



Township of Southgate
Dundalk Wastewater Treatment Facility

Municipal Class Environmental
Assessment "Schedule C"

Environmental Study Report

April 2024



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Executive Summary

This Environmental Study Report (ESR) summarizes the Schedule 'C' Municipal Class Environmental Assessment (MCEA) commenced by the Community of Dundalk in 2016 to formulate and evaluate alternative solutions to increase capacity of the wastewater treatment facility (WWTF) to accommodate future population growth. The purpose of this Class EA undertaking is to provide the community with a wastewater treatment solution that is cost effective, reliable, and will satisfy their long-term capacity needs. The following problem statement was developed for the project.

The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social, and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.

The six alternatives considered for increasing the wastewater treatment capacity include:

1. Do Nothing.
2. Reduce Infiltration and Inflow into the Sanitary Sewer Collection System.
3. Implement Water Conservation Methods.
4. Expand and Optimize the Existing Treatment Facility.
5. Construct a Mechanical Plant; and
6. Combination of Two (2) or More of the Above Alternatives.

Based on the stakeholder consultations and the evaluation criteria, the preferred solution is Alternative Six (6). This solution is a combination of reducing infiltration/inflow into the sanitary sewer collection system (2), implementing water conservation methods (3), and expanding and optimizing the existing treatment facility (4). Implementing these alternatives will require a long-term approach to achieve a lasting benefit in terms of available sewage treatment capacity.

Design Concepts investigated for Alternative 4 include:

1. Bishop Water Technologies BioCord Reactors.
2. Nexom SAGR followed by BluePRO System.
3. Lemna Biological Treatment Process.
4. Newterra Clear Membrane Bioreactor;
5. Parkson Biola Extended Aeration and Activated Sludge Treatment System.
6. Triplepoint Ares 750T Aerator, NitrOx, and Aquadisk Media Filter.
7. Veolia MBBR, LagoonGuard and Hydrotech Discfilter; and
8. World Water Works MBBR, DAFs and IFAS.

Based on the evaluation criteria and long-term needs of the WWTF, Design Concept Six (6) was selected. This solution includes improved aeration of the post aeration cell (Cell 5) with the Ares 750T Aerator system, the addition of a NitrOx lagoon ammonia polishing reactor (MBBR) prior to filtration, and replacement of the existing sand filter with an AquaDisk Media Filter. This treatment system

alternative allows the community to increase capacity of the WWTF, retains the minimal operation/maintenance requirements, can be built within the existing WWTF site, and has a capital cost that can be accommodated by the municipality. The preferred WWTF expansion/optimization solution has an expected capital cost estimate of \$4 - \$6 Million.

Environmental and social impacts of implementing the preferred solution are minor and are consistent with the current operation of the WWTF. This will be achieved through the continued use of the existing lagoon system and situating new facilities within the current site. In fact, this project is expected to have a net positive impact on the aquatic environment as annual pollutant loadings to the receiver will be reduced and consistent year-round discharge will augment base flow to the receiving stream.

As part of this Class EA, a public consultation process was provided which included the following milestones:

- Notice of Commencement
- Public Information Centre #1
- Public Information Centre #2
- Notice of Completion

Each of these events included advertisements/notifications in local newspapers and on the Township website. In addition, notification letters were sent to approval agencies, Indigenous Communities, and stakeholders.

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The preparation of this feasibility study was carried out with assistance from the Green Municipal Fund, a Fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.”

1.0 INTRODUCTION AND BACKGROUND

1.1 Class Environmental Assessment Planning Process

The Municipal Class Environmental Assessment (EA) planning process provides Municipalities with an approved framework to fulfil the requirements of the EA Act for municipal infrastructure projects including roads, sewage (sanitary and storm), potable water and transit. To ensure that a degree of standardization in the planning process is followed across the Province, the EA Act contemplates the use of Class EAs for municipal projects that are carried out routinely and have predictable environmental effects that can be mitigated. Projects that fall into these categories do not warrant an Individual Environmental Assessment (IEA).

In addition to providing Municipalities with an approved planning procedure, the Class EA serves as a public statement of the decision-making process under which municipal projects can be planned and implemented; however, it does not replace or exempt the requirements of other applicable permits and approvals that may be required from federal, provincial, and municipal levels of government. The Municipal Class EA process reflects the following five key principles for successful environmental assessment planning under the EA Act:

- Consultation with affected parties early on and throughout the process such that the planning process is a cooperative venture.
- Consideration of a reasonable range of alternatives, both the functionally different “alternatives to” and the “alternative methods” of implementing the solution.
- Identification and consideration of the effects of each alternative on all aspects of the environment.
- Systematic evaluation of alternatives in terms of their advantages and disadvantages to determine their net environmental effects.
- Provision of clear and complete documentation of the planning process followed, to allow “traceability” of decision-making with respect to the project.

The Municipal Class EA categorizes projects in terms of schedules according to their potential impact on the environment. The four Class EA project schedules are as follows:

- *Schedule "A"* – Exempt from the EA Act: Schedule A projects include activities that are limited in scale, have minimal adverse environmental effects, and generally include various municipal maintenance and operation activities. Projects planned under Schedule A are exempt from the EA Act and there is no appeal mechanism (i.e., Section 16 Order Request) to the Ministry of Environment, Conservation and Parks (MECP) on these projects.
- *Schedule "A+"* – Project Requires Public Notification but is Exempt from the EA Act: Activities planned under Schedule A+ require the Municipality to inform the public of what is to be undertaken in their local area prior to implementation; however, the method of advising the local community is to be determined by the Municipality. Schedule A+ projects include activities that are limited in scale, have minimal adverse effects on the natural environment and provincially important matters and generally include various rehabilitation works that may be of interest to the local community. Projects planned under Schedule A+ are exempt from the EA Act and there is no appeal mechanism (Section 16 Order Request) to the MECP on these projects.
- *Schedule "B"* - Projects Subject to Public Screening: Schedule B projects have the potential for some adverse environmental effects. The Municipality must complete Phases 1 and 2 of the Class EA planning process, which involves identifying the problem or opportunity and screening alternatives for their environmental effects and includes mandatory contact with

directly affected public and relevant review agencies to ensure that they are aware of the project and that their concerns are addressed. A project file must be prepared and filed for public and review agency comment and is subject to an appeal process. Activities under this Schedule generally include improvements and minor expansions to existing facilities. In accordance with the *Covid-19 Economic Recovery Act*, the appeal process (i.e., Section 16 Order Request) only applies if the objection deals with aboriginal or treaty rights. All other concerns are required to be addressed to the proponent and are subject to an additional 30-day MECF comment period, where MECF will decide if the proponent may proceed with the project as planned, with conditions, or a requirement to elevate the project schedule.

- *Schedule "C" - Project Subject to the Full Class EA Planning Process*: Activities under this Schedule have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the Class EA document, which are Phases 1 through 5. An Environmental Study Report (ESR) must be prepared and filed for public and review agency comment and is subject to an appeal process. Schedule C projects generally include the construction of new facilities and major expansions to existing facilities. Like Schedule B projects, Schedule C projects are subject to appeals (i.e., Section 16 Order Request) if the objection deals with aboriginal or treaty rights. All other concerns are required to be addressed to the proponent and are subject to an additional 30-day MECF comment period, where MECF will decide if the proponent may proceed with the project as planned, with conditions.

Figure 1 below outlines the five phases of the Class EA planning process. A description of each phase is provided below.

- *Phase 1*: The problem or opportunity statement that is to be addressed by the project is identified. Notification of the project undertaking to the public, review agencies and interested parties is optional in this Phase.
- *Phase 2*: Alternatives to address the problem/opportunity are identified and evaluated in the context of potential natural, social, and economic environmental impacts resulting in the selection of a preferred solution. Consultation with the public, review agencies and interested parties is mandatory in Phase 2 to solicit input and comment. Schedule B projects typically end following the completion of Phase 2, following the filing of a Project File which is first subject to a minimum 30-day public comment period and an additional 30-day comment period by the Minister.
- *Phase 3*: Alternative design concepts for the implementation of the preferred solution identified in Phase 2 are developed and evaluated, including additional mandatory consultation with the public, review agencies and interested parties.
- *Phase 4*: This is the culmination of the planning and design process for Schedule C projects in which all project activities, including the consultation process and results, are documented, and published in an Environmental Study Report that is first subject to a minimum 30-day public comment period and an additional 30-day comment period by the Minister.
- *Phase 5*: Implementation of the preferred alternative including applicable mitigation measures as identified through the Class EA process.

The Municipal Class EA is a self-assessment process, completed by the municipality, that places emphasis on project evaluation and public involvement rather than formal review and approvals. The Class EA document outlines the minimum requirements to conduct a Class EA; however, the municipality is responsible for determining the complexity of the project and tailoring the planning

process to meet the minimum requirements and reflect the project specific needs in terms of evaluation and consultation.

Given the magnitude of potential environmental effects typically associated with establishing new facilities or increasing capacity at existing facilities through major expansions, this project is considered a Schedule C undertaking, in accordance with the Class EA document. Therefore, project activities are subject to Phases 1 through 4 of the Class EA planning process, including the preparation, and filing of an Environmental Study Report. The project team for this Schedule C project includes the proponent and its consultant, with the proponent providing general direction throughout the planning process and its consultant responsible for completing the study on behalf of the proponent. Project team details are as follows:

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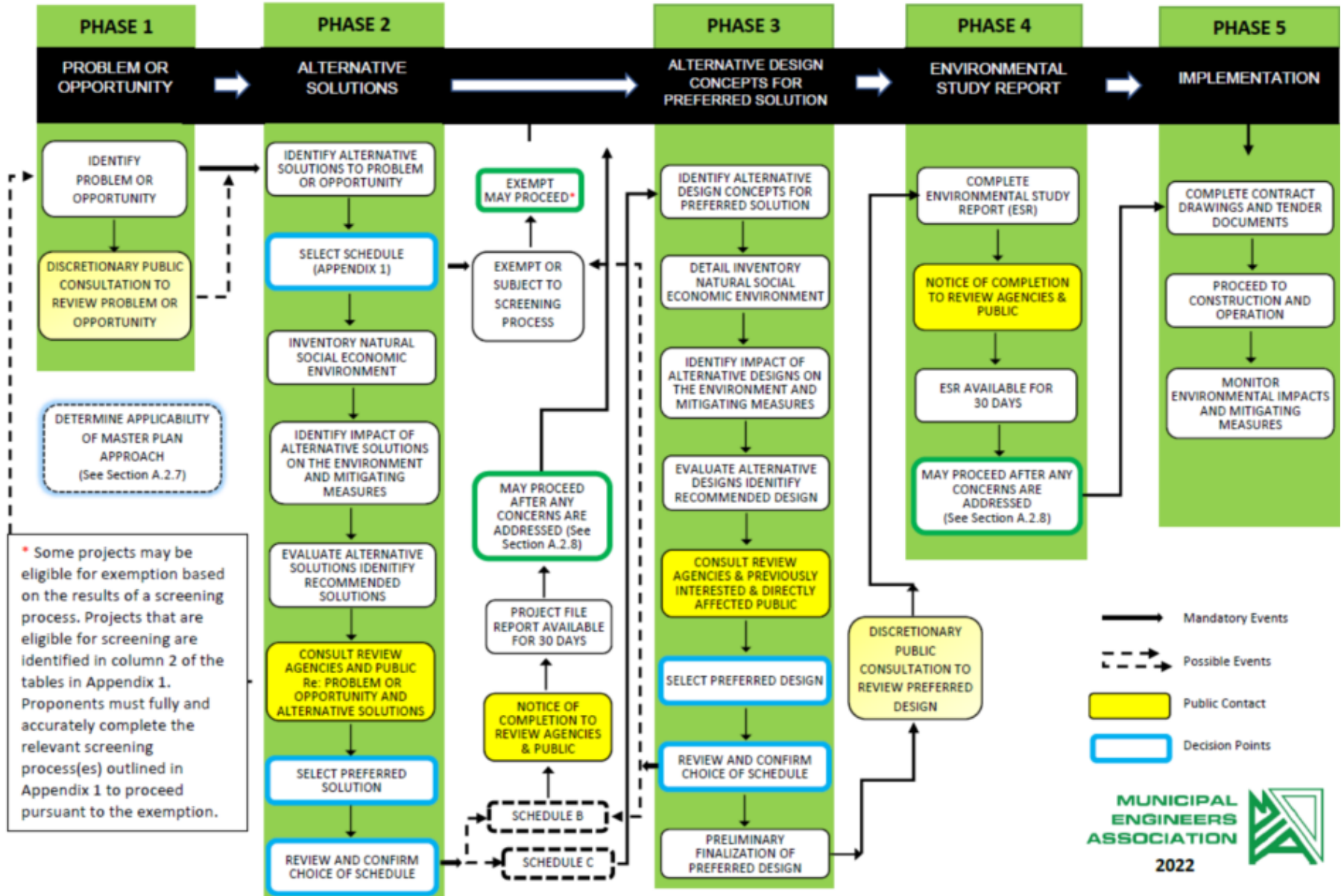
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Figure 1.1 – Municipal Engineers Association Class Environmental Assessment Planning Process



1.2 Environmental Study Report Purpose and Organization

The Environmental Study Report (ESR) is a requirement of Schedule C Class EA projects. The ESR is prepared following the selection and concept design of the preferred solution, and details of the environmental protection measures that have been finalized for inclusion in the final construction specifications. Further, the ESR provides a complete account of the planning procedures followed for the project, the history and purpose, approach and evaluates the existing environment and alternative solutions and designs that resolve the identified problem.

The ESR provides a detailed account of all planning procedures undertaken through Phases 1 through 4 of the Class EA process, including details of the project background and purpose, an explanation of the Class EA planning process in general and specific to the project, alternative solutions considered, detailed description of the existing environment and evaluation of the alternative solutions and effects on the environment, alternative designs considered for the preferred solution and the evaluation of alternative designs, details of the preferred design and the work to be undertaken, including mitigation measures and any monitoring programs, and details of the consultation program throughout the planning process.

Upon its completion, the ESR is filed on the public record to allow for comment from the public and all parties that expressed interest in being involved in the planning of the project for a period of at least thirty (30) calendar days. At the time of filing, a Notice of Completion is published to advise the public, including those who have expressed an interest in the project, where the Project File is available for comment and the manner in which public comment is to be received. The Notice of Completion advises the public of their rights with respect to the appeal process.

The *COVID-19 Economic Recovery Act* was passed by the Province on July 21, 2020, resulting in amendments to the Environmental Assessment Act, specifically regarding the Section 16 Order Request (appeal) process. For Municipal Class EAs, the Section 16 Order Request process now only applies for requests to elevate the project to an individual EA such that it “may prevent, mitigate or remedy adverse impacts on the existing aboriginal and treaty rights of the aboriginal peoples of Canada” (Bill 197, *COVID-19 Economic Recovery Act*, Schedule 6, s.25.). All other concerns must be addressed to the proponent during or prior to the thirty (30) days that the project is filed on public record following the Notice of Completion.

Following the end of the 30-day public comment period, the project file is reviewed for an additional 30-days by the MECP to determine whether the project requires conditions for approval or elevation (Section 16 Order Request process). If conditional approval is decided, the Minister will notify the proponent that additional review is required by the Minister to draft the conditions. If the Minister does not respond during the MECP 30-day review period, the project can proceed as per the Class EA recommendations.

1.3 Consultation

Consultation, which is a mutual exchange of information between interested persons (including government approval agencies, First Nation and Aboriginal communities and the public) and the proponent of a project, is an important element of responsible environmental decision making. These parties must be provided with opportunities to contribute to the decision-making process. Consultation protects the public interest and helps to ensure that concerns are identified early and addressed where possible.

As per the Code of Practice titled Consultation in Ontario’s Environmental Assessment Process (MECP, January 2014), the purpose of consultation, is as follows:

- to provide information to the public.
- to identify persons and communities who may be affected by or have an interest in the project.

- to ensure that government agencies and ministries are notified and consulted early in the environmental assessment process.
- to identify concerns that might arise from the undertaking.
- to create an opportunity to develop proponent commitments in response to local input.
- to focus on and address public concerns rather than regulatory procedures and administration.
- to provide appropriate information to the ministry to enable a fair and balanced decision.
- to expedite decision making.

Projects that are subject to the Class EA process or other streamlined planning process must satisfy the consultation requirements prescribed by the corresponding approved document (i.e., Municipal Engineers Association Class EA document); though, the Code of Practice can be used as an aid to enhance the minimum consultation requirements set out in the corresponding approved document. As per the MEA Class EA document, the minimum consultation requirements for Schedule C projects include an initial Notice identifying the alternative solutions and project classification and provides an opportunity to comment on the project (Phase 2); an opportunity to review the alternative designs and evaluation (Phase 3); and a Notice of Completion and an opportunity to review the ESR (Phase 4). Sections 3.2 and 4.5 of this ESR outlines and documents the consultation completed for this Class EA project.

Approval agency consultation began in the early stages of this project and the public has been invited to comment throughout Phases 1 and 2 of the Class EA. Public Information Centres (PIC) were held on November 17, 2022 (PIC#1), and March 15, 2023 (PIC#2), for Phases 1 and 2 respectively. PIC #1 consisted of a walk-through display with staff from Triton Engineering and Township Public Works answering the questions of those who attended the meetings. PIC#1 information was provided on the Township website for remote viewing. PIC#2 was a virtual PIC with information provided as a video presentation which was available through the Township website for remote viewing.

Notices of the Information centres were advertised in the Dundalk Herald newspaper and on the Township website in accordance with the Class EA guidelines. In addition, notices and information packages were sent to property owners within 150m of the treatment facility, First Nation and Aboriginal communities, and approval authorities. The newspaper advertisement and complete contact list for the Public Information Centres can be found in Appendix E, along with the registration list and comments received from the meetings.

2.0 PROJECT BACKGROUND

2.1 General

The Township of Southgate (Township) initiated a Schedule C Municipal Class Environmental Assessment (Class EA) in May 2016 to evaluate potential solutions to address the wastewater treatment capacity concerns at its wastewater treatment facility (WWTF) in Dundalk. Triton Engineering Services Limited (TESL) was retained by the Township to administer the Class EA on their behalf.

The community of Dundalk is serviced by a municipal sanitary sewage collection and treatment system. All residential, commercial, institutional, and industrial sewage is treated by a lagoon type wastewater treatment facility, consisting of four-cells that typically operate in series. The fourth cell then discharges into the fifth pond, which is an aeration cell. The effluent from the aeration cell is then discharged into a tertiary treatment building complete with chemical feed, flocculation tank, and sand filters. From the filter effluent travels through a post aeration channel to increase dissolved oxygen, prior to discharge into the Foley Drain, which is a tributary of the Grand River.

2.2 Project Purpose

The purpose of this Class EA undertaking is to provide the Township of Southgate with additional sewage treatment capacity for the community of Dundalk. Additional sewage treatment capacity is required for continued growth within the Municipality. Approval of new development beyond the existing rated capacity of the WWTF (1,832m³/day) cannot occur without an increase in sewage treatment capacity. The preferred alternative identified through this Class EA process must be cost effective and environmentally sound while at the same time permitting continued growth, within the Dundalk WWTF service area in accordance with the Provincial Policy Statement and safeguarding the water quality of the Grand River.

2.3 Identification of the Problem

2.3.1 Southgate Official Plan

Municipal servicing and infrastructure are required to support existing and future residential development within urban communities. As indicated in the Southgate OP, the vision of the Township of Southgate is:

“To be a vibrant progressive community that is a desirable place to live, work and invest. To achieve this objective, Southgate will support a mix of residential development to enhance its existing quality of life and rural charm. Southgate will also strive for diversity within the agricultural, commercial, industrial, recreation and tourism sectors to enhance growth opportunities.”

For the community of Dundalk to continue to grow responsibly, it is imperative that sufficient Municipal services are available. The availability of sewage treatment, as established by the WWTF rated capacity, is a crucial part of this need. The rated capacity of a municipal WWTF is specified in its associated Environmental Compliance Approval that is issued by the MECP. As per the MECP Design Guidelines for Sewage Works, the rated (design) capacity of a municipal sewage works is “the highest average annual flow during which the sewage treatment facility can consistently meet site specific effluent quality criteria” (MECP, <https://www.ontario.ca/document/design-guidelines-sewage-works-0>). The average annual flow is calculated as the total sewage flow to the sewage works in one (1) calendar year divided by the number of days in the same calendar year that sewage was flowing to the sewage works. To ensure that the rated capacity of the sewage works is not exceeded, the hydraulic reserve capacity (reserve capacity) of the sewage works is calculated, typically on an annual basis. The reserve capacity represents the available sewage treatment capacity within the sewage works and is used in monitoring the performance of the sewage works and for considerations related to municipal growth/development. The Southgate Official Plan intends to be kept up to date with the Provincial Policy Statement in order to protect provincial interests, and the policies of the Provincial Policy Statement continue to apply even after the adoption and approval of an official plan.

2.3.2 Planning & Policy

The Provincial Policy Statement provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario’s policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians.

The long-term prosperity and social well-being Ontario upon planning for strong, sustainable, and resilient communities for people of all ages, a clean and healthy environment, and a strong and competitive economy.

The fundamental principles set out in the Provincial Policy Statement apply throughout Ontario. To support our collective well-being, now and in the future, all land use must be well managed.

The Provincial Policy Statement provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The Provincial Policy Statement supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.

The Provincial Policy Statement is a key consideration for identifying land-use planning objectives and evaluating alternative solutions in Phases 2 and 3 of the Class EA process for water/wastewater projects.

The policies of the Provincial Policy Statement may be complemented by provincial plans or by locally generated policies regarding matters of municipal interest. Provincial Plans and municipal official plans provide a framework for comprehensive, integrated, place-based and long-term planning that supports and integrates the principals of strong communities, a clean and healthy environment, and economic growth, for the long term.

