should explain that the project is not located in a vulnerable area, and does not change or create new vulnerable areas; and therefore, policies in the local source protection plan do not apply to the proposed activity.

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plans and assessment reports: https://conservationontario.ca/conservation-authorities/source-water-protection/source-protection-plans-and-resources/.

Figure 1 – Location of the study area (red pin) for the Wastewater Servicing Plan for the proposed Seaside development in Port Glasgow, Elgin County. The location of the protection zones for the nearest drinking water system intakes (West Elgin primary and emergency) are indicated in light blue (IPZ-2) and dark blue (IPZ-1).

Species at Risk:

As noted earlier in this letter, the MECP has assumed responsibility for the *Endangered Species Act* (ESA), including species at risk (SAR) in Ontario.

Based upon a review of MECP Species at Risk Files, the proponent submitted an *"Information Gathering Form"* to MNRF last year and the MNRF had many questions concerning SAR species that, to MECP's knowledge, have still not been answered. MECP staff have the exact same questions as previously posed by MNRF staff. Please respond.

Without a review of all the documentation concerning SAR data collection on the site, it is difficult to know which species would need a permit or some other instrument under the ESA. From reviewing the ESR, it appears the proponent only expects impacts to Butternut and Eastern Whip-poor-will. At the moment, MECP staff are uncertain if this is accurate. The ESR isn't clear. More information needs to be provided how the proponent determined no impact to a number of these SAR.

Attached are the second rounds of comments MNRF provided on ESA (prior to transition to MECP). MECP does not have the proponent's responses to the second round of comments in MECP files. Please provide.

Indigenous Consultation:

During the thirty-day public and agency review period, following issuance of the Notice of Completion, MECP noted to the proponent that there is no separate Indigenous Consultation Record or evidence of follow up to the letters sent (ESR notes that they sent letters in 2014 and in Summer 2019) to Indigenous Communities. It appeared to MECP that there may be outstanding questions from Caldwell First Nation as there was reportedly a meeting planned in 2014 that did not occur (no details were provided regarding the circumstances). MECP acknowledged to the proponent that the lack of evidence in the ESR of follow up with communities may just have been an oversight in the documentation. As such, MECP reached out to the proponent to see if they possessed further information on their Indigenous Consultation efforts. The proponent's consultant responded back to MECP's query via a September 2nd, 2019 email.

In response to the September 2nd, 2019 email, although MECP appreciates that there were actions that were not reported in the ESR, it doesn't appear as though the proponent has followed up with the communities. MECP SWR has been consistent with proponents across the region that simple sending a letter is not viewed as enough of an effort to engage the community in dialogue.

Although MECP acknowledges that the proponent did receive one response to their most recent letter. MECP recommends that the proponent also follow up with the other communities. Such follow-up to include but not necessarily be limited to follow-up emails, phone calls, offers to meet in person. All offers to meet / consult to be fully documented in the ESR. If any issues are raised, the ESR to identify those issues, and how those issues were addressed / mitigated.

Steps that can be taken in relation to Indigenous Communities Consultation are also outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link:

https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process

Climate Change:

The proponent is encouraged to include climate change in this EA. Climate change should be considered in the context of mitigation and the context of adaptation. The Ministry has recently released a guidance document to support proponents in including climate change in environmental assessments. The guide can be found online: https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process. It should be noted that Climatic Features is identified in Appendix 2 of the Municipal Class EA page 2-7 (2015).

Should you or any members of your project team have any questions regarding the material above, please contact me directly and I will do my best to answer. In the meantime, the agencies as described herein all await the proponent's written response to the comments as described herein. Please ensure that all agencies are copied on the proponent's response.

Yours truly,

Craig Newton
Regional Environmental Planner / Regional EA Coordinator
Ministry of Environment, Conservation and Parks
733 Exeter Road
London ON, N6E 1L3
519-873-5014

cc Mr. Gary Blazak, President, Gary Blazak Planning Consultant
Mr. Howard Culligan, President Seaside Waterfronts Inc.
Mr. Steve Evans, Manager of Planning, County of Elgin Planning Department
Ms. Heather James, Planner, Municipality of West Elgin
Ms. Marion-Frances Cabral, Planner, MMAH London
Ms. Kathleen Buck, Management Biologist, MNRF Aylmer
Ms. Valerie Towsley, Resource Technician, LTRCA, Chatham
Mr. Hugh Geurts, Surface Water Evaluator MECP SWR, London
Mr. Jeff Mills, Sr. Environmental Officer, MECP London District Office
Ms. Lareina Rising, Sr. Indigenous Advisor, MECP SWR – Sarnia District Office
Ms. Erin Harkins, Program Analyst, MECP Source Protection, Toronto
Mr. Todd Copeland, Regional Species at Risk Specialist, South Porcupine