2.3.3 Reserve Capacity Calculation Reports

The existing Dundalk WWTF is currently operating at 60.3% of its average day rated capacity of 1,832m³/day. However, the Reserve Capacity Calculations (RCC) for the Dundalk WWTF indicate that the facility has committed a significant amount of the remaining reserve capacity to new development. Additionally, there are a number of known developments that cannot move forward until the WWTF capacity is increased.

It is important to note, that the reserve capacity of the WWTP varies from year to year depending on the flows processed through the facility. In years when there is significant rain or a large number of new homes are built, the reserve capacity will typically decrease as the flows through the plant increase. In years when there is less rain, the reserve capacity will typically increase. Rainfall impacts the volume of extraneous flows that enter the collection system through infiltration and inflow.

2.3.4 Dundalk WWTF Existing Conditions Review

The Dundalk WWTF has experienced several operational difficulties in achieving the necessary effluent quality and controlling effluent volume. Accordingly, the Township has been involved in a number of studies and pilot projects in partnership with the Grand River Conservation Authority (GRCA) and Bishop Water Technologies.

In 1992 and 1996, higher precipitation levels increased the amount of infiltration and inflow (I&I) to the sanitary collection system and the lagoons were filled to capacity prior to the start of the normal discharge period. The community requested and received permission from the director of MOE for early/emergency discharge from the treatment facility to the receiver. As a result of these I&I events, the community was advised that a plan to resolve the hydraulic overloading problem must be implemented. The Township has since completed an I&I study and the recommended remedial works to reduce the amount of I&I in the system have been implemented. Although these works have proven to be successful in reducing I&I significantly, it is recognized that this remedial work is an on-going process and will continue as part of the Township's road and servicing reconstruction process.

The GRCA special studies completed in 2018, 2019 and 2021 have been primarily completed to assess and review the WWTF performance, specifically at the tertiary sand filter. These involved the assessment and review of the existing sand filter and the backwash cycles. Refer to Appendix H.

The Bishop Water Technology pilot project was completed to assess the viability of proprietary treatment technology, aimed at removing ammonia during the winter freeze and spring thaws. The pilot project consisted of installing ten (10) BioCord™ Reactors (2m x 2m x 2m) in the lagoons which began in August of 2016. The pilot aimed to determine the removal efficiency of the reactors within the lagoons. The pilot was decommissioned in September 2019.

Despite improvements to the existing collection and treatment systems, it was recognized that the current capacity of the WWTF would not be sufficient to service the future needs of the Dundalk urban area. As such, alternatives to expand the treatment capacity of the system need to be investigated.

2.3.5 Population and Flow Projections

a) Existing Population

There are currently 1,487 occupied units within Dundalk, 1,290 of which connect to the wastewater system. Based on this, at an existing unit occupancy of **2.66** people per unit (2021 census), the existing serviced population is 3,431.

b) Expected Population Growth

The 2022 Development Charges Background Study (Watson & Associates Ltd., 2022) (DC Study) projected the expected growth, including residential units and industrial/commercial/institutional (ICI) developments within Dundalk, to the end of 2032, 2042, and 2046. The DC Study used an ultimate net developable area for ICI lands of 72 ha. Further, it indicated that future residential units use varying occupancy rates based on dwelling type, with an average occupancy of **2.61** people/unit as shown below.

Table 1 - Unit Density

Density Type	Density Persons per Unit (ppu)
Average Future P.P.U.	2.61
Singles and Semis ¹	2.94
Multiples ¹	1.84
Apartments ¹	1.68

¹ As reported in the 2022 Development Charges Background Study.

Growth by 2046 is expected to result in an equivalent population increase of 11,040 resulting in a total sanitary serviced equivalent population of 14,865, as shown in the following tables. This growth forecast assumes that the existing Dundalk urban area is built-out and some additional areas currently being contemplated, including those put forth in a Ministers Zoning Order (MZO) request by Flato Developments.

Table 2 – Adjusted Expected Growth (DC Study)

End of Year	New Residential Population	Existing Unit Population Change ²	Equivalent ICI Population Increase ³	Total Equivalent Population ³
2022			0	3,825 ¹
2032	4,395	-161	663	8,722
2042	2,792	-177	1,244	12,581
2046	841	-89	1,532	14,865

¹ Existing population is based on 1,438 sanitary service connections and a unit density of 2.66.

² Population density declines for existing units due to aging population and family life cycle changes, lower fertility rates and changing economic conditions.

³ Equivalent ICI population is calculated by dividing Projected ICI Average Day Water Demand (ADD) (m³/day) by Existing/Future Average Day Water Demand per Person (m³/day/person). ICI ADD is a function of ICI GFA.

c) Flow Projections

The rated average day flow capacity of the existing Dundalk WWTF is 1,832 m³/day. The proposed Phase 1 and Phase 2 average day flow (ADF) capacities being sought for approval by the Ministry are 3,025 and 4,200m³/day. These WWTF rated capacities will allow for servicing of an "equivalent" population and residential housing units as summarized in the following tables. These forecasts are based on the existing per capita sewage flow rate of 0.294 L/day and future per capita sewage flow rate of 0.300 L/day as reflected in the 2023 RCC. Note that these rates are within the MOE design guideline range of 225 to 450 L/day/person.

Table 3 - Existing Per Person Flow Rate

Population	Three Year ADF (m ³ /day)	Flow Per Person (m ³ /day)
3,955	1,124	0.294

Table 4 - Sewage Flow, Population and Serviced Household Comparison

Description	Existing	Phase 1	Phase 2
Rated ADF Capacity (m ³ /day)	1,832	3,025	4,200
Equivalent Population Served (Capita)	6,185	10,162	14,078

The revised operating capacity will service an equivalent population of 14,078 which exceeds the predicted 2042 population forecast. As a result, the capacity of the modified facility will exceed the 20-year planning horizon.

3.0 CLASS EA PHASE 1: PROBLEM OR OPPORTUNITY

3.1 Problem Statement

Reserve capacity calculations (RCC) for the Dundalk WWTF indicate that the existing capacity is not adequate to accommodate future growth and development in the community. As a result, the Township has undertaken this Schedule C Class EA to examine viable alternatives to increase sewage treatment capacity for the community. The following problem statement has been developed for the project:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social, and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

It is based on this problem definition that the planning for this Class EA has been undertaken.

3.2 Phase 1 Public Consultation

Public and Approval agency consultation began in the early stages of this project with the Notice of Commencement being first issued in May 2016. The purpose of this initial public consultation was to introduce the public to the project, determine their concerns with the project and receive comments in order to refine the project's problem statement. Refer to Appendix E.1.

4.0 CLASS EA PHASE 2: ALTERNATIVE SOLUTIONS TO THE PROBLEM

4.1 Existing Environmental Conditions and Features

As part of Phase 2 of the Class EA process, a general inventory of the existing conditions of the Study Area was completed to support the evaluation of alternatives and selection of the preferred alternative. Data was collected from previous studies to document the existing conditions of the economic, social, cultural, natural, and technical environments. Details of the existing conditions are summarized in the following sections.

4.1.1 General Description of the Study Area

The Dundalk WWTF consists of four wastewater lagoons followed by an aeration cell and filtration. The WWTF discharges to the Foley Drain and ultimately to the Grand River. It is located at 752051 Ida Street (site), which is located on the south side of the community of Dundalk. The community of Dundalk is located in Grey County near the boundary with Dufferin County and shares municipal boundaries with the Townships of Proton and Melancthon. The community is also located in the upper reaches of the Grand River watershed approximately 95km northwest of Toronto. The study area is defined as the Dundalk WWTF site and the community of Dundalk that is serviced by the Dundalk WWTF. The site location and delineation of the study area is presented in Figure 1.2.

Figure 1.2 – Site Location



4.1.2 Natural Environment/Natural Heritage Features

a) Fisheries and Aquatic Resources

The study area includes the Grand River and its tributaries, which offer world class recreational fishing, and are home to over half of the fish species found in Canada. Warmwater-coolwater fish communities represent the reaches.

b) Vegetation and Flora

The shorelines of the Foley Drain show extensive woody and herbaceous vegetation that has resulted in stable shorelines, providing benefits to wildlife in the area. The 2017 study completed by Aboud and Associates (2017 Study), found in Appendix D, did not identify any provincially rare plants within the study area.

c) Wildlife Resources and Linkages

The 2017 Study concluded that the majority of the species breeding within the study area are not threatened or at risk. Of the species observed, there was found to be four at risk bird species (Barn Swallow, Bobolink, Eastern Meadowlark, Eastern Wood Pewee) and one at risk turtle species (Snapping Turtle). Other at-risk species that may be in the area include the Golden-Winged Warbler, Henslow's Sparrow, Milksnake, Northern Long Eared Bat, and the Eastern Small Footed Bat. No mitigation strategies are required to protect these species as the project is not anticipated to impact them.

d) Groundwater

The hydrogeological environment is defined as the water resource below the ground surface. The criteria used to assess the impacts on the local groundwater regime include groundwater quantity and quality. Consideration must be given to the impacts of the surface water quality and quantity on the groundwater regime. The preferred solution identified by this study should minimize the potential negative impacts on the hydrogeological environment.

4.1.3 Social Environment

The closest community to the study area is the Community of Dundalk (Dundalk), with the developed community approximately 1km to the north. There are several residential areas that exist within Dundalk including the established core residential area and White Rose Park, Edgewood Greens, and Carriage House (Glenelg) subdivisions. Highpoint Campground is also located within Dundalk. In addition, there are recreational facilities such as the Dundalk Arena and Community Centre, the Dundalk Lawn Bowling Club, and numerous playgrounds/ park areas.

4.1.4 Economic Environment

a) Industrial & Commercial Land Use

The lands northwest of the WWTF are used primarily for industrial purposes. This includes industries such as Lystek International and Gro-Bark Organics on Eco Parkway. The property along Eco Parkway will be developed further into the Dundalk Industrial Park.

b) Agricultural Land Use

The land east of the study area is row crop agricultural lands. The lands located to the south are classified as perennial cover crop agriculture land. The lands west of the study area are Mixed Communities, meaning that they were formerly agricultural lands and have reverted to early successional meadows.

4.1.5 Archaeological Resources and Cultural Heritage

a) Archaeological

Archaeology is the study of past human cultures through the investigation of archaeological sites. In Ontario, these sites could be Indigenous hunting camps and villages, battlefields, pioneer homes, burial grounds and cemeteries, shipwrecks, or other evidence of past human activity. An archaeological assessment was completed to ensure the protection of these archaeological resources, minimize disruption to First Nations areas of traditional use, sacred, and of cultural & natural significance. Southgate is committed to maintaining and preserving its natural heritage elements.

The Dundalk wastewater treatment facility site does not include known or potential archaeological resources.

Based on the archaeological assessment, as established through the “Criteria for Evaluating Archaeological Potential Checklist” (form 021-0478E), the proposed project will not have negative impacts to archaeological resources as there is not expected to be excavation of lands that were not previously excavated as part of the original WWTF construction. Refer to Appendix I.

b) First Nations/Indigenous Peoples

The Dundalk WWTF is located on the territory of the Mississauga’s of the Credit First Nation, Odawa, Anishinabeki, and Petun First Nations. It resides within the Haldimand Tract Treaty lands, home to the Six Nations of the Grand River, Haudenosaunee Confederacy, Metis Nation, and Saugeen Ojibway Nation.

Questions, comments, and concerns from these communities were solicited, however, none were received.

4.1.6 Assimilative Capacity Study & Effluent Criteria

In 2017 an Assimilative Capacity Study was initiated that focused on the current and future effluent characteristics of the discharge entering the James Foley Drain, a tributary of the Grand River. Effluent criteria were established as part of this study to ensure that potential environmental impacts are mitigated.

TESL, in collaboration with Huber Environmental Consulting, completed the Assimilative Capacity Study (ACS) in April of 2021 for the Foley Drain. The ACS was provided to the MOE for review. It was determined that the high-quality effluent discharged from the existing WWTF improves aquatic conditions downstream in the Foley Drain, therefore, the additional flow resulting from the proposed increased capacity has potential to benefit all aquatic life living in the reaches of the Foley Drain downstream from the WWTF.

The existing conditions of the Foley Drain are consistent with the MOE Policy 2 approach, indicating that there should be no negative effect of the effluent on water quality. It is also consistent with Policy 5 as the reach where the Foley Drain meets the Grand River is a mixing zone.

Effluent objectives and limits were provided for a 15-year and 20-year planning horizons, with rated capacities of 3,025 m³/day and 4,200 m³/day respectively. These recommendations were made to ensure that the effluent quality is within Provincial Water Quality Objective (PWQO) limits, and that the existing water quality of the Foley Drain and Grand River is maintained. Further to this, through collaboration with the Ministry of Environment Surface Water Specialist, the following effluent criteria has been established.

It is anticipated that loading and assimilative analysis discussion for Phase 2 considerations will be required. Maintaining loadings, as shown below, can be considered as an alternative to an ACS Study, however that determination will need to be made at such time that the Phase 2 increase in capacity is required.

Table 5 - Effluent Parameters for 15-year Planning Horizon (rated capacity of 3,025 m³/day)

Parameter	Effluent Limit (mg/L)	Daily Loading (kg/d)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	10.00	30.25
Total Suspended Solids (TSS)	10.00	30.25
Total Phosphorus (TP)	0.50	1.51
Total Ammonia (NH ₃ & NH ₄ ⁺)		
Temperature > 5°C	3.0	9.07
Temperature < 5°C	4.0	12.10
Dissolved Oxygen (DO)	> 4	N.A.
pH	6.0 - 9.0	
E. coli (#/100mL)	100	

Table 6 - Effluent Parameters for 20-year Planning Horizon (rated capacity of 4,200 m³/day)

Parameter	Effluent Limit (mg/L)	Daily Loading (kg/d)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	7.2	30.25
Total Suspended Solids (TSS)	7.2	30.25
Total Phosphorus (TP)	0.36	1.51
Total Ammonia (NH ₃ & NH ₄ ⁺)		
Temperature > 5°C	2.16	9.07
Temperature < 5°C	2.88	12.10
Dissolved Oxygen (DO)	> 4	N.A.
pH	6.0 - 9.0	
E. coli (#/100mL)	100	

4.1.7 Wastewater System (Existing)

The existing Dundalk WWTF is a facultative lagoon system and consists of the following treatment components:

- Influent flume to measure raw sewage flows.
- Raw sewage pumping station
- Alum addition at the raw sewage pumping station
- Stand-by power at the raw sewage pumping station.
- 4 facultative lagoons that are operated in series.
- 1 post lagoon aeration cell
- Post aeration cell pumping station
- Tertiary filter with the addition of alum and polymer for phosphorus removal
- Re-aeration of effluent following filtration
- V-notch weir to measure effluent flow.

The average day flow rating for the facility is **1,832 m³/day** with effluent criteria as follows:

Table 7 - Existing Effluent Criteria

Effluent Parameter	Concentration Objective (mg/L)	Effluent Limits	
		Monthly Average Concentration (mg/L)	Monthly Average Loading (kg/d)
CBOD ₅	5.0	10.0	18.32
Total Suspended Solids	5.0	10.0	18.32
Total Phosphorus <i>Temperature > 5°C</i>	0.3	0.4	0.73
Total Phosphorus <i>Temperature ≤ 5°C</i>	0.6	0.8	1.47
Dissolved Oxygen	5.0	4.0	NA
Un-Ionized Ammonia	0.05	0.1 (Single sample result)	NA

NA = not applicable

Table 8 - Dundalk Lagoon Historical Influent Flows

Year	2018	2019	2020	2021	2022
Average Daily Flow (m ³ /day)	1,105	1,114	1,161	1,220	990
Annual Influent (m ³)	401,279	405,664	425,922	446,719	360,770
Influent Maximum Daily (m ³ /day)	9,022	3,989	4,510	6,740	3,247
Peak Factor	8.2	3.6	3.9	5.5	3.3
Facility Utilization (%)	60%	61%	63%	67%	54%
Influent Increase (%)		1.1%	5.0%	4.9%	-19.2%
Serviced Sanitary Population (person)	1,513	1,877	2,239	2,891	3,825
Existing Per Person ADF (m ³ /day)	0.730	0.593	0.519	0.422	0.259

4.2 Alternative Solutions to the Problem

4.2.1 Evaluation Criteria for Alternative Solutions

The alternatives to be considered were evaluated using the following criteria.

a) Technical Environment

The technical environment is defined as the operation and maintenance requirement, the ability to adequately treat sewage to service the design growth, the expected implications to the existing facility, adjacent site and receiver, and whether the solution has a proven and reliable treatment capability or useability. The preferred solution identified through the Class EA process should attempt to maximize the technical environment.

b) Social & Cultural Environment:

The social environment includes existing communities, residential areas and recreational areas. The criteria used to assess the impacts on the social and residential environment include the effects on local neighbourhoods within the Community of Dundalk and the Township of Southgate. Factors that must be considered in this evaluation include land use, community character, recreation, employment opportunities, intensification of development and growth. The preferred solution identified through the Class EA process should enhance the "quality of life" within the Dundalk WWTF service area.

The community of Dundalk is a service centre for a large agricultural community and has become a retirement community for local farmers. Industries and residential developments have continued to expand. The community of Dundalk's Official Plan indicates that growth "will continue to rise with the possibility of increases or decreases based on significant events such as increased employment opportunities or increased service levels. The rate of growth is therefore somewhat dependent on the availability of services, particularly water and sewage".

The social and residential environment is defined as the structure and organization of the community. The criteria used to assess the impacts on the social and residential environment include the effects on residents in the surrounding Townships of Proton and Melancthon. Factors that must be considered in this evaluation include land use, recreation, employment opportunities, intensification of development, and growth. The preferred solution identified through the Class EA process should enhance the quality of life within Dundalk.

The cultural environment refers to cultural heritage and archaeological resources in the environment. Archaeological resources include artifacts and archaeological sites. Cultural heritage resources include built heritage and cultural heritage landscapes. Built heritage resources refers to significant buildings, structures, monuments or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. Cultural heritage landscape means a defined geographical area of heritage significance which has been modified by human activities and is valued by the community. These cultural resources are identified and/or designated under the Ontario Heritage Act. Factors that must be considered under this category include the potential loss, removal and disruption of the cultural environment. The preferred solution identified through the Class EA process should avoid cultural heritage and archaeological resources where possible. Where they cannot be avoided, then effects should be minimized and/or be mitigated where possible.

c) Economic Environment:

Financial considerations are defined as the direct costs to individual property owners and/or the Township. The criteria used to evaluate financial impacts include capital investment and operating/maintenance expenses. Factors that must be considered include the purchasing of land, construction and operating costs, financial capacity of the Township of Southgate and the recuperation of costs through Development Charges since any preferred solution in this Class EA requiring capital expenditure will have a growth-related component.

d) *Natural Environment:*

The natural environment consists of aquatic, geologic and terrestrial features that are native to the area and are not directly related to human structures or developments. The criteria used to evaluate the effects of all alternatives on the natural environment include the impacts on surface water, terrestrial systems and resources, soil, aquatic biological systems and the atmosphere. Factors that must be considered under this evaluation category include the potential loss, removal, impairment and/or disruption of the natural environment. The preferred solution identified through the Class EA process should minimize all detrimental impacts to the natural environment and should attempt to improve existing conditions. All activities involving the management of excess soil, materials, and waste generated during construction must be completed and disposed of in accordance with the ministry's current requirements. Excess soil will not be exported from the site given the limited works proposed and additional berming/landscaping expected.

4.3 Evaluation of Alternative Solutions

In accordance with the Municipal Class EA Document, the possible alternatives considered as part of this Class EA include "do nothing" and alternatives which may satisfy the Problem Statement, primarily to increase sewage treatment capacity of the Dundalk system to meet future growth requirements, are as follows:

- Alternative 1: Do Nothing
- Alternative 2: Reduce Infiltration and Inflow into Sanitary Sewer Collection System
- Alternative 3: Implement Water Conservation Measures
- Alternative 4: Expand and Optimize the Existing Treatment Facility
- Alternative 5: Construct Mechanical Facility
- Alternative 6: Combination of Alternatives 2, 3 and 4

4.3.1 Alternative 1: Do Nothing

This alternative does not address the lack of treatment capacity, which is required to permit continued growth. The Do Nothing alternative may be implemented by the Municipality at any time. Such a decision is typically made when the costs of all alternatives including financial and environmental considerations outweigh the possible benefits.

4.3.2 Alternative 2: Reduce Inflow & Infiltration

Reducing infiltration and inflow (I&I) into the sanitary sewer collection system would involve stringent testing on new infrastructure being constructed, an increase in storm services to reduce the amount of stormwater entering the sanitary system, and monitoring of existing infrastructure for infiltration with follow-up remedial works as warranted.

Evaluation highlights of this alternative are as follows:

- Does not fully address the Problem Statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing I&I may allow for some continued development through reduced sewage flows per capita, this alternative will inevitably result in a moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, and possible bypass events due to excessive peak flows, both resulting in increased risk to the Natural Environment.

4.3.3 Alternative 3: Implement Water Conservation Measures

Implementing water conservation measures includes public education, distribution/installation of water saving devices and identifying/repairing system leakage. Reducing water use will reduce the amount of inflow into the sanitary sewer collection/treatment system.

Evaluation highlights of this alternative are as follows:

- Does not address the problem statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing water usage will reduce sewage flows somewhat, which may allow for some continued development, this alternative will inevitably result in a moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.

4.3.4 Alternative 4: Expand and Optimize the Existing Treatment Facility

Expanding and optimizing the existing WWTF would involve implementing industry accepted technology and processes to meet or exceed the expected treatment effluent criteria at the required design flow rates.

Evaluation highlights of this alternative are as follows;

- Addresses the primary goal of problem statement. However, does not deal with I&I issues or reduce water usage.
- Existing operational constraints at the Facility are addressed, while maintaining existing operator intervention levels resulting in a highly positive outcome for the Technical Environment.
- Minimal changes to the Social and Cultural Environment.
- Will allow continued development for the current planned growth, however at an estimated cost between \$4M and \$6M results in a net positive outcome for the Economic Environment.
- Effluent quality will improve resulting in a positive outcome for the Natural Environment.

4.3.5 Alternative 5: Construct Mechanical Plant

This alternative would involve decommissioning of the current WWTF and construction of a mechanical wastewater treatment plant to meet or exceed expected treatment effluent criteria at the indicated required flow rates.

Evaluation highlights of this alternative are as follows;

- Addresses the problem statement from treatment capacity perspective. However, it is not the most cost effective alternative, nor does it deal with I&I issues or reduce water usage.
- Existing constraints at the Facility are addressed, however a new plant will require increased operator intervention and extensive training, net result is a marginally positive outcome for the Technical Environment.
- Decommissioning of existing Facility along with construction of the new plant will have temporary negative impacts, new plant will have additional truck traffic to deal with sludge production, net result is a negative outcome for the Social and Cultural Environment and Natural Environment.
- Will allow continued Development for the foreseeable future, however at an estimated cost between \$10M and \$15M this alternative results in a net negative outcome for the Economic Environment.

4.3.6 Alternative 6: Combination of Alternatives 2, 3 and 4

A combination of these alternatives has the potential to fully address the problem statement in the most cost-effective way with minimal negative impacts.

4.4 Shortlisted Alternative Solutions

The shortlist evaluation of the six alternatives listed above is based on the ability of the alternative solution to address the issues identified in the Problem Statement and is summarized in Table 9, as follows:

Table 9 - Summary of Alternatives Evaluation Versus Problem Statement

Problem Statement Components				
Alternative Solutions	Increase Capacity to Meet Requirements of Future Growth	Address Current Operational Issues	Negative Environmental Impacts	Problem Statement Addressed?
Alternative 1: Do Nothing	No	No	Yes	No
Alternative 2: Reduce Infiltration and Inflow into Sanitary Sewer Collection System	Negligibly	No	No	Minimally
Alternative 3: Implement Water Conservation Measures	Negligibly	No	No	Minimally
Alternative 4: Expand and Optimize the Existing Treatment Facility	Yes	Yes	No	Mostly
Alternative 5: Construct Mechanical Facility	Yes	Yes	Temporarily	Mostly
Alternative 6: Combination of Alternatives 2, 3 & 4	Yes	Yes	Yes	Yes

Based on the evaluation of the alternatives, Alternative 6 is the preferred solution, which is a combination of Alternatives 2, 3 and 4. Alternative 6 will reduce inflow/infiltration to the collection system, implement water conservation measures thereby reducing sewage flows and provide improvements/upgrades to the existing Facility to increase capacity and treatment consistency.

4.5 Phase 2 Public Consultation

As part of Phase 2 of the Class EA process, the first Public Information Centre (PIC#1) was held on November 17, 2022. The Notice for PIC#1 was issued by mail on November 2, 2023, and published in the Dundalk Herald on November 2 and November 9, 2023. A copy of the advertisement can be found in Appendix E. Individual notifications were mailed to approval agencies and interest groups listed in Appendix E. Notifications were also delivered to residents and nearby landowners. Two people formally registered at PIC#1 were not from the general public and did not provide comments. Appendix E includes the registration list.

The information centre included an explanation of the Class EA process, definition of the problem, location plan showing surrounding land use and site plans and aerial photographs showing the existing WWTF, and outlined and evaluated the Alternative Solutions to the problem. This public

consultation was conducted using an open house format with questions and comments encouraged. The presentation was also made available on the Township's website. A copy of the presentation is included in Appendix E.

5.0 CLASS EA PHASE 3: ALTERNATIVE DESIGN CONCEPTS

5.1 Design Concepts

5.1.1 Reduce Infiltration and Inflow

According to the Infiltration and Inflow (I&I) study completed in 2020, there is potentially 545 m³/day of I&I in the system that can be removed. This is equivalent to 556 ERUs of additional capacity. To achieve a reduction in I&I the following measures should be implemented.

- Existing foundation drains and sump pump connections must be inspected to ensure they are not connected to the sanitary sewer. This can be completed as part of road reconstruction projects through CCTV sewer inspections. If significant I&I is noted in specific sewers in dependent of road reconstruction projects, a CCTV inspection should be completed, source identified and addressed.
- Drainage features (i.e., concrete barrier curb and gutter, catch basins) within the roads must be properly maintained (i.e., snow, trash, leaves removed) to ensure that roads do not flood, causing flood water to enter sanitary MH's.
- All sewer and maintenance holes with identified deficiencies should be repaired.
- Stringent testing on new sewer infrastructure being constructed, install storm services to new houses.
- Continue to evaluate I&I volume as part of the RCC each year.

Any reduction in flow to the WWTF resulting from the implementation of this alternative will maximize the sewage treatment reserve capacity available to new development.

5.1.2 Implement Water Conservation Measures

Typically water conservative initiatives are aimed at reducing water usage to preserve water resources. However, the side effect of this is that sewage flows are also reduced. Water usage can be reduced through the following measures.

- Public education.
- Distribution/installation of water saving devices.
- Identifying/repairing water system leakage that contribute to sanitary flows.
- Discussions with industry regarding ways to reduce their sanitary loading.

Any reduction in flow to the WWTF resulting from the implementation of this alternative will maximize the sewage treatment reserve capacity available to new development.

5.1.3 Expand and Optimize the Existing Treatment Facility

Upgrading the existing WWTF would involve implementing industry accepted technology and processes within the existing treatment system. This would allow the system to meet or exceed the expected treatment effluent criteria at the indicated design flow rates. To determine how the existing facility could be improved, optimized, and expanded, the Township released a Request for Proposal (RFP) to the wastewater treatment industry on September 20, 2021, including one addendum issued October 6, 2021, eight (8) proposals from various technology suppliers were received. After reviewing the proposals, four (4) suppliers were shortlisted based on the proposal's completeness and their systems' ability to achieve effluent criteria as a stand-alone system. Additional information was requested from the shortlisted suppliers, this information was provided at the end of January 2022.

Although any of the shortlisted technologies could achieve the effluent criteria, based on the information provided by the various suppliers, some technologies/suppliers would appear to be better suited to the Dundalk WWTF expansion application. The preferred technology needed to be adaptable, and the supplier must be knowledgeable of lagoon treatment processes, not just in their specific system, but how it interacts and can be integrated with the other parts of the existing treatment train, especially lagoon systems. From this critical standpoint, the proposal received from ACG Envirocan that included the technology and expertise of Triplepoint Environmental and Aqua-aerobics Systems and a subsequent meeting with their design team, has demonstrated a clear understanding of what the needs/issues of the overall treatment system are and how these can be effectively addressed by their proposal treatment system.

Other considerations as outlined within the RFP Review Letter (Appendix G) (i.e., costs, experience, O&M, schedule) were compared for the various technologies. Although there are many unknowns/variables that may affect these as the design progresses, the evaluation was based on the information provided. Triplepoint's treatment system including the Ares 750T Aerator and NitrOx MBBR along with Aqua-aerobics' AquaDisk Filter system has various existing installations, the lowest capital costs with minimal O&M requirements, and the potential to expand using existing infrastructure.

Upon review of the shortlisted proposals and additional information it was determined that Triplepoint has the necessary abilities/experience and technologies to satisfy the sewage treatment requirements as outlined in the RFP in an efficient and cost-effective manner.

5.1.4 Project Description (Design Concepts)

The Triplepoint Ares 750T Aerator, Nitrox & AquaDisk technology concept will be integrated into the existing WWTF infrastructure. This solution supplements the existing aeration equipment within the post aeration cell with the Ares 750T Aerator system. Following this aeration cell and prior to filtration, the NitrOX MBBR will be installed to add additional treatment and remove ammonia from the wastewater. The existing sand filtration system will be replaced with an AquaDisk Media Filter.

a) Flow and Population Projections:

The revised operating capacity of 3,025m³/day for Phase 1 will service an equivalent population of 9,768 exceeding the predicted 2032 population forecast of 8,328. As a result, the capacity of the modified facility will exceed the 10-year planning horizon.

b) WWTF Process Modifications:

The existing Dundalk WWTF will be modified to meet discharge criteria for increased flows which are expected with the projected population increases within the community of Dundalk . The capacity of the facility will be increased in two phases and will include the following modifications:

- Phase 1:
 - i. Replacement of pumps at raw sewage pumping station.
 - ii. The addition of Ares 750T Aerator to the post aeration cell (Cell #5).
 - iii. Chemical injection to control algae at Cell #5.
 - iv. Addition of the NitrOx Moving Bed Biofilm Reactor (MBBR).
 - v. Replacement of tertiary static media filter with AquaDisk cloth media disk filter to achieve suspended solids and phosphorus limits.
- Phase 2:
 - i. Addition of a second NitrOx MBBR Reactor to further polish ammonia.
 - ii. Replacement of existing Parshall Flume to accommodate increased influent.
 - iii. Replacement of forcemain from raw sewage pumping station to Cell #1.

c) Schedule:

A detailed submission will be prepared and sent to the MECP for the ECA by October 2023. Contract documents will then be prepared in the Fall of 2023. The process of project tendering will occur from

December 2023 to January 2024. Construction of the technology will occur through Spring and Fall of 2024.

d) Estimated Capital Cost

The capital cost estimate to implement Phase 1 (3,025m³/day) of the WWTF expansion is estimated to be between \$4 and 6 million depending on the final design requirements.

5.2 Phase 3 Public Consultation

A virtual Public Information Centre (PIC#2) was available for viewing March 15th to March 24th, 2023, to obtain input from the public regarding the recommended preferred solution presented in Section 4.4 of this report and proposed design concept.

The information centre included an explanation of the Class EA process, definition of the problem, background information, explanation, and assessment of the preferred alternative, and presented the recommended treatment process.

The PIC was advertised in the Dundalk Herald newspaper on March 1st and 8th, 2023. In addition, letters were sent to review agencies and residents that had expressed previous interest in the project. Copies of the newspaper advertisement, contact letter and PIC#2 registration are included in Appendix E of this report. There were no concerns raised or comment submitted.

5.3 Design Concept Environmental Impacts, Mitigating Measures and Monitoring

Alternatives 2 and 3 are Schedule A or A+ activities under the Class EA and do not require further investigation in this report. However, it is anticipated that these alternatives will have positive impacts on the environment when implemented. With regard to Alternative 4, there will be a net positive impact on the aquatic environment as the total loadings to the Foley Drain are reduced through lowering the discharge concentrations. Since the proposed construction is within the existing footprint and lagoon configuration will be retained there should be no additional impact on the surrounding landowners or natural environment with regard to noise or odour.

During construction activities, concerns regarding siltation and sediment control are often raised. The Dundalk WWTF site is not prone to siltation problems since the slopes are low. However, preventative measures will be taken through the installation of straw bale check dams and silt fencing next to the unclassified wetland on the southeast corner of the property and the drainage ditch to the east. Construction noise and dust may also disturb nearby residents. These concerns can be mitigated by limiting the working hours of the contractor and using non-chloride dust suppressants respectively.

Operation of the Dundalk WWTF will continue during construction. The contractor will be required to coordinate all activities with the operating authority to ensure Certificate of Approval discharge requirements are met at all times.

To ensure that the expanded Dundalk WWTF meets the revised discharge criteria, the MECP will include monitoring requirements in the revised Certificate of Approval. This typically includes monthly or weekly monitoring of the influent and effluent, reporting to the MECP when effluent criteria are exceeded and submission of an annual report to the MECP. Effluent monitoring requirements will be finalized upon issuance of a revised Certificate of Approval by the MECP.

5.3.1 Species At Risk

As discussed earlier, the study area includes the Grand River and its tributaries, which offer world class recreational fishing, and are home to over half of the fish species found in Canada. Warmwater-coolwater fish communities represent the reaches.

The 2017 study completed by Aboud and Associates did not identify any provincially rare plants within the study area and concluded that the majority of the wildlife species breeding within the study area are not threatened or at risk. Therefore no mitigation strategies are required to protect any at-risk species as the project is not anticipated to impact them. This study remains valid as significant changes to the environment, land-use and any habitat is not expected to have been changed since 2017.

The work required to implement the alternative will be completed such that Species at Risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed. However, if it is found through on-going construction monitoring and assessment that the proposed activities cannot avoid impacting protected species and their habitats, then an application for authorization under the Endangered Species Act (ESA) will be made.

5.3.2 Air Quality & Odour

The proposed additional processes do not typically emit odours or negatively affect air quality. Further to this, the increase in flows through the existing lagoon system is not expected to change existing odours or air quality. Given that the Township has not received complaints regarding odours or air quality in the past, complaints with the increased capacity are not expected. The developments/receivers in proximity to the WWTF are either industrial or agricultural, therefore, risk of nuisance is low.

Given the above, mitigation measures are not proposed at this time. However, a monitoring program in the form of notification of Township staff regarding the reporting of complaints to operators will be provided.

5.3.3 Climate Change Considerations

The preferred alternative is mitigating climate change as much as feasible as it is going to retain existing facultative lagoons which are passive with minimal energy usage. Further to this, the lagoons surplus storage capacity allows for buffering and containment of severe events which may occur as a result of climate change.

5.3.4 Noise & Vibration

There will be additional noise due to the construction at the site, however, it will be temporary with negligible impact to adjacent receivers given that construction activities will be restricted business hours and receivers are primarily industrial and agricultural. Construction noise is expected to be moderate consisting of truck and heavy equipment movements intermittently during typical working hours over 3-6 months. This noise is not expected to be more than that currently generated by typical industrial activity in the area. Similarly, vibration during construction will be limited to heavy equipment movements and short durations compaction equipment use, both of which will not impact beyond the site.

Regarding long term impacts, the proposed filter is in an enclosed structure and the proposed process isn't expected to generate any more noise or vibration than existing process aeration system which did not receive any complaints regarding noise or vibration. Aeration replacement is assumed to be a similar noise level as existing which is considered negligible, and no complaints were received from adjacent receivers. Vibration is not an issue with aeration equipment.

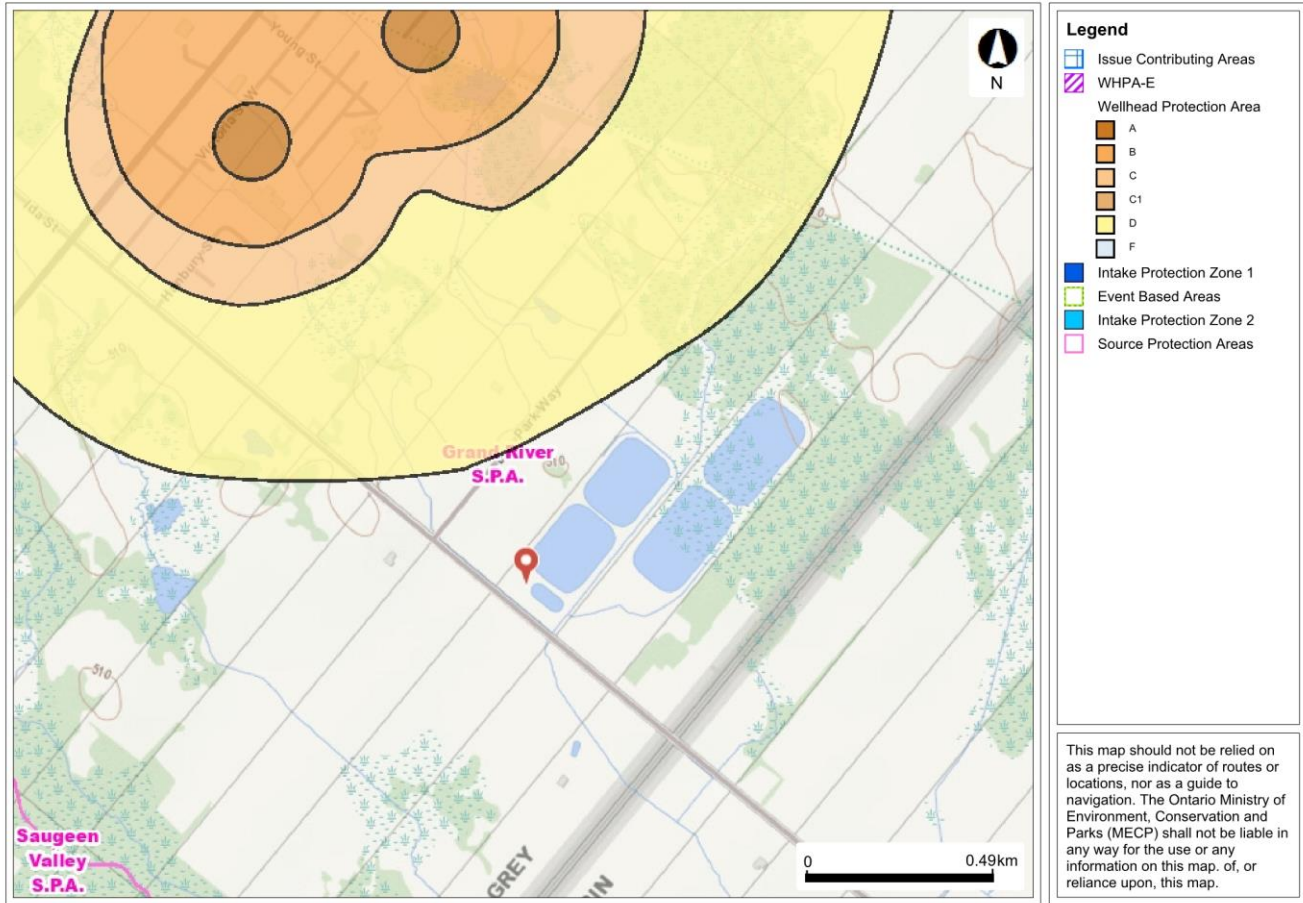
5.4 Source Water Protection

Source water protection is a program intended to protect the quality and quantity of water available for various Municipal uses. Different zones and areas have been designated to help achieve this; including Well Head Protection Areas (WHPAs), Intake Protection Zones (IPZs), Significant Groundwater Recharge Areas (SGRAs), Event-based Modelling Areas (EBAs), and Issues Contributing Areas (ICAs).

The delineation of these areas typically involves hydrogeological modeling and assessment to identify the areas where contaminants are most likely to infiltrate the groundwater and reach the source(s) over time. These areas are categorized into different zones based on the level of risk posed to the groundwater source. Zones closer to the source(s) typically have a higher level of protection and stricter land use regulations to prevent contamination, while zones further away may have less stringent controls. Refer to the following figures, indicating which areas the proposed works are within.

As shown below, the Project is not within a WHPA, IPZ, EBA or ICAs. The site is within a SGRA, however it does not have an applicable score and not of concern given the intended uses.

Project Site - Source Water Protection



6.0 NEXT STEPS

It is anticipated that the next stage of the Project will include but not be limited to the following tasks:

- Prepare and submit ECA Permit Amendment Application to the MECP. In support of this application, a design report and preliminary drawings will be prepared for the WWTF modifications in partnership with ACG Envirocan, Triplepoint and Aqua-Aerobics.
- Tender the Phase 1 WWTF modifications including preparation of detailed drawings and specifications. Upon tender closing and award, construction of Phase 1 WWTF modifications can commence. The expectation is that sufficient storage volume can be created within the existing lagoons ahead of time to permit decommissioning of certain treatment components thereby allowing for construction activities to occur.
- Continue to monitor influent and effluent flow rates and quality following Phase 1 implementation in order to estimate when Phase 2 upgrades should be initiated. Once it is determined that Phase 2 capacity will be required within a short period (i.e., 2-3 years) the MECP will be consulted to confirm the required Foley Drain monitoring that will be required to establish Phase 2 upgrade effluent criteria.
- Continue to review and monitor flow rates per capita for both sewage and water usage and implement additional flow reduction measures as warranted and feasible.

Appendix A - Dundalk Reserve Capacity Calculations



**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

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ORANGEVILLE • FERGUS • HARRISTON

April 21, 2023

Township of Southgate
R.R. #1
185667 Grey Road 9
Dundalk, Ontario
N0C 1B0

ATTENTION: Jim Ellis,
Public Works Manager

RE: Township of Southgate
Dundalk Water Supply and
Sewage Treatment Systems
2023 Reserve Capacity Calculations
Our File: A4160(23)-R04

Dear Sir:

The attached tables outline the 2023 reserve capacity calculations for the water supply and sewage treatment systems in Dundalk. The reserve capacities have been calculated in accordance with Ministry of Environment and Conservation and Parks (MECP) guidelines. 178 new residential units were occupied within the municipal systems of Dundalk in 2022.

Table 3 provides a summary of Committed Developments which include White Rose Phases 1, 2 and 3, the Flato West Apartment Building, Flato Phases 3-8, 10 and 11, Flato Glenelg Phase 1, totalling **562** equivalent residential units (ERUs). As Committed Units, these ERUs will not come out of the Uncommitted Reserve Capacity figures indicated on Table 1 and Table 2. Table 3: *Uncommitted Developments* further outlines the various potential developments that have been granted Draft Plan Approval, or are being considered, however have not been granted allocation.

Water System:

The three (3) year average maximum day demand of the water system increased from 941m³/d to **1,008m³/d** over the past year. The 2023 uncommitted reserve capacity of the water system is **2,158 ERU**. This is based on the Townships' amount of water taking permitted by the Permit to Take Water and committed developments as outlined in Table 3. The Permit to Take Water, indicates an allowable water taking of 2,817m³/day.

Refer to Table 1 for additional information regarding water system reserve capacity calculations.