Attachments (4)

Ministry of Municipal Affairs and Housing

Municipal Services Office - Western

659 Exeter Road, 2nd Floor
London ON N6E 1L3
Tel. (519) 873-4020
Toll Free 1-800-265-4736
Fax (519) 873-4018

Ministère des Affaires municipales et du Logement

Bureau des services aux municipalités - région de l'Ouest

659, rue Exeter, 2e étage
London ON N6E 1L3
Tél. (519) 873-4020
Sans frais 1 800 265-4736
Téléc (519) 873-4018

Ontario

November 3, 2011

Mr. Laverne Kirkness
Kirkness Consulting Inc.
Urban and Rural Planning
1647 Cedarcreek Crescent
London, ON, N5X 0C8

Subject: **Applications for Plan of Subdivision and Common Element Plan of Condominium**
Part of Lot 6, Concession XIV, former Township of Aldborough
Municipality of West Elgin, County of Elgin
Seaside Waterfront Inc.
Ministry File Numbers: 34-T-11002 and 34-CD-11001

Dear Mr. Kirkness:

The purpose of this letter is to bring you up to date on the status of the above-noted applications, to provide you with the Ministry and agency comments received to date, and to request that the proponent indicate how it wishes to proceed.

The draft plans propose the development of 108 lots and blocks for a variety of residential and commercial uses. It is proposed that 76 lots be developed for single detached residential use, 9 blocks for 85 row house units, and future development blocks for residential use. Servicing is proposed to be by municipal water and a privately owned sewage treatment system.

Policies in the new Official Plan relating to this proposal have been appealed to the Ontario Municipal Board (OMB). The Ministry of Municipal Affairs and Housing's decision to approve the West Elgin Official Plan on February 7, 2011, was appealed by Seaside Waterfronts Inc. and Lighthouse Waterfronts Inc. A pre-hearing conference was held on September 9, 2011 (Case No. PL110240).

The Ministry accepted the plan of subdivision and plan of condominium applications as complete pursuant to subsection 51(18) of the *Planning Act.* However, acceptance as complete does not imply any commitment for the Ministry to approve the proposed plans. In addition, as the Official Plan policies and designations are under appeal, it is uncertain what policies and designations will ultimately apply to these lands.

The proposed subdivision and common elements condominium applications were circulated for review with the background documents that were appropriate for the respective Ministry or agency. The comments received to date are attached. You will note that the comments are lengthy and will require further information from the proponent and consultation with the

Ministries, agencies, and the Municipality of West Elgin as set out in the attached chart and in the Appendix.

As a result of the number of comments received from the circulated agencies and Ministries, and the complexity of the issues that need to be addressed, the Ministry is unable to make a decision on the subdivision and condominium applications at this time. We request that the proponent consider and address the attached comments, which may necessitate a redesign of the proposed subdivision and condominium layout.

Until the comments have been addressed, it appears premature for the Ministry to request that the Municipality hold a public meeting, pursuant to subsection 51(21) of the *Planning Act.* It appears to make sense for the proponent to address the comments and consider revising the plans before the public meeting, since substantial changes to the plans may generate the need for a further public meeting. Kindly advise how the proponent wishes to proceed.

Please contact me by telephone at (519) 873-4031, by fax at (519) 873-4018, or by email at tammie.ryall@ontario.ca at your convenience.

Yours truly,

Tammie Ryall

Tammie Ryall, RPP, MCIP
Planner
Municipal Services Office-Western

Enclosure

Copies Ted Halwa, Community Planners Inc.
Norma Bryant, Municipality of West Elgin
Bill Armstrong, MOE
Amanda McCloskey, MNR, Aylmer
Katherine Kirzati, Tourism and Culture, Toronto
Drew Crinklaw, OMAFRA, London
Valerie Towsley, Lower Thames Valley Conservation Authority
Steve Evans, Manager of Planning, County of Elgin
Shirley Brundritt Planning Department, Union Gas Ltd.
Laura Giunta, Hydro One Networks Inc.
Bruno DeSando, Canada Post
Marie Burt, Bell Canada
Mark Weaver, London District Catholic School Board
Bob Seto, Thames Valley District School Board
Suzanne Labrecque, Le Conseil scolaire de district de Centre-Sud-Ouest
Conseil scolaire de district de ecoles catholiques due sud-ouest
Erica Arnett, Elgin St. Thomas Health Unit

Appendix C Biologic Inc., Environmental Impact Study, Seaside Development, Port Glasgow, May 2015, updated March 2018

Available at http://mte85.com//Seaside-Environmental-Study-Report.htm