Sewage Treatment Facility:

Table 2 summarizes the sewage treatment reserve capacity calculations for 2023. The three-year annual average day flow decreased from 1,165 m³/d to **1,124m³/d**. Despite an increase in the serviced population in 2022, the 2023 uncommitted reserve capacity for the sewage treatment facility has increased from 182 ERUs to **343** new development ERUs. The increase in available reserve capacity is a result of reduced flows to the treatment facility, and due to an additional reduction in the expected ERU flow rate. The reduce flow rate is supported by on-going review and monitoring which justified a per person flow rate of 300 Litres per person per day, within Ministry recommended limits.

Refer to Table 2 for additional information regarding sewage treatment system reserve capacity calculations.

Extraneous Flow:

In conjunction with the reserve capacity calculations, we have completed a high-level assessment of the extraneous flows within the Dundalk sewage collection system. This assessment compares the precipitation, temperature, average day demand of water and the average day sewage flow measured at the WWTP on a monthly basis. The results indicate that the annual extraneous flows are within expected limits. However, there is a significant relationship between the wastewater flows and temperature increase, indicative of a system that is subject to groundwater infiltration. This is based on peaking of wastewater flows noted during the spring melt (i.e., March). Sump pump connections are likely a significant contributor.

Recommendation:

Following Council's review and adoption of the attached report, we would recommend that a copy of the report be forwarded to the MECP District Office in Owen Sound and the Grey County Planning Department. We trust you will find the enclosed to be in order. Should you have any questions, please do not hesitate to contact this office.

Respectfully,
Triton Engineering Services Limited



Dustin Lyttle, P. Eng.

cc: Dina Lundy, Township of Southgate
Clinton Stredwick, Township of Southgate
Bev Fisher, Township of Southgate

**TABLE 1
TOWNSHIP OF SOUTHGATE
2023 RESERVE CAPACITY
DUNDALK WATER SYSTEM**

DESCRIPTION	2022
1 Available Capacity ¹	2,817
2 Max Day Demand (m ³ /d) ²	1,008
3 Reserve Capacity (m ³ /d) (1) - (2)	1,809
4 Serviced Occupied Households ³	1,487
5 Persons Per Existing Residential Unit (2021 Census Data)	2.66
6 Population Served (4) x (5)	3,955
7 Maximum Day Per Capita Demand (m ³ /d) (2) ÷ (6)	0.255
8 Additional Population that can be Served (3) ÷ (7)	7,099
9 Person Per New Equivalent Residential Unit (2022 DC Background Study)	2.61
10 Additional ERUs that can be served. (8) ÷ (9)	2,720
11 Committed Development ERUs (Table 3)	562
12 Uncommitted Reserve Capacity (ERUs) (10) - (11)	2,158
¹ Available Capacity is based on lesser of Firm Capacity or Permit to Take Water. Firm capacity is 2,819m ³ /day, PTTW is 2,817m ³ /d. Well Production is 4,780m ³ /day.	
² Max day demand is the average of the maximum day demands from 2020, 2021 and 2022 (905, 1,004 and 1,444m ³ /d respectively). Maximum day demands have been adjusted to account for high demands during various infrastructure works or watermain breaks.	
³ Serviced occupied households as reported in the 2022 Water Report.	

**TABLE 2
TOWNSHIP OF SOUTHGATE
2023 RESERVE CAPACITY
DUNDALK SEWAGE TREATMENT FACILITY**

DESCRIPTION	2022
1 Design Capacity of Sewage Treatment Facility (m ³ /d)	1,832
2 Average Day Flow ¹ (m ³ /d) (Average of 2019, 2020 and 2021 Average Day Flows)	1,124
3 Reserve Capacity (m ³ /d) (1) - (2)	708
4 Average New Development Per Capita Flow ² (m ³ /d)	0.300
5 Additional Population that can be Served (3) ÷ (4)	2,361
6 Person Per Equivalent Residential Unit (2022 DC Background Study)	2.61
7 ERU Flow Rate (m ³ /d) (4) x (6)	0.783
8 Additional ERUs that can be Served (5) ÷ (6)	905
9 Committed Development ERUs (Table 3)	562
10 Uncommitted Reserve Capacity (ERUs) (7) - (8)	343
¹ Average of the average day flows in 2020, 2021 and 2022 (1,161m ³ /day and 1,220m ³ /day and 990m ³ /day respectively).	
² As determined by new development flow analysis supported by flow monitoring program.	

**TABLE 3
TOWNSHIP OF SOUTHGATE
2023 RESERVE CAPACITY
SUMMARY OF DUNDALK DEVELOPMENTS**

COMMITTED DEVELOPMENTS	TOTAL UNITS	UNITS OCCUPIED IN 2022	REMAINING UNITS AT END OF 2022
White Rose (Phase 1 & 2)	66	3	0
White Rose (Phase 3) ¹	30	0	30
Flato West Block 75 Apartment Building ²	56	21	35
Flato North (Phase 3)	46	4	0
Flato North (Phase 4)	22	22	0
Flato North (Phase 5)	59	49	0
Flato North (Phase 6)	68	48	0
Flato East (7, 8 & 10)	188	0	188
Flato East (Phase 11) ³	123	0	123
Flato East (Phase 11 - Block 344)	29	0	29
Glenelg (Phase 1)	183	31	152
ANNUAL INFILL LOTS ⁴	5	0	5
SUB-TOTAL		178	562
TOTAL COMMITTED UNITS			562
UNCOMMITTED DEVELOPMENT	TOTAL UNITS		
White Rose (Phase 3)	47		
Flato East (Phase 9)	47		
Flato East (Phase 11)	50		
Glenelg (Phase 2)	155		
Glenelg (Phase 3)	459		
Flato North West	250		
SUB-TOTAL	1,008		
¹ Partial allocation (30 of 77) of White Rose (Phase 3). 47 remain unallocated.			
² Apartment units based on assumption that each unit is 0.7 ERU.			
³ Partial allocation (152 of 173) of Flato East (Phase 11). 50 remain unallocated.			
⁴ 5 ERUs designated annually for residential infill Lots.			

**TABLE 4
TOWNSHIP OF SOUTHGATE
2023 RESERVE CAPACITY
DUNDALK EXTRANEOUS FLOWS**

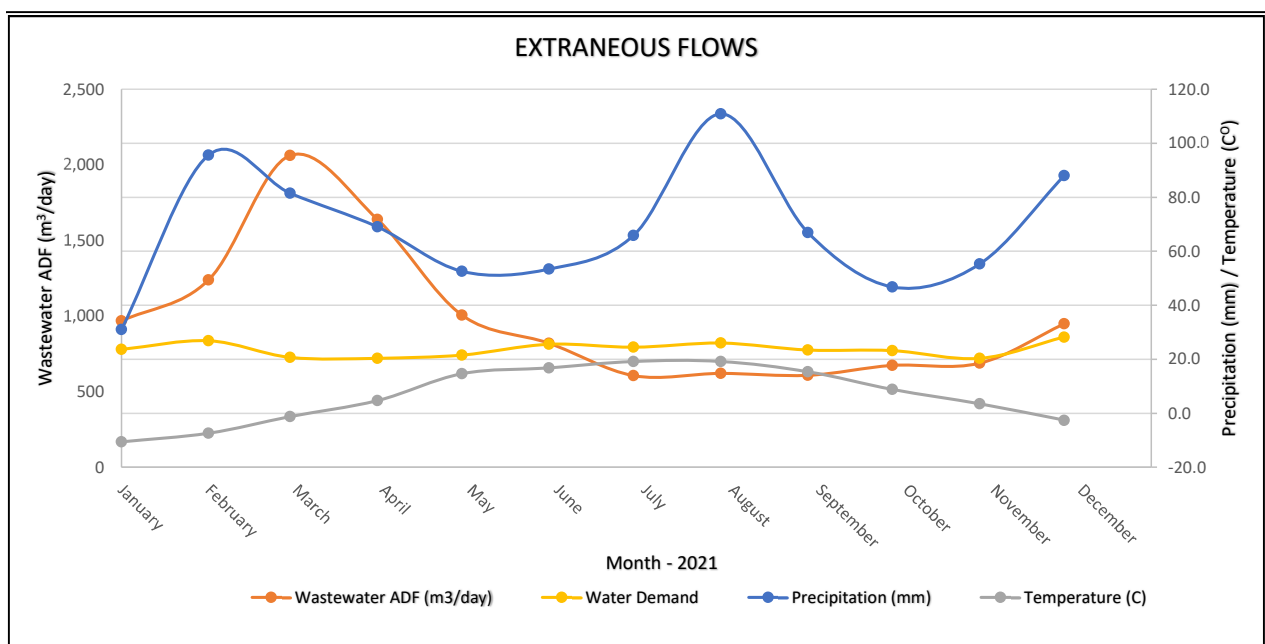
MONTH	PRECIPITATION (mm) ⁴	AMBIENT TEMP. (C°) ⁴	WASTEWATER ADF (m ³ /day)	WATER ADD (m ³ /day)	EXTRANEOUS FLOW (m ³ /day) ¹
January-2022	31.0	-10.6	967	779	188
February-2022	95.6	-7.4	1,239	837	402
March-2022	81.5	-1.2	2,063	727	1,336
April-2022	69.0	4.7	1,639	721	918
May-2022	52.6	14.6	1,006	742	264
June-2022	53.4	16.8	820	813	0
July-2022	65.8	19.2	606	794	-188
August-2022	110.9	19.2	621	821	-200
September-2022	66.9	15.4	608	775	-167
October-2022	46.8	8.8	674	772	-98
November-2022	55.3	3.5	688	721	-33
December-2022	88.0	-2.6	949	861	88
AVERAGE			990	780	209
REASONABLE EXTRANEOUS FLOW BASED ON POPULATION(m³/day)²					237
EXTRANEOUS FLOW OVER AND ABOVE REASONABLE AMOUNT(m³/day)					0
EQUIVALENT RESIDENTIAL UNITS USED BY EXTRANEOUS FLOWS (ERU)³					0

¹ This is the Wastewater ADF minus the Water ADD, used to determine Sanitary Flow over and above expected.

² Expected infiltration is 60 Litres per person per day based on modified historic MOE Standard.

³ Based on New Development Equivalent Residential Unit Sanitary Flow Rate.

⁴ Data as available for the nearest Weather Station (Environment Canada - Daily Data Report Mount Forest).



Appendix B - Aquatic Habitat Assessment

MEMORANDUM

To: Lindsay Scott, Triton Engineering Ltd.
From: Dean Fitzgerald, Premier Environmental Services
Premier Project: 617096.CE
Subject: Assessment of aquatic habitats of the James Foley Drain, Dundalk
Date: January 19, 2018

Premier Environmental Services (Premier) was retained by Triton Engineering Limited (Triton) to document the environmental features evident in different tributaries of the James Foley Drain in Dundalk, Ontario (hereinafter, the Site). This documentation of features included fish surveys as well as inspections of the habitats for former and active agricultural areas. These areas represent a mix of land use, including mapped wetlands, industrial developments, abandoned agriculture fields, active agricultural fields, roads, and sewage lagoons adjacent to the James Foley Drain. Field activities for this study were completed during November, 2017 and build upon the findings included within past studies. Also, information from Ontario's Ministry of Natural Resources and Forestry (MNRF) and Grand River Conservation Authority (GRCA) is also reviewed. It is Premier's understanding this study will contribute information to complement past studies of the James Foley Drain on-Site, to provide additional information for detailed land use planning.

The James Foley Drain is located in Dundalk, and was constructed to drain agricultural lands. The drain is associated with mixed land use, from agriculture to residential to industrial. Flow patterns can be generally described as from north to south, and it represents a portion of the Upper Grand River, in southern Ontario (Figure 1). Each section of the James Foley Drain on-Site was sampled with a strategy following a modified Ontario Stream Assessment Protocol (OSAP; OSAP, 2017). Application of OSAP allows for the quantification of a suite of habitat features that are of particular relevance to aquatic species such as fishes. When the OSAP inventory is applied, it generates information to quantify the status of aquatic habitats and also provides measurements of habitat variables to represent the channel, vegetation, and substrates. Such habitat variables provide physical context to classify then the channel as stable or unstable. This approach also involves documenting the composition of the fish community, the species richness, analysis of the community as diverse or depauperate. Also, the temperature requirements of the fishes then allow for the identification of the annual thermal regime without extensive survey efforts. Thus, the OSAP classification approach then uses this information to identify environmental management strategies based on physical habitats and fish community composition and temperature preferences. Such strategies also afford the opportunity to identify rehabilitation measures, if they are required, to enhance existing habitats.

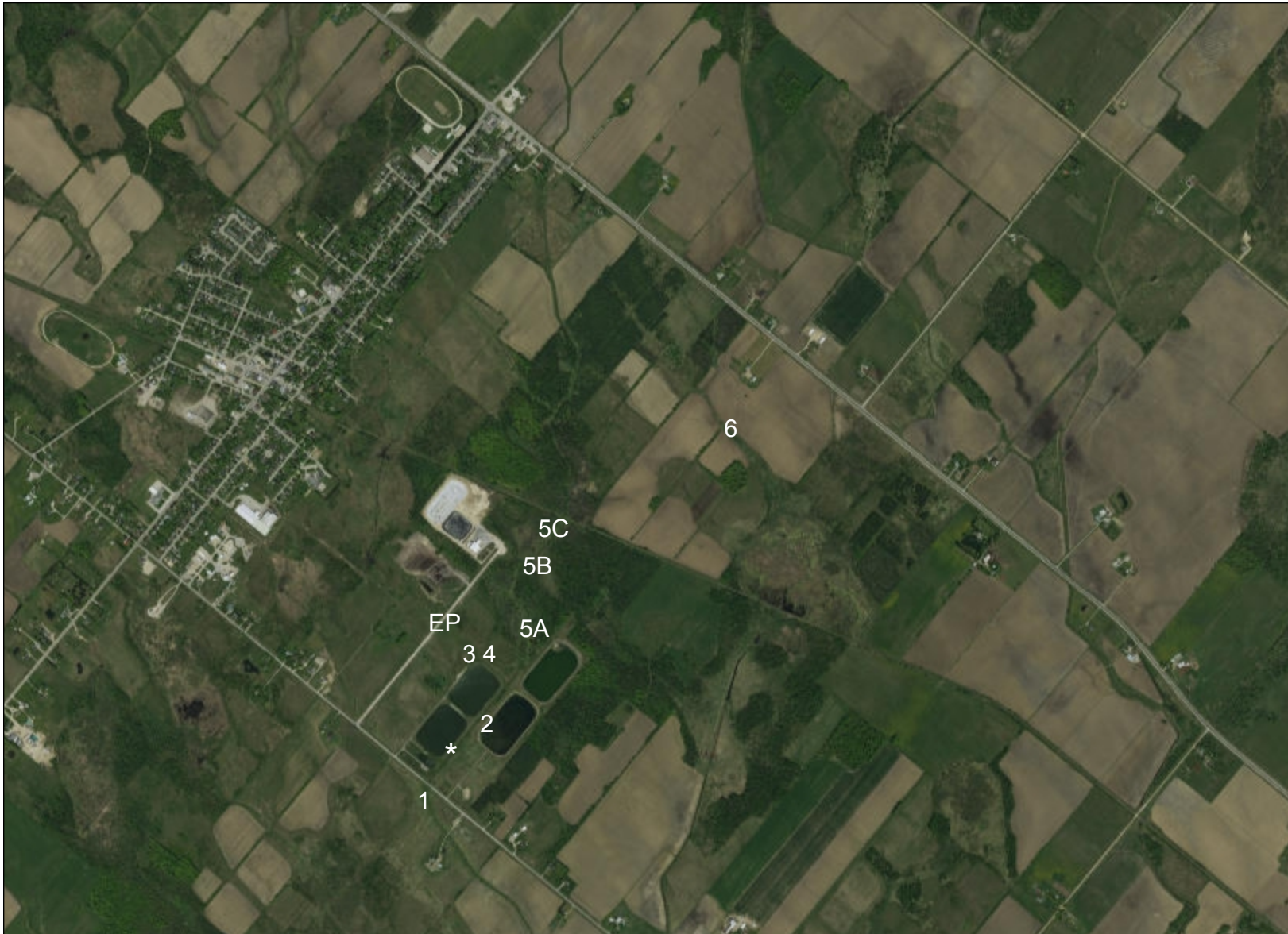
This study builds upon two past investigations that reported natural heritage features for the Site. The first natural heritage study was completed by ESG International in 2002, titled: *“Dundalk Industrial Park Environmental Impact Study”*. The ESG (2002) EIS documented existing land use, and natural heritage features using field study results collected during October 2002 as well as a desktop review. The 2002 study design reflected the requirements of the 1996 Provincial Policy Statement (PPS), as defined within Ontario’s Planning Act. As a result, a comprehensive description of existing vegetation communities, other natural heritage features, and land use was prepared. This information describing the Site was then used to assess risk to existing natural features and fish communities of James Foley Drain relative to proposed future land uses. The second natural heritage study was completed by Aboud & Associates in 2017, titled: *“Dundalk Industrial Access Road & Wastewater Treatment Facility Expansion Township of Southgate Schedule B Municipal Class Environmental Assessment Natural Heritage – Existing Conditions”*. The 2017 study design reflected the requirements of the PPS (2014), and guided the investigations of natural features 15 years after the original EIS, as background for the Municipal Class Environmental Assessment. This 2017 study reported findings from detailed inspections of the Site extending from 2014 to 2016, including extensive surveys of vegetation and wildlife. Findings from the 2002 EIS and 2017 study are reviewed in this Memorandum.

This Memorandum also provides a review of Species At Risk (SAR) observations, since Ontario’s Endangered Species Act was updated during 2007 (Ontario, 2007) following the completion of the ESG (2002) EIS. However, the Aboud & Associates (2017) study includes comprehensive information on SAR as well as regionally rare species on-Site.

This Memorandum includes the following sections:

- 1) Review of findings from ESG (2002) and Aboud & Associates (2017) studies of Dundalk Industrial Park concerning James Foley Drain;
- 2) Review of information regarding SAR from MNRF databases;
- 3) Findings from the field inspections;
- 4) Interpretation of findings from field inspections; and
- 5) Recommendations on environmental management strategies.



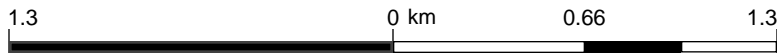


Legend

- Assessment Parcel
- Secondary Watershed
- Tertiary Watersheds
- Great Lakes - St. Lawrence Basin
- Hudson - James Bay Basin
- Nelson River Basin
- Diversions
- Waterbody Outlet
- Conservation Authority Dam
- Provincial Dam
- Federal Dam
- OPG Dam
- Other Dam
- HYDAT Gauge
- HYDAT Gauge (RHBN)

Land Cover Compilation

- Other
- Cloud/Shadow
- Clear Open Water
- Turbid Water
- Shoreline
- Mudflats
- Marsh
- Swamp
- Fen
- Bog
- Heath
- Sparse Treed
- Treed Upland
- Deciduous Treed
- Mixed Treed
- Coniferous Treed
- Plantations - Treed Cultivated
- Hedge Rows
- Disturbance
- Open Cliff and Talus
- Alvar
- Sand Barren and Dune
- Open Tallgrass Prairie
- Tallgrass Savannah
- Tallgrass Woodland
- Sand/Gravel/Mine
- Tailings/Extraction
- Bedrock
- Community/Infrastructure
- Agriculture and Undifferentiated Rural Land Use



Scale: 1 : 25,904

Projection: Web Mercator



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1) Review of Dundalk Industrial Park EIS concerning James Foley Drain

Key observations and interpretations from ESG (2002) for the area based on criteria included within the 1996 Provincial Policy Statement, the Official Plan of Grey County, Township of Melancthon, and Grand River Conservation Authority (GRCA). The findings include:

- Land use designated as rural – representing active and abandoned agriculture with active rail line bisecting the centre of the study area;
- Land use also designated as hazard, due to portion of non-significant Melancthon wetland #4, found along portions of the drain
- Area includes a water main extension and a number of sewage lagoons;
- Area contains significant woodlands, to the east of the sewage lagoons, referred to as Ash Swamp with some additional patchy non-significant woodlands;
- Fish community included a total of three species during surveys in 2000, as: Brook Stickleback (*Culaea inconstans*), Northern Redbelly Dace (*Chrosomus eos*), and Central Mudminnow (*Umbra limi*) although the surveys were described as limited;
- Fish community described as representing warmwater thermal regime;
- No Species at Risk vegetation or wildlife was documented in the area; and
- Environmental management measures recommended 15 m vegetation buffer along shorelines of James Foley Drain, to provide additional protection to fish habitats, to be consistent with GRCA guidelines.

Key observations and interpretations from Aboud & Associates (2017) study for the area based on criteria included within the 2014 Provincial Policy Statement, the Official Plan of Grey County, Township of Melancthon, and Grand River Conservation Authority (GRCA). The findings include:

- Land use includes industrial facilities, wastewater infrastructure, roads, a trail established along the abandoned rail line, row crop agricultural lands, and abandoned fields.
- Land use designated as industrial and rural in Grey County Official Plan (OP); adjacent lands designated as agricultural, residential, and natural lands in Grey County OP ;
- Provincially Significant Melancthon Wetland #1 exists within the study area, and was studied in detail during 2003;
- Study area assessed and evaluated using Ecological Land Classification (ELC) to document vegetation communities, drainage patterns, land use, and candidate wildlife habitats, leading to identification of 27 distinct habitats;
- All areas on-Site previously disturbed at some point in past by agriculture, forestry, urbanization or combination of these activities;
- Non-native Wild Parsnip *Pastinaca sativa* and Cow Parsnip *Heracleum maximum* identified along James Foley Drain, in different sections. Presence of Wild Parsnip and Cow Parsnip is noteworthy, since both plants are considered hazards, as they both produce a toxin that will burn human skin on contact;
- Area contains a wide range of habitat polygons defined using ELC, including meadows, mixed swamp, thicket swamp, plantations, woodlands, and forest;



- Mapped flood plains associated with Melancthon Wetland along different sections of James Foley Drain;
- Inspections of different sections of James Foley Drain, to quantify aquatic habitat features with no directed fish community surveys;
- Outlet of sewage lagoons located just upstream from Ida Street bridge;
- Review of fish community records from GRCA and MNRF included a total of twelve species during surveys in 1996 and 2000, as: Brook Stickleback (*Culaea inconstans*), Northern Redbelly Dace *Chrosomus eos*; Central Mudminnow *Umbra limi*; Rock Bass *Ambloplites rupestris*; Brown Bullhead *Ameiurus nebulosus*; Johnny Darter *Etheostoma nigrum*; Common Shiner *Luxilus cornutus*; Smallmouth Bass *Micropterus dolomieu*; Blacknose Shiner *Notropis heterolepis*; Bluntnose Minnow *Pimephales notatus*; Fathead Minnow *Pimephales promelas*; and Creek Chub *Semotilus atromaculatus*.
- Fish community described as representing warmwater-coolwater regime;
- Presence of constant flow in the drain and sensitive species led Department of Fisheries and Oceans (DFO) to classify James Foley Drain as DFO as Class E with timing windows for in-water activity that exclude fish spawning season, as March 15 to July 15;
- No SAR vegetation but regionally rare native species: Wild Cucumber *Echinocystis lobate*, American Witch-hazel *Hamamelis virginiana*, Grey Dogwood *Cornus foemina*;
- SAR birds identified as: Barn Swallow *Hirundo rustica*, Bobolink *Dolichonyx oryzivorus*, Eastern Meadowlark *Sturnella magna*, and Eastern Wood Pewee *Contopus virens*.
- The SAR wildlife only included Snapping Turtle *Chelydra serpentine*
- Some SAR not listed within provincial and GRCA databases were also identified by MNRF as possibly in the area, including: Golden-Winged Warbler *Vermivora chrysoptera*, Henslow's Sparrow *Ammodramus henslowii*, Milksnake *Lampropeltis triangulum*, Northern Long Eared Bat *Myotis septentrionalis*, Eastern Small Footed Bat *Myotis leibii*, and Butternut (*Juglans cinerea*); none of these SAR were observed.
- Environmental management measures recommended 15 m vegetation buffer along shorelines of James Foley Drain, to provide additional protection to fish habitats, to be consistent with GRCA guidelines.

2) Review of Information regarding Species At Risk from MNRF

Species At Risk information for the Site was reviewed by Premier. This review focused on the MNRF's Natural Heritage Information Centre (NHIC) online databases for SAR observations during the last 25 years (NHIC, 2017). The NHIC information is aggregated within 1 km² grids (LIO, 2016). The review identified five grids for the Site included survey stations within the James Foley Drain area and similar SAR, including:

- Grid 947823: Bobolink; Eastern Meadowlark; Barn Swallow; Snapping Turtle;
- Grid 947832: Bobolink; Eastern Meadowlark; Barn Swallow; and Snapping Turtle;
- Grid 947833: Bobolink; Eastern Meadowlark; Barn Swallow; and Snapping Turtle;
- Grid 957942: Bobolink; Eastern Meadowlark; Barn Swallow; and Snapping Turtle; and
- Grid 958044. Bobolink; Eastern Meadowlark; Barn Swallow; and Snapping Turtle.



Observation of the same SAR within NHIC as possibly on-Site reflects the similarity in habitats along James Foley Drain. It is noteworthy to state that Eastern Wood Pewee was not found in the 2017 NHIC database but was identified by MNRF possibly present. This absence of Eastern Wood Pewee from the database likely reflects the assignment of protected status during 2014. Hence, it is prudent to review the habitat requirements of these five SAR.

Bobolink and Eastern Meadowlark are birds that prefer to forage and nest in uncut fields. These birds use the vegetation of uncut fields for foraging and to hide ground nests. Preferred habitats include vegetation that is dense and shows heights > 1 m. Habitat preferences also include the fields show relatively large areas that are associated with abundant seeds, varied invertebrates such as spiders, as well as flying insects. Since these birds place nests on the ground, they usually avoid using flood plains for breeding but will forage in flood plains. Also, these birds prefer fields with very low density of trees and shrubs, as such woody stems provide habitat for predators such as Raccoon (*Procyon lotor*) and Eastern Gray Squirrel (*Sciurus carolinensis*). Sometimes these birds will nest in fields close to human features such as barns in contrast to published literature, given the relatively low density of predators (D. Fitzgerald, pers. observ.).

In the case of Barn Swallow, this bird often will establish nests in man-made structures such as barns, bridges, houses, and road culverts. The tendency for Barn Swallow nest establishment on such structures stems from the bird using habitat with a low density of predators like Raccoon (*Procyon lotor*) as well as being located within about 1000 m of surface waters. For bridges and road culverts, the typical mud nest is often placed on the underside of the bridge deck while nests can be placed anywhere along the length of a culvert. In both settings, these nests are very inaccessible to predators. Standard methods are available to manage Barn Swallow and prevent harm to specimens and disturbance to nests, if they are nesting on the bridge or within the road culvert. Such management methods include the placement of bird netting over the nest, to prevent use, prior to the typical nesting season, starting on April 1, in advance of any construction activities. The results from inspections will identify the best way to manage Barn Swallow, if they are evident.

Eastern Wood Pewee prefers mid-age forest habitats that demonstrate sparse understory vegetation. This preference for forests with relatively tall trees is associated with the placement of nests well off the ground, away from predators such as Raccoon. The Eastern Wood Pewee also preferentially feeds on flying insects and these insects would be expected to occur in forests as well as adjacent agricultural fields. Standard methods are available to avoid disturbance to this bird, using construction timing windows and avoidance of tree removal.

For Snapping Turtle, this species is often evident in slow moving sections of creeks, ponds, lakes, and reservoirs. Preferred nesting habitat for Snapping Turtle includes the gravel found along roadways as well as natural sand-gravel bars that often form along creek shorelines. Such sand-gravel bars can be associated with the footings of bridges. Standard methods are available to manage Snapping Turtle and prevent harm to specimens and disturbance to nests. Such management methods include the placement of sediment-erosion control fences around gravel or sand bars near the bridge or culvert, to prevent turtles from accessing the area during construction. Inspections will identify the best way to manage turtles, if they are evident.



Findings from the Field Inspections

Habitat inspections were completed in former agricultural and active agricultural areas involving twelve (12) stations along the James Foley Drain on-Site on November 15, 2017. These areas are generally grouped as follows: in proximity to the bridge on Eco Parkway, in proximity to the bridge on Ida Street, the tributary east of the sewage lagoons, and tributary to the west of Highway 10. This approach also recognizes the sewage lagoons outlet just upstream of the Ida Street Bridge, and involves surveys upstream and downstream of this outlet. The 12 stations were inspected using a modified OSAP protocol (OSAP, 2017). At each station, the habitat features were inspected and documented. This inspection and documentation of habitat features represents a quantitative inventory of relevance to aquatic species such as fishes. One member of the study team previously completed the OSAP training course and previously applied this strategy in other streams. Habitat features documented at each station included:

- Channel width and channel depth;
- Type of substrate within channel;
- Presence / absence of aquatic vegetation and species of dominant aquatic vegetation;
- Presence / absence of undercut shoreline;
- Type of shoreline vegetation;
- Stability of slope along shoreline channel (i.e., stable or eroding);
- Stability of channel (i.e., stable or eroding);
- Degree of shading of channel by overhanging woody vegetation;
- Evidence of road drainage to channel;
- Evidence of wildlife, including birds and nests;
- Photographs of field features; and
- Other habitat observations of relevance.

Maps of the water crossings were prepared using the MNR's Ontario Flow Assessment Tools. This online tool is available at: <https://www.ontario.ca/page/watershed-flow-assessment-tool>.

Habitat Descriptions

Habitat features for the study area show the following land use, as reviewed in Table 1:

- near bridge on Eco Parkway, considered former agricultural fields;
- near bridge on Ida Street, considered former agricultural fields;
- near tributary east of the sewage lagoons, considered former agricultural fields; and
- tributary to the west of Highway 10, observed as active agricultural fields.



Table 1: Habitat features observed at the sample stations across the varied areas associated with the James Foley Drain in Dundalk, Ontario following a modified OSAP inventory strategy.

Habitat Variables	Station 1			Station 2	Station 3	Station 4		Station 5A and 5B	Station 5C	Station 6A and 6B	Bridge at EcoParkway	
	Near Bridge at Ida Street			Upstream 150 m from Ida Street Bridge	Side channel	Relative to Side Channel		30-130 m upstream of Confluence	Just downstream from rail trail	Drainage feature along field, west of Highway 10	Upstream 20 m	Downstream 30 m
	Upstream of Bridge - 10 m	25 m downstream at Braided Channel	Downstream of Bridge - 150 m			Upstream	Downstream					
Description	Channel with runs and vegetation on both shorelines.	Channel with runs and vegetation on both shorelines.	Pool with vegetation on both shorelines.	Channel with runs with dense vegetation on both shorelines.	Wide channel with slow moving water, frozen at time of sampling.	Channel with runs and pools with dense vegetation on both shorelines		Run with dense vegetation on both shorelines and substrate dominance by rock		Farm ditch that is completely covered with vegetation and channel is not visible.	Channel with run with dense vegetation on both shorelines.	
Wetted Width (m)	3	1.5	3.3	2.5	4	2.5	3	2	1.8	1	2	3
Maximum Depth (m)	0.5	1.2	1	0.6	0.75	0.75	1.2	0.35	0.5	0.2	0.35	0.75
Shoreline Vegetation	West shoreline: 50% Reed Canary Grass, Goldenrod/Aster, Reed Canary Grass, Horsetail East Shoreline: 50% Reed Canary Grass, Goldenrod, Aster, and Parsnip	West and East Shorelines: Reed Canary Grass with Parsnip	West and East Shorelines: Reed Canary Grass, Goldenrod, and Parsnip	Red-osier Dogwood, Goldenrod, Aster, Parsnip; patches of Reed Canary Grass	75% Reed Canary Grass; Red-ossier dogwood, Goldenrod, Aster, Parsnip. All Red-ossier Dogwood browsed by deer.		70% Reed Canary Grass; Red-ossier Dogwood, Goldenrod/Aster with 10% Parsnip. All Red-ossier Dogwood stems browsed by deer.	50% Reed Canary Grass and 30% goldenrod/aster with 20% other herbaceous species; no Parsnip.	90% Reed Canary Grass; 10% Goldenrod, Asters; no Parsnip.	60% Reed Canary Grass, Red osier Dogwood, Parsnip, Goldenrod, Aster, Parsnip	70% Reed Canary Grass, Red osier Dogwood, Goldenrod, Asters; Parsnip.	
Aquatic Vegetation	<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i> ; Watercress	Extensive Watercress	<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i> , Watercress	Extensive Watercress	<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i> , Watercress		<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i>		None	<i>Ceratophyllum demersum</i> , Watercress	<i>Ceratophyllum demersum</i> , <i>Elodea canadensis</i> ; Watercress	
Banks	Both Undercut	Both Undercut	Both Undercut	Both Undercut	N/A	Both Undercut		Both Undercut	Both Undercut	Both Undercut	Both undercut	Both Undercut
Shoreline Stability	Both Stable	Both Stable	Both Stable	Both Stable	N/A	Both Stable		Both Stable	Both Stable	Both Stable	Both stable	Both Stable
Substrate	40% Cobble, 30% Gravel, 30% Sand	50% Cobble, 30% Gravel, 10% Sand, 10% Sediment	30% Cobble, 15% Gravel, 10% Sand	65% Cobble, 25% Sand, 10% Gravel	100% Sediment	50% Cobble, 20% Sediment, 15% Sand, 10% Gravel		70% Cobble, 30% Sand	50% Cobble, 25% Gravel, 25% Sand	100% Sediment	65% Cobble, 25% sand, 10% gravel	50% Cobble, 25% sand, 15% gravel, 10% sediment
Shading (%)	0	0	0	0	0	0		0	0	0	0	0
Other comments	Ditch 10 m upstream of bridge (enters stream on East side) with evidence of sediment transport to drain.	Channel braided with stable small islands dominated by Goldenrod and Asters.	Varied aquatic vegetation in pool, such as <i>Ceratophyllum</i> , <i>Elodea</i> , and <i>Potamogeton</i> .	Shoreline likely modified during construction of adjacent sewage lagoons, and explains small quantity of Reed Canary Grass.	Area with odour of hydrogen sulphide, suggesting anoxic sediments.	Some deep pools evident, with depths > 1.5 m.		Very stable shorelines with zero sediment in substrate. All Red-osier Dogwood stems browsed by deer.	Farm ditch flooded into adjacent fields and difficult to sample due to dense vegetation. No woody stems evident along channel.	Field with dense shoreline vegetation; Red-osier Dogwood evident but all browsed by deer.		

The habitat features for all former agricultural fields show habitats with similarity in shoreline features such as the presence of dense terrestrial vegetation at all stations, stable shorelines, undercut shorelines, and zero shading of the channels due to the absence of overhanging woody vegetation. Indeed, most stations across the Site shows extensive Red-ossier Dogwood (*Cornus sericea*) but all the stems have been browsed by wildlife to a height that is less than 0.3 m. A total of one woody stem of Red Ossier Dogwood was observed with a height of about 2 m along the drain whereas all other mature trees were essentially absent. A single tree was observed upstream of the Ida Street Bridge with a diameter at breast height (DBH) of 8 cm. In > 99% of the area, the Red-ossier Dogwood stems were browsed to the ground. Also, most stations included native Coontail (*Ceratophyllum demersum*), native Canada Waterweed (*Elodea canadensis*) and/or non-native Watercress (*Nasturtium officinale*) as the most common submerged aquatic vegetation. It is probable these hardy aquatic plants were most common at the station, due to the late survey timing with the seasonal decline of other aquatic vegetation species (e.g., *Potamogeton* spp.). Hence, the aquatic vegetation inventory should be regarded as incomplete. Refer to Plates 1 to 3 for representative photographs of these former agricultural areas and Appendix A for additional photographs.

It should be also noted that the habitats associated with former agricultural field showed varying densities of noxious invasive plants. Specifically, stems that were either Cow Parsnip (*Heracleum maximum*) or Wild Parsnip (*Pastinaca sativa*) were evident along most shorelines but it was not feasible to confirm the identity, as the plants were too decomposed and the new growth was very early in development. Inspections identified extensive distribution of parsnip in the three areas of former agricultural fields.

The area west of Highway 10 demonstrates habitat features that likely reflect the presence of active agricultural in the adjacent farm fields. That is, this tributary was adjacent to two fields used for a Corn (*Zea mays*) Soybean (*Glycine max*) rotation, based on crop debris, and differs from the other areas associated with former agricultural activity. For example, this area had dense shoreline vegetation (i.e., 90% Reed Canary Grass *Phalaris arundinacea*) that covered the entire channel. This Reed Canary Grass overhung the channel with no aquatic vegetation evident, due to the extensive shading of the water. The tributary had a narrow channel and shallow depth. The tributary was also flooding the adjacent Soybean fields on the date of inspection. The shorelines of the tributary were classified as stable with little evidence of erosion due to the dense vegetation. No parsnip was observed west of Highway 10. Refer to Plate 4 for representative photographs as well as additional photographs in Appendix A.

Aerial photographs with high resolution of each area and station are presented as Figures 2 to 9, to represent prevailing land use in proximity to James Foley Drain.

Species At Risk

Inspections identified direct evidence of presence of Barn Swallow on-Site, as follows:

- At least 20 active Barn Swallow nests on the bridge at Ida Street, and
- At least 70 active nests on the bridge at EcoParkway.





Plate 1: View of channel of James Foley Drain at bridge on Ida Street. View on left shows the channel upstream of the bridge whereas the view on the right shows the channel downstream of the bridge. This bridge was observed to have approximately 20 active Barn Swallow nests.



Plate 2: View of channel of James Foley Drain at bridge on EcoParkway Drive. View on left shows the channel upstream of the bridge whereas the view on the right shows the channel downstream of the bridge. This bridge was observed to have approximately 70 active Barn Swallow nests.





Plate 3: View of station 5B about 130 upstream of confluence of this tributary with main channel of James Foley Drain. Note the presence of only herbaceous vegetation on shoreline with absence of woody stems.



Plate 4: View of portion of James Foley Drain southwest of Highway 10 (Station 6). The view on the left shows the Soybean field and pooled water on the edge of the field while the view on the right shows the tributary channel of James Foley Drain with at least 90% coverage by Reed Canary Grass and absence of woody stems.





Figure 2: Map showing sample stations upstream and downstream of EcoParkway Drive. The stations (marked with blue ovals) were upstream and downstream, and demonstrated well-defined channels with dense aquatic vegetation. The bridge was observed to have about 70 Barn Swallow nests.



Figure 3: Map showing sample Station 1 (marked with blue oval) downstream of Ida Street. The channel directly upstream and downstream of the bridge was well-defined with dense aquatic vegetation while the channel about 75 m downstream demonstrated extensive slumping and erosion. The bridge was observed to have 20 active Barn Swallow nests.





Figure 4: Map showing sample Station 2 (marked with blue oval) upstream of Ida Street. The station was located ~ 150 m upstream and downstream of the bridge, and well-defined with patchy aquatic vegetation.

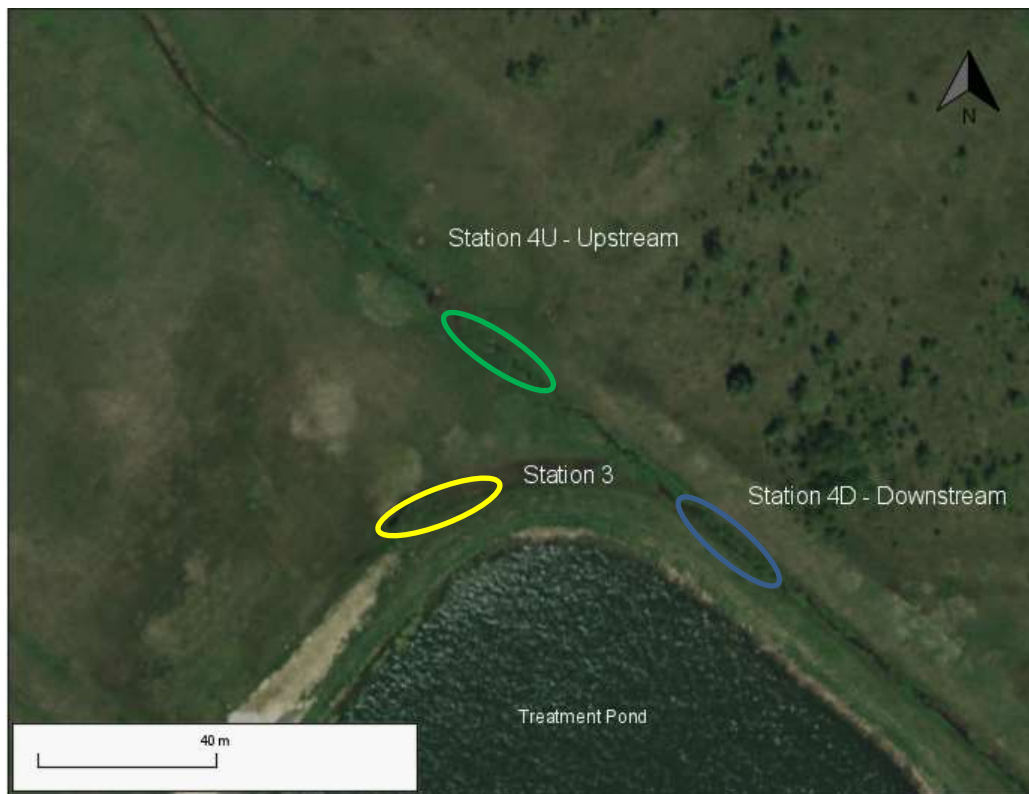


Figure 5: Map showing sample Station 3 (marked with yellow oval) draining a side channel and Station 4U (green oval), upstream of the confluence of station 3, and Station 4D (blue oval), downstream of station 3. The channels all demonstrated dense aquatic vegetation and undercut banks. This side channel was covered in ice on the day of the survey whereas the main channel was free of ice.





Figure 6: Map showing sample station 5A (marked with blue oval). The channel demonstrated predominantly rock substrate with sparse aquatic vegetation and undercut banks.



Figure 7: Map showing sample station 5B (marked with blue oval). The channel demonstrated predominantly rock substrate with sparse aquatic vegetation and undercut banks.





Figure 8: Map showing sample station 5C (marked with blue oval). The channel demonstrated variable substrate, stable shorelines, with sparse aquatic vegetation, and undercut banks.

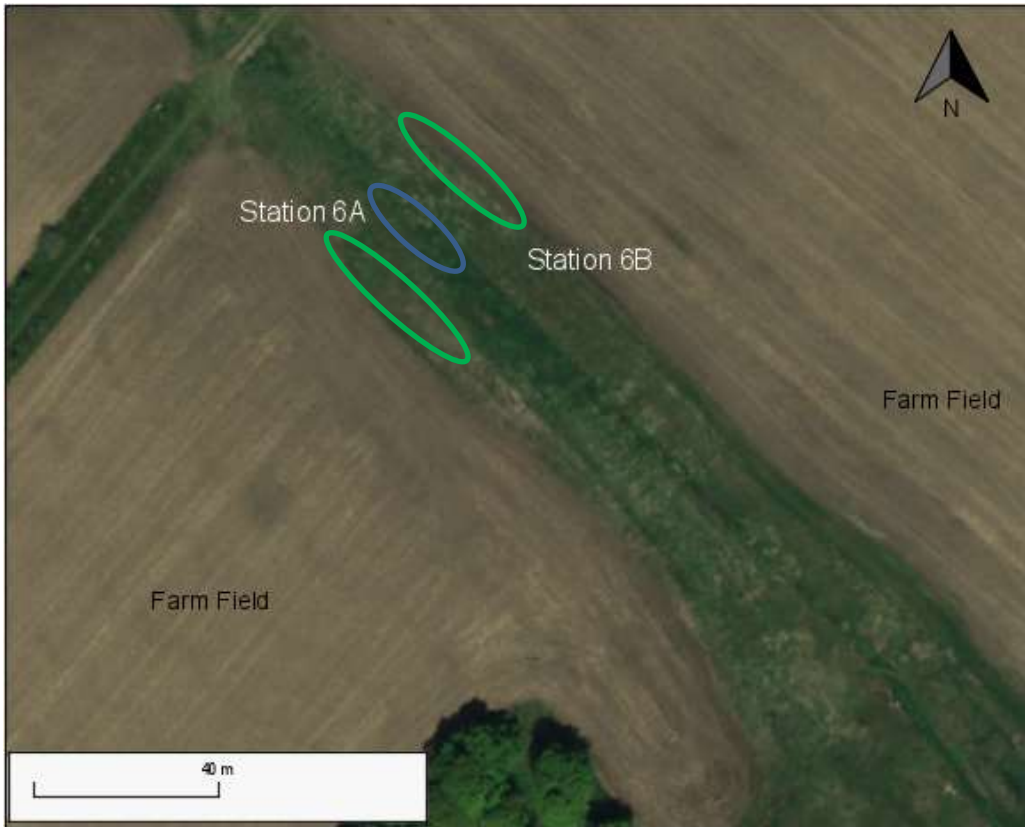


Figure 9: Map showing sample station 6A (marked with blue oval) in the channel. This channel was narrow, stable, and defined with dense vegetation; water depth was ~25 cm. The pooled water (depth ~ 15 cm) on the adjacent farm fields was also sampled for fish, and described herein as 6B (green ovals).



Fish Surveys

For this study, a request for a Licence To Collect Fish For Scientific Purposes for surveys in James Foley Drain was submitted on 16 October, the day before Premier was authorized to complete this study. The fish collection licence (#1088318 – copy in Appendix B) was issued on 23 October. As noted, the habitat inspections and fish collections were completed on 15 November. Due to the unseasonably cold weather observed during November in Ontario, the decision was made to not use minnow traps to survey the fish as proposed, as low water temperatures results in reduced movement of fishes and poor catch rates in minnow traps. The alternative was to use hand-held dip nets with fine mesh along with minnow seine nets.

The approach of using seine nets and dip nets to capture fish was applied at Station 1, in proximity to the bridge across Ida Street. This application of seine nets in the channel was very difficult, due to the dense aquatic vegetation, especially Coontail, as the seine was constantly caught on the plants and the fish were observed to escape the net at these times. As such, it was decided to compare the catch of the seine with the dip nets in the field, to determine if the two gear types caught similar species of fish. This comparison involved the completion of the catch from seven seine hauls relative to 15 minutes of dip netting the aquatic vegetation.

A total of 16 species of fish were captured with the two gear types in proximity to Station 1 (Table 2). All species that were captured were identified using standard taxonomic keys (i.e., Scott and Crossman, 1973). All species captured are native to the Grand River watershed with the exception of two: Pumpkinseed *Lepomis gibbosus*, as it is regarded as a non-native species that arrived to the Grand River during the early 1900s; and Central Stoneroller (*Campostoma anomalum*), observed to have first entered the middle Grand River during the mid-1990s (Fitzgerald et al. 1998; Holm and Crossman, 2001).

When the captured fish are compared between the seine net and dip nets (Table 2), it is observed that the seine net captured nine (9) species relative to 15 species caught with the dip nets. Since the dip net caught more species than the seine net, it was determined that the dip net was a reasonable method for fish collection, given the prevailing habitats of dense aquatic vegetation in James Foley Drain. All fish collections reported in this study represent 15 minutes of effort with dip nets.

Fish collections using seine nets and dip nets captured a total of 16 species across the 12 stations surveyed (Table 3). All species captured are typically found in small headwater streams of Ontario. In terms of species richness, the most diverse station was downstream of the Ida Street bridge at Station 1, with 15 species. The second most diverse habitat was the tributary east of the sewage lagoons. The least diverse habitat was the side channel adjacent to the sewage lagoons, with two fish species. This side channel did not receive direct flows and was the only habitat with ice cover that had sediment with hydrogen sulphide (e.g., rotten egg) smell, indicating low dissolved oxygen. This low dissolved oxygen is attributable to the ice and no direct flows and provides a simple explanation for the low number of fish species in this area. The fish communities were similar upstream and downstream of the sewage lagoon outlet, suggesting no influence of this water on the distribution of fishes.



Table 2: Comparison of the fish species captured with seine hauls with fish from 15 minutes of dip netting at Station 1 on James Foley Drain, downstream of the bridge at Ida Street.

Species		Seine Net	Dip Net
Common Name	Scientific Name		
Common Shiner	<i>Luxilus cornutus</i>	√	√
Rosyface Shiner	<i>Notropis rubellus</i>	√	√
Striped Shiner	<i>Luxilus chrysocephalus</i>		√
Johnny Darter	<i>Etheostoma nigrum</i>	√	√
Fantail Darter	<i>Etheostoma flabellare</i>	√	√
Least Darter	<i>Etheostoma microperca</i>		√
Rainbow Darter	<i>Etheostoma caeruleum</i>	√	
Bluntnose Minnow	<i>Pimephales notatus</i>	√	√
Brassy Minnow	<i>Hybognathus hankinsoni</i>	√	√
Central Mudminnow	<i>Umbra limi</i>		√
Brooke Stickleback	<i>Culaea inconstans</i>	√	√
Creek Chub	<i>Semotilus atromaculatus</i>		√
Central Stoneroller	<i>Campostoma anomalum</i>		√
Blacknose Dace	<i>Rhinichthys atratulus</i>	√	√
Northern Redbelly Dace	<i>Chrosomus eos</i>		√
Pumpkinseed	<i>Lepomis gibbosus</i>		√
Total Fish Species		9	15



Table 3: Catch of fish species at stations along James Foley Drain in Dundalk, Ontario using 15 minutes of effort dip netting aquatic vegetation and substrates. Fish species were identified using standard taxonomic keys (e.g., Scott and Crossman, 1973).

Species		Station 1	Station 2	Station 3	Station 4		Station 5A and 5B (Combined catch)	Station 5C	Station 6		Bridge on Eco Parkway	
Common Name	Scientific Name	Ida Street Bridge	150 m upstream of Ida Street Bridge	Side channel next to lagoon	Downstream of Eco Parkway		30-130 m Upstream of Confluence	Downstream of Rail Trail	West of Highway 10, in tributary channel	In farm fields, next to channel	Upstream	Downstream
					Upstream of side channel	Downstream of side channel						
Common Shiner	<i>Luxilus cornutus</i>	10	15	1	15	4	25	14	2	1	10	4
Rosyface Shiner	<i>Notropis rubellus</i>	7	5								6	1
Striped Shiner	<i>Luxilus chrysocephalus</i>	5	2			1	2				4	1
Johnny Darter	<i>Etheostoma nigrum</i>	3	2				1	1	2			
Fantail Darter	<i>Etheostoma flabellare</i>	1										
Least Darter	<i>Etheostoma microperca</i>	1	2									
Rainbow Darter	<i>Etheostoma caeruleum</i>	1	1									
Bluntnose Minnow	<i>Pimephales notatus</i>	2	11		1		1	1			1	2
Brassy Minnow	<i>Hybognathus hankinsoni</i>	1	4		2							
Central Mudminnow	<i>Umbra limi</i>	6	6		1		2	2	7	2	8	
Brooke Stickleback	<i>Culaea inconstans</i>	8	5	2	4	3	21	22	6	3	28	2
Creek Chub	<i>Semotilus atromaculatus</i>	7	10				8	5	8	2	1	
Central Stoneroller	<i>Campostoma anomalum</i>	6	5				4	1				3
Blacknose Dace	<i>Rhinichthys atratulus</i>	1	1		1		1					
Northern Redbelly Dace	<i>Chrosomus eos</i>		1				2		1		1	
Pumpkinseed	<i>Lepomis gibbosus</i>	6	1			1					6	
Crayfish		13	1		1		1				2	1
Fingernail Clams		Multiple										
Leopard Frog	<i>Lithobates pipiens</i>	4					1					
Green Frog Tadpole	<i>Rana clamitans</i>			2		1					4	
Fish species richness		15	15	2	6	4	10	7	6	4	11	7

Interpretation of Findings from Field Inspections

Vegetation Analysis

Natural herbaceous vegetation that was > 0.5 m in height and dense was observed along all portions of the James Foley Drain within the four areas and 12 stations that were sampled for this study. This observation of natural vegetation along James Foley Drain provides a simple explanation for the presence of stable channels with little evidence of erosion. The exception to this pattern was the channel about 150 m downstream of the bridge at Ida Street with extensive erosion and channel slumping despite the presence of dense vegetation (Plate 5). It appears this erosion is caused by high flows, as the erosion is evident where the channel is meandering to the west. Three sections of James Foley Drain also demonstrated shorelines with extensive growth of Red-ossier Dogwood but all stems had been browsed to a height of < 0.3 m, likely by Eastern White-tailed Deer (*Odocoileus virginianus*). Due to this lack of woody vegetation along the shoreline, shading was estimated as 0%. With the dense herbaceous and vegetation along the shorelines of James Foley Drain, it is not surprising the channel shows very little erosion and was described as stable.

It was noted that parsnip was evident along the shorelines of three areas associated with former agricultural fields while it was absent southwest of Highway 10 adjacent to active agriculture. Refer to Plate 6 for a view of parsnip growing along the shoreline. This study did not distinguish if it was Common Parsnip or Cow Parsnip, as the plants had died back whereas Aboud & Associates (2017) reported both species are present on-Site. Both parsnip species originate from Europe and can cause negative consequences on wildlife, domestic livestock, and also out-compete native plants (reviewed by Doust and Doust, 1982). For example, direct contact with live plants can result in a burn to skin. Hence, it was very appropriate to conduct the inspections after plant senescence. However, this view also identifies that future activities along sections of James Foley Drain require extreme caution, as staff could burn unprotected skin.

Habitats along the former agricultural fields appeared to be associated with wetland communities within 120 m of the some channels, as reported in ESG (2002). The presence of these wetland communities was evident especially downstream of the bridge at EcoParkway Drive. This presence of extensive wetland plants suggests these areas may support a diverse bird population. This suggestion is likely reasonable, given the large number of Barn Swallow nests associated with the bridge at EcoParkway Drive.

Vegetation associated with the tributary southwest of Highway 10 was densely dominated by Reed Canary Grass, over >90% of the area. This dense grass appears to restrict the erosion of soils from the adjacent agricultural fields and provide habitat for wildlife.

In summary, extensive herbaceous and woody vegetation is evident along the entire James Foley Drain that results in stable shorelines and thereby provides varied benefits to wildlife.





Plate 5: View of slumping shoreline of James Foley Drain downstream of the bridge at Ida Street.



Plate 6: View of dead parsnip growing along shoreline of James Foley Drain. View on left shows the area downstream of the bridge at Ida Street while the view on the right shows the area upstream of the bridge at Ida Street and downslope from the sewage lagoons. The parsnip plants were often > 2 m tall and contact with live specimens can cause burns on skin. Thus, extreme caution should be used when walking along most shorelines on-Site associated with former agricultural fields.



Fish Community Analysis

Fish surveys identified a diverse community of 16 fish species across James Foley Drain. These fish species are commonly collected in small stream habitats, and regarded as typical of headwater areas (Scott and Crossman, 1973). All fish species captured are considered warmwater or coolwater and can complete their life history in these habitats; none of these species require the need for migration to other areas, so they can be considered resident species (Scott and Crossman, 1973). All fish species identified are regarded as native except the Pumpkinseed that previously invaded the Grand River during the early 1900s and Central Stoneroller that invaded during the early 1990s. Given the survey results, it confirms these headwater fishes are maintaining viable populations in these well-vegetated habitats.

The fish community located within Stations 5A, 5B, and 5C were generally consistent with 10 species associated with 5A and 5B and seven at 5C. This consistency is attributable to no barriers to migration along this section of the drain as well as the presence of well vegetated shorelines that create similar habitats along the entire area. Visual inspections of this tributary upstream of 5C, beyond the rail trail, identified similar habitats with water depth > 35 cm and well vegetated shorelines. Although fish surveys were not completed upstream of the rail trail, it is very probable the fish community in this area is comparable to the species observed at station 5C, due to the absence of barriers to migration at the rail trail.

Fish community associated with Stations 6A west of Highway 10 was within shallow water covered by Reed Canary Grass. This coverage by Reed Canary Grass explains why the water was shallow and this acts to limit habitat available to fishes, explaining why the fish community was limited. Netting was conducted in the Soybean field on both sides of the drain channel, and yield fish in these areas. This observation of fish in the fields confirm the fish species are tolerant of degraded habitats and are able to migrate between flooded fields and the drain channel.

Predatory fish species (e.g., Smallmouth Bass, Northern Pike *Esox lucius*) were absent from the survey but reported in past surveys by GRCA and MNR. This absence of predators is not surprising, as they are excellent swimmers and likely avoided the dip nets. However, the late season timing of the survey could have also contributed to the absence of predators. For example, species such as Northern Pike often will migrate to shallow areas to complete spawning and then return to deep habitats (Scott and Crossman, 1972). Thus, young Northern Pike could be in these shallow areas until the water temperatures decline, and then migrate to deeper downstream areas. Hence, if the surveys were done during different seasons and within deeper habitats, it is probable predatory fishes would have been captured in James Foley Drain.

All sections of James Foley Drain that were surveyed in this study support fish populations. The 2017 survey included fish diversity that was greater than reported in the past studies. The side channel with ice cover adjacent to the sewage lagoons had a low number of fish species but also had sediments smelling of hydrogen sulphide, indicating degraded habitats. The presence of fish communities across the entire study area justifies DFO's designation of this drain as sensitive habitat, with timing windows for in-water activity that exclude fish spawning season, as March 15 to July 15, seems appropriate for future in-water activities.



Species At Risk

Inspections of the crossings on James Foley Drain identified active nesting by Barn Swallow on two bridges. This identification of nests confirms active use of nesting habitats by Barn Swallow near water. Given the high number of nests, it is essential to consider Barn Swallow during any future activities that may occur in close proximity to the bridges and near water. However, the bridges with nests are relatively new and unlikely to require maintenance during the near term. In contrast, Aboud and Associates (2017) did not observe Barn Swallow during their surveys.

The inspections confirmed most sections of James Foley Drain can be regarded as possible habitat for Snapping Turtle. This confirmation of the presence of candidate habitat for Snapping Turtle in the drain is consistent with the observation of one Snapping Turtle on-Site during 2015 by Aboud & Associates (2017). By extension, it is appropriate to consider possible disturbance of this turtle during any future activities that may occur in close proximity to water.

This study observed the plant communities within 120 m of James Foley Drain show no uncut, natural areas that are also well drained. The observation of an absence of uncut, drained fields identifies suitable nesting habitat for Bobolink and Eastern Meadowlark likely does not exist in close proximity to the James Foley Drain. Also, the extensive distribution of Red-osier Dogwood in these areas represents another plant that is undesirable to ground-nesting birds such as Bobolink and Eastern Meadowlark. Thus, it is probable that Bobolink and Eastern Meadowlark may be in the general area but are unlikely to be nesting within 120 m of James Foley Drain.

Patches of intermediate-aged forest exist within about 500 m of James Foley Drain. These forest patches represent candidate habitat for Eastern Wood Pewee. Due to the distance between these forest patches and James Foley Drain, it is probable Eastern Wood PeWee could forage near the drain but would nest in the forest patches. By extension, it is expected that any future activities near the drain would result in no direct disturbance of foraging Eastern Wood Pewee.

Aboud and Associates (2017) reported the possible presence of bat (i.e., myotis habitat) near the drain. Preferred habitat for bats varies by species but does include human-built structures and large woody stems. Inspections by Premier identified essentially zero woody stems > 10 cm DBH along James Foley Drain. This identification of large woody stems indicates a near total absence of natural woody stems available for use by bats directly along the channel.



Recommendations on Environmental Management Strategies

Vegetation

This study documented extensive herbaceous and woody vegetation evident along the different sections of the four study areas on-Site. This vegetation creates stable shorelines in most areas and resulted in the maintenance of aquatic habitats with very little sediment. Appropriate recommendations for the future would involve control of Cow and Common Parsnip, as these plants are hazardous and do not provide habitat to wildlife. Another recommendation would be to fence areas along the channel, to exclude deer herbivory, and allow the Red-ossier Dogwood to grow to heights that would provide additional benefits to the channel and aquatic habitats.

Fish Community

This study documented the aquatic habitats across the study areas and 12 stations on-Site support viable fish communities with variable diversity. The most diverse fish community was observed downstream of the bridge at Ida Street while the least diverse was within the side channel that lacks flow. Future land management should contemplate the establishment of vegetation buffers to protect shorelines with a minimum width of 15 m. Wetlands in proximity to the drain may require the establishment of vegetation buffers larger than 15 m.

Observation of fishes across all areas indicate that any future work in these areas needs to adhere to fish timing windows for spawning, where work is restricted from fish spawning season during spring. For Foley Drain, the Class E designation identifies no in-water work from March 15 to July 15 each year. Thus, in-water work needs to be completed between July 16 and March 14 in any given year. This work should also use management methods to reduce disturbance of shoreline vegetation as well as install suitable erosion-sediment control measures.

Species At Risk

Due to existing habitats, risk to SAR is low for Barn Swallow and Snapping Turtle as long as suitable environmental management measures are applied during future activities. Such future measures need to avoid disturbance of existing nesting areas of Barn Swallow. This option should be feasible, as the bridge structures with nests are relatively new and likely will not require maintenance during the foreseeable future. However, if bridge maintenance is required, the proposed activity will require registration via direct communications with MNRF staff. For the Snapping Turtle, future activities near water need to include fences to isolate work areas. Hence, it is expected the application of standard environmental management strategies will be satisfactory to reduce and/or eliminate the risk of disturbance to Snapping Turtle in the future.

Since the plant communities within 120 m of James Foley Drain show no uncut fields dominated by herbaceous plants, there is an absence of suitable nesting habitat for Bobolink and Eastern Meadowlark. Since nesting habitat for these SAR birds is absent, it is unlikely either species uses this area and they can be considered absent.

This study and the recommendations is subject to the Statement of Limitations in Appendix C.



Cited References

1. Aboud & Associates Inc. (Aboud & Associates). 2017. Dundalk Industrial Access Road & Wastewater Treatment Facility Expansion Township of Southgate Schedule B Municipal Class Environmental Assessment Natural Heritage – Existing Conditions. Prepared for Township of Southgate and Triton Engineering Services Limited.
2. Department of Fisheries and Oceans (DFO). 2017. Guidance For Maintaining And Repairing Municipal Drains In Ontario Version 1.0. Effective March 15, 2017. Available at: <https://www.dsao.net/images/Documents/Dart/General/Guidance-for-Maintaining-and-Repairing-Municipal-Drains-in-Ontario-March-7-2017-V1.0.pdf>
3. Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat. Available at: <http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/on-eng.html>
4. Doust, J.L. and L.L. Doust, L.L., 1982. Life-history patterns in British Umbelliferae: a review. *Botanical journal of the Linnean Society*, 85:179-194.
5. ESG International (ESG). 2002. Dundalk Industrial Park Environmental Impact Study. Prepared for Triton Engineering Services Limited, Fergus, ON. Available at: <https://southgate.civicweb.net/document/29918>
6. Fitzgerald, D., E. Kott, R. Lanno, and D. Dixon. 1998. A quarter century of change in the fish communities of three streams modified by anthropogenic stressors. *Journal of Aquatic Ecosystem Stress and Recovery* 6:111-127.
7. Government of Ontario (Ontario). 2007. Endangered Species Act, 2007 – Ontario Regulation 230/08 (last amended O. Reg. 25/13).
8. Holm, E., and E. Crossman. 2001. Updated status of the central stoneroller, *Campostoma anomalum*, in Canada. *Canadian Field-Naturalist.*, 115: 157-167.
9. Land Information Ontario (LIO). 2016. Land Information Ontario Data Description Provincially Tracked Species 1KM. Ontario Ministry of Natural Resources and Forestry, Peterborough, ON.
10. Ontario Stream Assessment Protocol Version 10.0 updated April 2017. Ontario Stream Assessment Protocol. VERSION 10.0. 2017. Available at: <https://trca.ca/wp-content/uploads/2016/02/osap-master-version-10-july1.pdf>
11. Scott, W.B, and E.J. Crossman. *Freshwater Fishes of Canada*. Bulletin 184 of the Fisheries Research Board of Canada. Ottawa, Ontario.



APPENDIX A

REPRESENTATIVE SITE PHOTOGRAPHS



Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE	
Photo No. 1	Date: Nov 2017				
Direction Photo Taken:					
Description: View upstream of Eco Parkway Drive bridge.					

Photo No. 2	Date: Nov 2017				
Direction Photo Taken:					
Description: View downstream of Eco Parkway Drive bridge.					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE
Photo No. 3	Date: Nov 2017			
Direction Photo Taken:				
Description: A minimum of 70 Barn Swallow nests under bridge at Eco Parkway Drive.				

Photo No. 4	Date: Nov 2017			
Direction Photo Taken:				
Description: View about 10 m downstream of EcoParkway Drive bridge.				

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE	
Photo No. 5	Date: Nov 2017				
Direction Photo Taken:					
Description: Channel about 30 m downstream of EcoParkway bridge.					

Photo No. 6	Date: Nov 2017				
Direction Photo Taken:					
Description: View approximately 100 m downstream of EcoParkway Drive bridge.					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE	
Photo No. 7	Date: Nov 2017				
Direction Photo Taken:					
Description: Ecotone from field to Reed Canary Grass about 150 m downstream of Eco Parkway Drive bridge.					

Photo No. 8	Date: Nov 2017				
Direction Photo Taken:					
Description: Braided Channel about 200 m downstream from Eco Parkway Drive bridge.					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No.: 617096.CE	
Photo No.: 9	Date: Nov 2017				
Direction Photo Taken:					
Description: Seine net and dip net used to catch fish. After capture, fish were placed in bins, identified, and then released. Non-native Central Stoneroller were disposed of on land, per guidance from MNRF.					

Photo No.: 10	Date: Nov 2017				
Direction Photo Taken:					
Description: Catching fish with a dip net downstream of Eco Parkway Drive. Note the thick aquatic vegetation evident in the drain.					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE
Photo No. 11	Date: Nov 2017			
Direction Photo Taken:				
Description: Land use around stations 3 and 4, to the east of the sewage lagoons.				

Photo No. 12	Date: Nov 2017			
Direction Photo Taken:				
Description: Looking west toward the berm of a sewage lagoon with Ida Street in far background.				

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE	
Photo No. 13	Date: Nov 2017				
Direction Photo Taken:					
Description: Picture of ice covered pool within side channel. No fish caught here.					

Photo No. 14	Date: Nov 2017				
Direction Photo Taken:					
Description: Station 5 – about 130 m upstream of confluence with tributary of James Foley Drain.					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE	
Photo No. 15	Date: Nov 2017				
Direction Photo Taken:					
Description: Downstream of Ida Street bridge.					

Photo No. 16	Date: Nov 2017				
Direction Photo Taken:					
Description: Upstream of Ida Street bridge.					



Client Name: Triton Engineering		Site Location: Dundalk, Ontario	Project No.: 617096.CE
Photo No.: 17	Date: Nov 2017		
Direction Photo Taken:			
Description: View of erosion along shoreline downstream of Ida Street bridge.			

Photo No.: 18	Date: Nov 2017		
Direction Photo Taken:			
Description: View of erosion along shoreline downstream of Ida Street bridge.			

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE
Photo No. 19	Date: Nov 2017			
Direction Photo Taken:				
Description: View of Parsnip along shoreline downstream of Ida Street bridge.				

Photo No. 20	Date: Nov 2017			
Direction Photo Taken:				
Description: View of Parsnip along shoreline downstream of Ida Street bridge.				

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No.: 617096.CE	
Photo No.: 21	Date: Nov 2017				
Direction Photo Taken:					
Description: View of shoreline downstream of Ida Street bridge showing undercut banks.					

Photo No.: 22	Date: Nov 2017				
Direction Photo Taken:					
Description: View of James Foley Drain about 30 m downstream of Ida Street bridge					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No.: 617096.CE	
Photo No.: 23	Date: Nov 2017				
Direction Photo Taken:					
Description: Pumpkinseed caught downstream of Ida Street bridge.					

Photo No.: 24	Date: Nov 2017				
Direction Photo Taken:					
Description: Central Mud Minnow caught downstream of Ida Street bridge					

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No.: 617096.CE	
Photo No.: 25	Date: Nov 2017				
Direction Photo Taken:					
Description: Common Shiner caught downstream of Ida Street bridge					

Photo No.: 26	Date: Nov 2017				
Direction Photo Taken:					
Description: View of shoreline about 50 m downstream of Ida Street bridge					


Client Name: Triton Engineering		Site Location: Dundalk, Ontario	Project No.: 617096.CE
Photo No.: 27	Date: Nov 2017		
Direction Photo Taken:			
Description: View of Parsnip along shoreline downstream of Ida Street bridge			

Photo No.: 28	Date: Nov 2017		
Direction Photo Taken:			
Description: View of confluence of ditch with James Foley Drain about 15 m upstream from the Ida Street bridge.			

Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No.: 617096.CE
Photo No.: 29	Date: Nov 2017			
Direction Photo Taken:				
Description: View about 100 m upstream of Ida Street bridge with only tree taller than 1 m in area visible on left side.				

Photo No.: 30	Date: Nov 2017			
Direction Photo Taken:				
Description: View of about 150 m upstream of Ida Street bridge, at Station 2.				



Client Name: Triton Engineering		Site Location: Dundalk, Ontario		Project No. 617096.CE
Photo No. 31	Date: Nov 2017			
Direction Photo Taken:				
Description: View of Central Stoneroller about 150 m upstream of bridge at Ida Street.				

Photo No. 32	Date: Nov 2017			
Direction Photo Taken:				
Description: View of Creek chub.				

Client Name: Triton Engineering		Site Location: Dundalk, Ontario	Project No.: 617096.CE
Photo No.: 33	Date: Nov 2017		
Direction Photo Taken:			
Description: View of Striped Shiner from top showing scale pattern used to distinguish this species from Common Shiner.			

Photo No.: 34	Date: Nov 2017		
Direction Photo Taken:			
Description: View of Parsnip along shoreline downstream of Eco Parkway Drive bridge and upstream of Ida Street bridge.			

Client Name: Triton Engineering		Site Location: Dundalk, Ontario	Project No.: 617096.CE
Photo No.: 35	Date: Nov 2017		
Direction Photo Taken:			
Description: Channel at Station 6, west of Highway 10			

Photo No.: 36	Date: Nov 2017		
Direction Photo Taken:			
Description: Channel at station 6, west of Highway 10			

Client Name: Triton Engineering		Site Location: Dundalk, Ontario	Project No.: 617096.CE
Photo No.: 37	Date: Nov 2017		
Direction Photo Taken:			
Description: Farm field adjacent to Station 6, west of Highway 10			

Photo No.: 38	Date: Nov 2017		
Direction Photo Taken:			
Description: Farm field flooded adjacent to station 6, west of Highway 10.			

APPENDIX B

LICENCE TO COLLECT FISH FOR SCIENTIFIC PURPOSES



**Ministry of Natural
Resources and Forestry**

Owen Sound Field Office
1450 7th Ave East
Owen Sound, ON N4K 2Z1
Tel: 519-376-3860
Fax: 519-372-3305

**Ministère des Richesse
naturelles et des Forêts**

Bureau du secteur
d'Owen Sound
1450 ave 7 est
Owen Sound, ON N4K 2Z1
Tél: 519-376-3860
Télé: 519-372-3305



October 24, 2017

Premier Environmental Services Inc.
244 Montrose Street North, Unit 1 Upper
Cambridge, ON
N3H 2H7

Attention: Drew Fitzgerald
Subject: Licence to Collect Fish for Scientific Purposes #1088318

Dear Mr. Fitzgerald:

Please find enclosed your Licence to Collect Fish for Scientific Purposes as requested. Please sign and date the Licence and the Conditions page(s) immediately upon receipt and fax (519) 372-3305 or scan/email to shari.haak@ontario.ca a signed copy of the Licence and Conditions.

As per condition # 5, mandatory report forms documenting the sampling conducted under this licence must be submitted to the licence issuer within 30 days of the termination date, but in no case later than January 31 next following the year of issue. **Condition # 5 now requires you to submit the Mandatory Report (Part 1), the Site Collection Reports (Part 2) and site maps electronically by email to kathy.dodge@ontario.ca via Enterprise Attachment Transfer Services (EATS).** Both the electronic report form and instructions on how to use and complete the electronic report form are attached in this e-mail for your use. The electronic report form attached includes Part 1 and Part 2 which also includes a tool to embed (or electronically attach) a map to the collection record (Part 2). Please ensure you use the form attached.

If you have any questions, please feel free to give me a call at (519) 371-6525.

Yours truly,

Shari Haak
Resources Clerk
Owen Sound Field Office



Ontario

Ministry of Natural Resources

Ministère des Richesses naturelles

Licence to Collect Fish for Scientific Purposes

Permis pour faire la collecte de poissons à des fins scientifiques

Licence No. N° de permis	1088318
Local Reference No. N° de référence local	MH2017-3564
Issuer Account No. N° de compte de délivreur de permis	10003100

This licence is issued under Part I of the Fish Licensing Regulation made under the Fish and Wildlife Conservation Act, 1997 to:

Ce permis est délivré en vertu de la Partie I du règlement sur la délivrance de permis de pêche formulé conformément à la Loi sur la protection du poisson et de la faune de 1997 à:

Name of Licencee Nom du titulaire du permis	Last Name / Nom de famille Mr. Fitzgerald	First Name / Prénom Dean	Middle Name / Second Prénom G
Name of Business/Organization/Affiliation (if applicable) / Nom de l'entreprise/de l'organisme/de l'affiliation (le cas échéant) Premier Environmental Services Inc.			
Mailing address of Licencee Adresse postale du titulaire du permis	Street Name & No./PO Box/Rue/Cen. Del./N° sur C.P./R.R./poste restante 244 Montrose Street North		
	City/Town/Municipality / Ville/village/municipalité Cambridge	Province/State Province/État ON	Postal Code/Zip Code Code Postal/Zip N3H2H7

to collect the species, size and quantities of fish from the waters as set out below.
Pour faire la collecte des espèces suivantes (stade et nombre indiqués ci-dessous):

Species Espèces	Eggs Oeuf X	Juvenile Frein X	Adults Adulte X	Numbers Nombre	Name of Waterbody Nom de l'étendue d'eau
All Species Present		X	X		Foley Drain, Dundalk, Geographic township of Proton, Grey County as described in Schedule A.

Yes/Oui Additional species/Waterbody list attached / Liste d'espèces/d'étendue d'eau additionnelles ci-jointe

Purpose of collection
But de la collecte
Fisheries assessment to support the Dundalk Industrial Access Road Ontario Municipal Class
Environmental Assessment.

Licence Dates Dates du permis	Effective Date / Date d'entrée en vigueur (YYYY-MM-DD) 2017-10-23	Expiry Date / Date d'expiration (YYYY-MM-DD) 2017-11-17
---	---	---

Licence conditions This licence is subject to the conditions contained in Schedule A if included. / Ce permis doit respecter les conditions de l'annexe A si celle-ci est jointe.

Conditions du permis Yes/Oui No/Non Schedule A included. / Annexe A ci-jointe

Issued by (please print) Délivré par (veuillez écrire en caractères d'imprimerie)	Signature of issuer / Signature du délivreur 	Date of issue / Date de délivrance (YYYY-MM-DD) 2017-10-24
--	--	--

Signature of Licencee / Signature du titulaire du permis 	Date (YYYY-MM-DD) 2017-10-24
--	------------------------------------

Personal information contained on this form is collected under the authority of the Fish and Wildlife Conservation Act, 1997 and will be used for the purpose of licensing, identification, enforcement, resource management and customer service surveys. Please direct further inquiries to the District Manager of the MNR issuing district.

Les renseignements personnels dans ce formulaire sont recueillis conformément à la Loi sur la protection du poisson et de la faune, 1997, et ils seront utilisés aux fins de délivrance de permis, d'identification, d'application des règlements, de gestion des ressources et de sondage sur les services à la clientèle. Veuillez communiquer avec le chef du district du MRN qui délivre le permis si vous avez des questions.

APPENDIX C

STATEMENT OF LIMITATIONS

Statement of Limitations

For this study, the information, conclusions and recommendations given herein are specifically for Triton Engineering Limited (the Client) only and for the scope of work described herein for the tributaries of James Foley Drain in Dundalk, Ontario. The scope of work involves environmental screening for constraints based on a focal field inspection completed on November 15, 2017. Hence, the findings from study may not be sufficient for other uses. Premier Environmental Services Inc. does not accept responsibility for this or other uses by third parties.

The data, conclusions and recommendations included within this report, and the quality thereof, are based on the scope authorized by the Client. Note however, that no scope of work, no matter how exhaustive, can identify all environmental constraints, environmental contaminants or all conditions above and below ground that may exist. For example, environmental observations may differ across survey dates. Hence, conditions may differ from those encountered in the investigation. Similarly, flood zone features may vary dramatically from year to year even when the site in question is not mapped as flood plain by government agencies. This report therefore cannot warrant that all conditions on or off the site are presented by those identified at specific locations on the focal inspection date. Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions. In fact, many aspects involving professional judgment such as habitat available for Species At Risk, potential for Species At Risk to migrate to the site in question, and follow up study recommendations inherently contain a degree of uncertainty that cannot be eliminated. This uncertainty should be managed by periodic review and refinement as additional information becomes available.

Note also that standards, guidelines and practice related to environmental investigations may change with time. Those which are applied at the time of this investigation may be obsolete or unacceptable at a later date. The scope of work and findings reported may not be sufficient to determine all of the factors that may affect construction or other on site activities. Contractors bidding on future aspects of this undertaking should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work. Similarly, Premier cannot warranty the accuracy of information supplied by the Client regarding the legal boundaries of the respective sites. Our interpretation is based on the maps provided at the start of the study.



Appendix C - Assimilative Capacity Study



Township of Southgate Dundalk

Foley Drain Assimilative Capacity Study

April 30, 2021



Triton Engineering Services Limited



Huber Environmental Consulting

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B: 2020 Reserve Capacity Calculations

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Introduction

The community of Dundalk is located in the Township of Southgate in Grey County. It is also located in the head waters of the Grand River that originates in the Dundalk highlands. The existing Dundalk wastewater treatment facility (WWTF) was commissioned in the early 1970's. The Dundalk WWTF has an average day flow (ADF) rated capacity of 1,832 m³/day. Reserve capacity calculations for the facility indicate that the potential for new development will be limited in the near future due to a lack of treatment capacity. As a result, the Township of Southgate requires additional reserve capacity at the Dundalk WWTF to accommodate future growth in this community.

Background

Dundalk Wastewater Treatment Facility

The Dundalk WWTF is located at 752051 Ida Street South and generally consists of a raw sewage pumping station (SPS), four (4) facultative lagoons with a total surface area of 14.65 hectares, a post aeration cell and filtration. Alum is added to the process at the SPS and prior to filtration to assist with solids and phosphorus removal. Raw sewage is pumped to lagoon cell #1 from the SPS and wastewater typically flows through the four cells in series. The wastewater is aerated prior to filtration to prevent the formation of hydrogen sulfide and assist with oxidation of the carbonaceous and nitrogenous components of the wastewater. The facility is permitted to discharge year-round. The lagoons provide a hydraulic retention of approximately 114 days at the existing rated flows and thus have the capacity to stop discharging when necessary if the effluent isn't up to design standards or increase the effluent discharge rate as necessary, contingent on filter performance. The receiving stream is the Foley Drain which is a tributary of the Grand River. Figure 1 shows the locations of the Dundalk WWTF, Foley Drain and Grand River.

The ADF capacity of the existing WWTF is 1,832 m³/day. The Environmental Compliance Approval (ECA) for the existing facility is included in Appendix A of this report. The existing effluent criteria are provided in Table 1: Dundalk WWTF Existing ECA Effluent Criteria at 1,832 m³/day.

The 75th percentile and average effluent parameter concentrations for the Dundalk WWTF for the years 2016 to 2020 inclusive are summarized in Table 2. The 25th percentile for Dissolved Oxygen (DO) is included in the table because low values are potentially more impactful for this parameter.

As shown by the following table, the existing Dundalk wastewater treatment facility produces a very high-quality effluent for a lagoon-based system. Typical parameters of concern related to effluent discharges from wastewater treatment plants with only minor inflows from industrial sources include; dissolved oxygen (DO), total phosphorus (TP), biochemical oxygen demand (BOD), total suspended solids (TSS), bacteria (E. coli), total ammonia nitrogen (TAN) and un-ionized ammonia. Both an Effluent Objective Concentration and an Effluent Limit are identified on the Environmental Compliance Approval (ECA). The Effluent Objective is the value that the treatment facility tries to achieve on a routine basis while the Effluent Limit is a value they must achieve or else they are in a noncompliance mode and potentially can be charged.

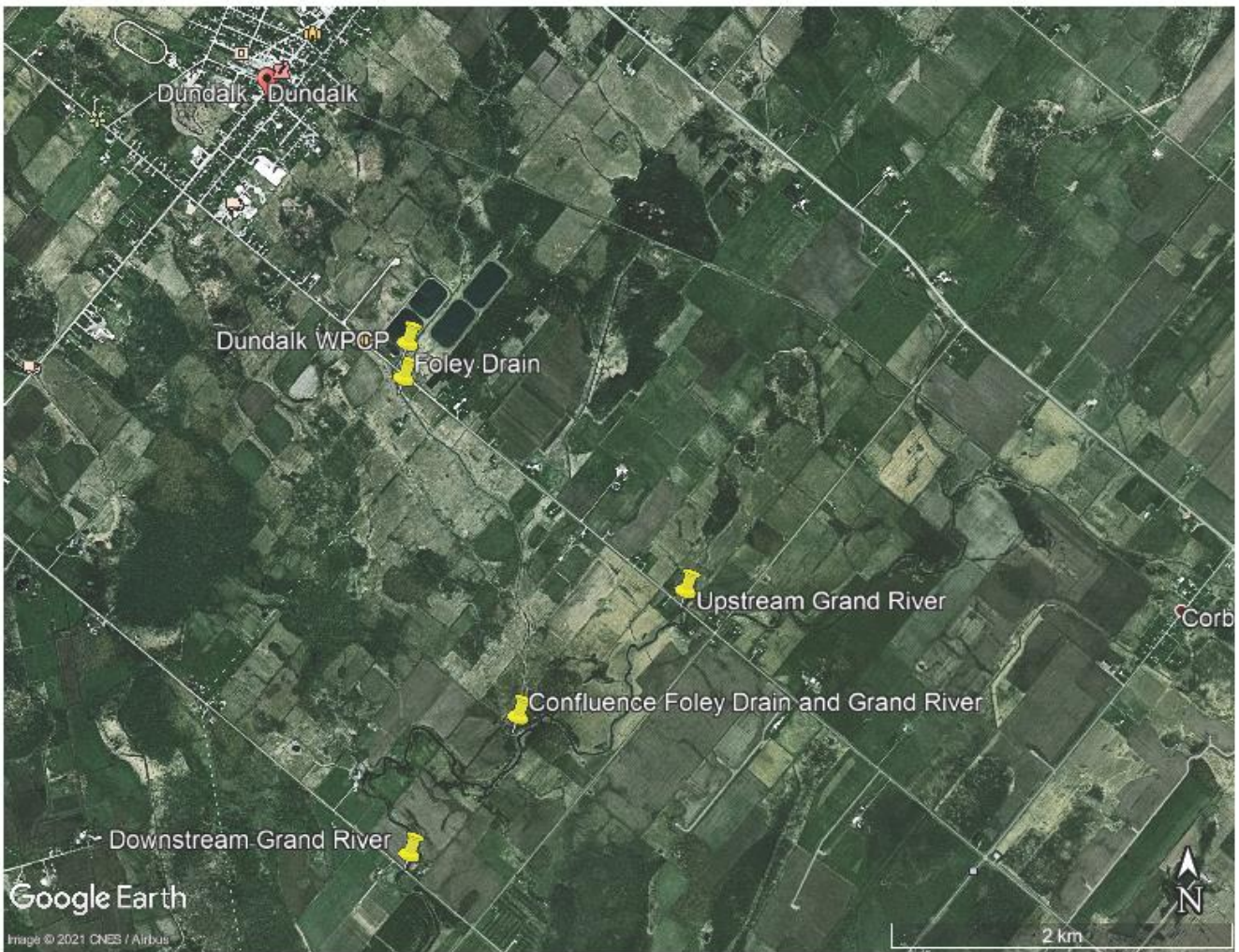


Figure 1 showing location of the Dundalk WWTF, the Foley Drain and the Grand River

Table 1: Dundalk WWTF Existing ECA Effluent Criteria at 1,832 m³/day.

Parameter	Effluent Objective Concentration (mg/L)	Effluent Limit Concentration (mg/L)	Monthly Average Loading (kg/d)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	10	18.32
Total Suspended Solids (TSS)	5	10	18.32
Total Phosphorus (TP)			
Temperature > 5°C	0.3	0.4	0.73
Temperature < 5°C	0.6	0.8	1.47
Dissolved Oxygen (DO)	5.0	4.0	Not Applicable
Un-Ionized Ammonia (NH ₃ -N)	0.05	0.10	Not Applicable
pH	6.5 to 8.5	6.0 to 9.0	Not Applicable

Note: Effluent Objectives and Limits are based on a Monthly Average Concentration other than the Unionized Ammonia Limit and pH which are based on a single sample.

Table 2: Dundalk WWTF Summarized Existing Historical Effluent Quality (2016 to 2020)

Parameter	TSS (mg/L)		Un-ionized Ammonia (mg/L)		TAN (mg/L)		DO (mg/L)		cBOD ₅ (mg/L)		TP (mg/L)		E. coli (CFU/100 mL)	
Month														
Statistic	75 th	Avg	75 th	Avg	75 th	Avg.	25 th	Avg	75 th	Avg	75 th	Avg.	75 th	Geo Mean
Jan	7.0	5.2	0.020	0.017	8.7	5.3	11.6	12.8	3.8	3.4	0.083	0.103	165	106
Feb	10.0	7.6	0.045	0.033	11.6	8.9	10.6	11.6	8.0	6.5	0.100	0.199	1720	1114
Mar	12.8	10.4	0.075	0.049	7.7	7.5	10.4	11.7	11.3	8.6	0.298	0.313	1833	687
Apr	16.0	12.6	0.070	0.050	8.3	6.1	9.2	10.9	9.0	7.4	0.355	0.264	14	15
May	6.0	5.6	0.030	0.017	2.4	1.2	7.7	8.7	5.0	4.2	0.090	0.060	4	5
Jun	10.0	6.3	0.017	0.014	0.1	0.1	6.1	6.6	5.5	4.4	0.115	0.101	2	4
Jul	5.8	4.3	0.015	0.016	0.2	0.3	5.9	6.9	4.8	3.8	0.225	0.173	2	2
Aug	5.0	4.4	0.002	0.002	0.1	0.1	7.0	7.6	3.0	3.2	0.120	0.083	70	30
Sep	4.0	3.2	0.002	0.001	0.3	0.2	7.3	8.1	3.0	2.4	0.060	0.072	30	18
Oct	3.0	2.7	0.001	0.002	0.4	0.3	9.2	10.4	3.0	2.5	0.085	0.065	59	51
Nov	5.0	3.6	0.022	0.015	2.7	1.9	12.8	13.8	3.0	2.4	0.060	0.048	3	4
Dec	7.3	5.3	0.046	0.027	6.8	3.8	13.9	14.3	3.0	2.7	0.070	0.050	2	7
Objective	5		0.05		NV		5		5		0.3 – 0.6		NV	
Limit	10		0.10		NV		4		10		0.4 – 0.8		NV	

Note: Values exceeding the Objective and Limit are highlighted in yellow and red respectively.

Table 3: Dundalk WWTF ECA Exceedances for the period shown

		cBOD ₅ (mg/L)	TSS (mg/L)	TP (mg/L)	Un-ionized Ammonia (mg/L)	DO (mg/L)	pH	No. of Days Discharging	Months of Discharge	Discharge Volume (m ³)
Objective		5	5	0.3 - 0.4	* 0.05	>5	* 6.5 - 8.5			
Limit		10	10	0.6 - 0.8	* 0.1	> 4	* 6.0 - 9.0			
2020	Months>Obj.	0	2	0	4	0	* 4/90	215.5	9	396,688
	Months >Limit	0	0	0	* 5/85	0	* 4/90			
2019	Months>Obj.	2	4	3	1	0	* 11/104	310	12	407,659
	Months >Limit	2	2	1	* 1/105	0	* 4/104			
2018	Months>Obj.	6	6	0	2	1	* 0/102	298.7	12	404,858
	Months >Limit	1	3	0	* 1/100	1	* 0/102			
2017	Months>Obj.	1	2	0	2	0	* 6/98	342	12	420,598
	Months >Limit	0	0	0	* 4/108	0	* 6/98			
2016	Months>Obj.	0	2	0	1	0	* 4/82	307	11	334,685
	Months >Limit	0	0	0	* 1/91	0	* 2/82			

* individual sample criteria

Note: Values exceeding the Objective and Limit are highlighted in yellow and red respectively.

Dissolved Oxygen

Dundalk's ECA identifies a Dissolved Oxygen monthly average Effluent Objective of 5.0 mg/L and a monthly average Effluent Limit of 4.0 mg/L. These values are minimums and not maximums like all the other parameters identified on the ECA. Reviewing the 2016 – 20 effluent quality monitoring data shows that the monthly average Effluent Objective was never exceeded let alone the Effluent Limit reached in any month. The existing treatment configuration has aeration prior to the filtration facility thus giving the capability of adjusting the effluent dissolved oxygen levels which ensures no hydrogen sulphide odour or toxicity from undissociated hydrogen sulphide is ever detected in the discharge from this facility.

Total Phosphorus

The Total Phosphorus Objective and Limit is based on the temperature of the water. This is because phosphorus is a nutrient that promotes plant growth under warmer water conditions which can result in instream diurnal dissolved oxygen and pH fluctuations. The Total Phosphorus monthly average Effluent Objective is 0.3 mg/L when the water temperature is above 5 °C and 0.6 mg/L when the water temperature is below 5 °C. The monthly average Effluent Limits are 0.4 mg/L when the water temperature is above 5 °C and 0.8 mg/L when the water temperature is less than 5 °C. As shown in Table 3 above over the last 5 years, the Dundalk facility exceeded the Objective for Total Phosphorus for 3 months and exceeded the Effluent Limit once in 2019. These all occurred under cold water temperatures which reduces the effectiveness of the alum additions. There were no exceedances to the phosphorus limits in 2020.

Total Ammonia Nitrogen

Total Ammonia Nitrogen (TAN) is also a nutrient like phosphorus that can promote plant growth. Total ammonia nitrogen consists of ionized ammonia and un-ionized ammonia. The degree to which form the total ammonia is present in is water pH and temperature dependent. However, what makes this nutrient different than total phosphorus is that the un-ionized form of total ammonia nitrogen can be toxic to aquatic life. That is the reason why an un-ionized ammonia criterion was placed on the effluent ECA. The ECA identifies an un-ionized ammonia Effluent Objective of 0.05 mg/L and a single sample Effluent Limit of 0.10 mg/L. As shown by the monitoring data, there has been a number of exceedances of the monthly average objective and exceedances of the single sample objective over the past 5 years. These occurred mainly as a result of the elevated pH probably caused by an algal bloom in the actual lagoon treatment cells.

Carbonaceous Biochemical Oxygen Demand

A Carbonaceous Biochemical Oxygen Demand (cBOD₅) Effluent Limit and Effluent Objective have also been placed on Dundalk's existing Wastewater Treatment Facility. The established monthly average cBOD₅ Effluent Objective is 5 mg/L while the monthly average Effluent Limit is 10 mg/L. cBOD₅ is a parameter of concern because it has the potential to remove dissolved oxygen from the water. The effluent monitoring data shows that the monthly average Effluent Objective was exceeded a number of times during the winter months when the water is colder and even exceeded the monthly average Effluent Limit twice in 2019 and once in 2018 again under cold water conditions. Cold water temperature reduces settling rates. The reason for including cBOD₅ compliance limits is so that the dissolved oxygen levels in the receiving stream do not become seriously depressed as a result of the biological oxidation of any residual organics left in the effluent. During cold water temperatures higher levels of oxygen can be dissolved in the water and thus there is less likelihood of any chance of an impact. Also, it must be remembered that the cBOD₅ test is done at a standard temperature of 20 °C which is not representative of the biological reduction/activity occurring in the stream when the water temperature is 5 °C or less. As stated previously, there have been no violations of the Dissolved Oxygen Objective or Limits which supports the statement about lack of impact of cBOD₅ under cold water temperatures.

Total Suspended Solids

The Total Suspended Solids (TSS) monthly average Effluent Objective is 5 mg/L while the monthly average Effluent Limit is 10 mg/L. Reviewing the 2016 to 2020 effluent sampling revealed a number of Effluent Objective and Effluent Limit exceedances also mainly during the cold weather periods. When you observe increases in TSS in an effluent you typically also see an increase in cBOD₅ and Total Phosphorus which are

attached in or on the particles. Under cold water temperatures the chemical fluctuant has a much slower reaction time and thus can be a much less effective coagulant.

pH

The ECA also states an Effluent Objective of 6.5 to 8.5 pH units and gives an Effluent Limit of 6.0 to 9.0 pH units and states they are for all times. This would infer that they are single sample criteria and not monthly averages. These limits are place to minimize unionized ammonia toxicity because the higher the pH the greater the proportion of the total ammonia that is in the unionized ammonia phase. The effluent monitoring data demonstrates that this facility has only exceeded the maximum allowable pH a number of times each year. pH fluctuations caused by algal blooms are very difficult to control.

Additional Information

It is worth noting that in any occurrence that an exceedance is distinguished during effluent monitoring, the facility discharge is stopped and effluent is held until testing shows that the effluent limits will be in compliance. However, there is typically a delay between when a sample is taken and the results are available. As such, the Township has been working with the Triton Engineering, Grand River Conservation Authority (GRCA) and the MECP in order to reduce the time between a when a non-compliant effluent sample is taken and stopping the effluent discharge.

The Bishop Water Technologies Bio Cord pilot project which had operated for a number of years at Dundalk WWTF, continued and although generating favorable testing results to Bishop's satisfaction, the Township was not necessarily seeing improvements on the final effluent parameters criteria and in consultation with Bishop a decision was made to decommission the project in September 2019. It was determined that short circuiting of wastewater could be a factor for improvement of the technology.

The Township released a Request for Information (RFI) in June 2019 for upgrades to the Dundalk sewage works to increase rated capacity and meet effluent quality parameters in the future. There were 10 proposals submitted which were reviewed by staff from Triton Engineering, the Grand River Conservation Authority (GRCA) and Township. There were 2 technology proposals that are being investigated further, 1 a Submerged Attached Growth Reactor (SAGR) and the other being a Moving Bed Biofilm Reactor (MBBR) with polishing filter systems.

Through the Grand River Conservation Authority Wastewater Optimization program, the Township has been doing research and demonstration programs in an attempt to have the Dundalk WWTF meet their existing ECA criteria continuously. The 2019 Grand River Conservation Authority Optimization special studies included:

- Filter Bed Expansion Special Study
- Filter Visual Backwash Observation Special Study
- The Influence of Seasonal Changes in Temperature on Lagoon Performance
- Dundalk Lagoons – Proactive Operational Monitoring
- Dundalk Lagoons Filters Capacity and Performance Evaluation
- Filter Optimization Special Study

Population and Growth Projections

The current 2020 population serviced by the municipal wastewater system in Dundalk is estimated at 2,774 or 1,067 equivalent residential units (ERUs). The December 2015 Grey County growth study indicates that approximately 370 more new residential homes will be constructed to the year 2036. However, it is anticipated that this is below the anticipated actual growth. Given the current interest in development for the community, it is anticipated that the serviced ERUs will continue to grow at approximately 150 ERUs for the next 5 years (2020-2025) and 120 ERUs for the following 20 years (2026 – 2045).

The 2021 reserve capacity calculation included in Appendix B indicates that the existing population is generating an average day flow of 1,127 m³/day (2018, 2019 and 2020 average) resulting in a per capita flow rate of 406 L/person/day which is within the Ministry of Environment, Conservation and Parks (MECP)

guideline of 250 to 450 L/person/day. However, this is above expected rates for a community of this size, particularly one that has a water metering program. In October 2020, the Township and Triton Engineering completed an Infiltration and Inflow Monitoring Program that indicated the flows produced are impacted by significant infiltration and inflow (I/I). The Township is working towards reducing I/I in the system. In 2013, the Township completed a rehabilitation program on the maintenance holes in the system and in 2016 completed smoke testing to identify possible illegal connections to the system and deficiencies with the sewer pipes. Furthermore, all subdivision agreements for new development require flow monitoring of new sewers to ensure that new systems are meeting the MOECC I/I guideline allowance of 0.15 L/Ha/s or less. In addition, the Township municipal servicing standards require the waterproofing of maintenance holes to limit I/I and videos of all new sewers to identify I/I or deficiencies which may lead to the same in the future.

In conjunction with the I/I monitoring program and changes to servicing standards and construction technics, the sanitary flow of a new development was monitored to establish a typical per person flow rate for within new developments. Using modern construction techniques; in conjunction with storm services for sump pump discharges, new developments should not be inundated with the same extraneous flows as existing infrastructure in the town of Dundalk. The sanitary sewer flow monitoring was implemented to determine what typical flow rate should be applied to new developments. The results of this flow monitoring determined that the per person flow rate within a new development was approximately 70L/capita/day. However, as indicated in the MOE Guidelines, the minimum flow rate allowance per person should be not less than 250L/capita/day. As these values will be utilized for future Reserve Capacity calculations, a factor of safety was applied, resulting in a recommended New Development Per Person Flow rate of **350L/capita/day**.

Based on the above, the Dundalk WWTF will require a revised average day flow rating of **3,025m³/day** by the year 2035 and **4,200m³/day** by the year **2045**.

Physiography

Dundalk is located in the *Dundalk Till Plain* physiographic unit. The Dundalk Till Plain comprises an area of 2,396 square kilometers of gently undulating till plain in Dufferin, Grey and Wellington counties. This till plain is generally located north of County Road 109 and is a major headwater area for the Grand, Saugeen, Maitland and Nottawasaga Rivers. It includes most of Dufferin County and portions of the Townships of Wellington North and Mapleton.

The till plain consists of a mix of clay, gravel, and boulders deposited by retreating glaciers. Elevations within the till plain range from 425 meters above sea level (m asl) to 530 m asl and in spite of its elevation drainage is slow. The till plain supports extensive wetland complexes, wet meadows, and agricultural land in four major source areas: Dundalk, Melancthon, Amaranth, and Keldon. There is an extensive network of agricultural drains and small watercourses which link the numerous wetlands that drain the till plain. Two large eskers and a series of small drumlins, which are located at the northwest boundary of the watershed, add considerable diversity to the habitat of the till plain. The western esker runs through the Keldon Swamp southeasterly to the north bog at Luther Marsh Wildlife Management Area. Luther Marsh is a 5,679 ha complex of bog, marsh, mixed deciduous-coniferous swamp, upland deciduous forest, plantation, meadow and agricultural fields. The Luther Dam has created a lake wetland area of about 2,000 ha. The well-vegetated Horseshoe Moraine and Niagara Escarpment physiographic regions border the till plain on its east side. There is a noticeable transition from scarce natural vegetative cover along the west side of the till plain to extensive cover in the east. In comparison with other parts of Ontario, the Dundalk Till plain has a rather severe landscape with some resemblances to the plains of Saskatchewan. The forests were almost completely cleared and few farmers planted many trees about their homesteads.

Climate

Dundalk features a humid continental climate (four distinct seasons and large seasonal temperature differences) of the warm-summer variety given its high elevation (529 meters) and inland location. The town often sees cold, snowy winters and warm, sometimes humid, summers. Due to its position downwind of Lake Huron, Dundalk is in the traditional lake-effect snowbelt region of Southern Ontario, an area that can see up to 300 centimeters of snow in a year. As such, the transition months of spring and fall, especially the latter, are short due to late season snowfalls that can occur as early as late October and as late as May.

Precipitation is usually distributed throughout the year. The nearest Environment Canada weather station with Climatic Norms is Proton Station for the years 1981-2010.

The Dundalk plain has the coolest and shortest growing season of any farming area in southern Ontario, consequently many crops which are commonly found in other areas cannot be grown. On the other hand, it is preferred over the warmer, drier climates for potatoes. For the most part the soils are a little too heavy and high in lime for this crop along with either too stony or poorly drained. However, potatoes have become an important specialty crop where there is well-drained, silty soil.

The original vegetation of the better drained areas was a hardwood association of maples, beech and some birch while swamp forests containing elm, ash, cedar and tamarack probably occupied a larger area. Although usually classed as a mixed hardwood forest section, the altitude of this region had sufficient effect to bring into both upland and lowland forests a sprinkling of northern species. White and black spruce, white pine, tamarack, balsam fir, alder, white birch, aspen and willows are fairly common.

Table 4: Proton Station Climate Norm (1981 to 2010)

Temperature												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Daily Average (°C)	-8.3	-7.4	-3.4	4.5	10.8	15.5	17.8	17.1	12.9	7.1	0.9	-5.0
Standard Deviation	3.0	2.6	2.0	1.6	2.1	1.4	1.2	1.3	1.0	1.3	1.7	3.0
Daily Maximum(°C)	-4.4	-3.2	1.3	9.3	16.5	21.2	23.5	22.7	18.1	11.5	4.2	-1.6
Daily Minimum (°C)	-12.1	-11.6	-8.0	-0.5	5.2	9.8	12.1	11.4	7.8	2.7	-2.4	-8.3
Precipitation												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	24.6	24.0	35.0	59.0	89.3	93.5	77.9	91.9	104.2	86.7	71.3	28.1
Snowfall (cm)	83.1	60.3	44.2	13.1	0.5	0.0	0.0	0.0	0.2	5.6	39.7	74.1
Precipitation (mm)	107.8	84.3	79.2	72.1	89.8	93.5	77.9	91.9	104.4	92.3	110.9	102.1
Extreme Maximum	12.0	14.0	21.5	27.5	30.0	31.5	32.5	33.5	30.6	26.1	23.0	17.0

Note: Proton station is approximately 8.5 km away from Dundalk in a northwest direction.

Water Uses

The upper Grand River and its many un-named streams serve to drain nearly all of the swampy uplands around Dundalk and Grand Valley. The upper reaches with these streams intermingle with those of the Saugeen and Nottawasaga Rivers, the divides between them being indistinct, often consisting of a sprawling swamp from which drainage goes in two directions. The till plains in the head water regions permit only limited infiltration of precipitation and generate high quantities of surface run-off. Stream flows in this area are typically high in the spring and low in the summer.

According to the Ministry of Environment and Climate Change Permit to Take Water (PTTW) map, there is no surface water PTTW's in the Dundalk vicinity. The closest surface water PTTW's are issued to Ducks Unlimited much further downstream near Luther Marsh for wetland recreational purposes. It is surprising that no PTTW are shown for the GRCA allowing them to regulate streamflow from the Luther Marsh and the Belwood Reservoir. There are 3 groundwater locations shown for PTTW 3051-B3MLLX issued to the Corporation of the Township of Southgate for their municipal water supply and another short-term groundwater permit for construction dewatering issued to a numbered company.

All properties (agricultural, residential, commercial etc.) outside of the Dundalk municipal water service boundaries use private wells as their domestic water supply.

Land Use

Existing land use around Dundalk is approximately 66% agricultural, 3% urban, 4% treed and 28% wetlands. Land use in this sub basin is primarily agriculture; however, it is less intense relative to other sub basins further downstream. Agriculture is mixed with the dominant crops being 'other field crops' (40%) and grains (30%) as defined in the 2009 Census of Agriculture. Very little land area is tile drained (1.4%). Densities for poultry, swine and cattle are 1.98, 0.3 and 0.26 animals/ha, respectively, which are comparably low to other sub basins in the Grand River watershed. However, 'other livestock' (mainly horses, goats etc.) production is the highest in the upper Grand River when compared to other sub basins (0.23 animals/ha).

Table 5: Land Cover as a Percentage in the Upper Grand River Sub basin

	Agricultural (%)	Urban (%)	Treed Land (%)	Wetland (%)
Upper Grand River (headwaters to Leggatt)	66	3	4	28
Lower-Upper Grand River (Leggatt to Shand Dam)	75	3	5	17
Overall	71	3	4	22

Hydrology - Upper Grand River

The Grand River is the largest river that is entirely within southern Ontario's boundaries. The river owes its size to the unusual fact that its source is relatively close to the base of the Bruce Peninsula, yet it flows southwards to Lake Erie, rather than to central Lake Huron or Georgian Bay (most southern Ontario rivers flow into the nearest Great Lake, which is why most of them are small), thus giving it more distance to take in more water from tributaries. The importance of the watershed has been recognized by the designation of the Grand as a Canadian Heritage River.

The Grand starts in the Dufferin Highlands northeast of Dundalk at an elevation of 525 meters (1,722 feet) above sea level. It flows south about 280 kilometers (174 miles) to Lake Erie at Port Maitland, which is about 174 meters (571 feet) above sea level. The total drainage area of the watershed is approximately 6,965 square kilometers. Agricultural and rural land uses predominate the upper and lower watershed with urban land uses being concentrated in the central portion where most of the basins' nearly 1 million residents live.

Rating curves are used to estimate stream flow from measured water levels. The quality of the gauge control affects the accuracy of the flow versus level relationship. A gauge with a stable gauge control (cross section)

that isn't subject to backwater from weed growth or subject to shifts due to erosion or deposition of sediment can be expected to produce accuracies within 5% similar to the flow measurement.

The Federal Stream Gauge 02GA041 (Grand River near Dundalk) was installed to collect continuous water level information and thus streamflow at this headwater location in 1984. This gauge had operated continuously to 2000 and then was shut down until 2006. The gauge was restarted up again in 2006 and has continued to be operated continuously as part of the Federal Hydrometric Program in cooperation with the Grand River Conservation Authority (GRCA) and the Province of Ontario. This section of the Grand River drains the surrounding swampy upland area and has an upstream drainage area of 66.49 km².

As stated previously, the Foley Drain is the receiver of the treated wastewater discharge from Dundalk lagoon facility. The Foley Drain is a tributary of the Grand River. The total drainage area of the Foley Drain upstream of the confluence with the Grand River is approximately 16.11 km² while the drainage area upstream of the Dundalk effluent discharge point is 10.54 km². These drainage areas were determined using the Ministry of Natural Resources and Forestry, Ontario Flow Assessment Tools III. The federal gauge (02GA041) is located on Ida Street/2nd Line, approximately 1 concession upstream of the confluence with the Foley Drain.

The following Tables show the measured monthly average streamflow at the Federal gauge from 1984 to 2000 and 2006 to 2014 which were then pro-rated on a straight drainage area approach to the Grand River immediately below the confluence of the Foley Drain and Grand River, to the Foley Drain just upstream of the confluence with the Grand River and on the Foley Drain immediately upstream of the Lagoon Discharge location. As shown on these tables, summer streamflow can get very low.

Another technique to estimate low streamflow is by the use of the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III. This program has access to the various government data bases representing soil types and cover, precipitation, land uses, drainage patterns, physical features along with all the streamflow information and stream gauging station locations. These layers of information are then used by the program to estimate various streams (high or low) at selected user identified locations.

Table 6 presents the results of the Ontario Flow Assessment Tools III at a number of identified locations on the Grand River and the Foley Drain. Results of both statistical Low Flow estimating techniques used by the program are shown.

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Table 6: Pro-rate stream flows from Federal Streamflow Gauge 02GA041 on the Grand River (based on 03/04/2021 data download from WSC site)

Month	Mean Monthly Flows(m ³ /s)			
	Grand River		Foley Drain	
	at Federal Gauge 02GA041 1984-2019	Below Confluence Grand River & Foley Drain	U/S Lagoon Discharge	Confluence Foley Drain & Grand River
Jan	1.43	1.806	0.226	0.346
Feb	1.47	1.857	0.232	0.356
Mar	3.01	3.802	0.475	0.729
Apr	2.645	3.341	0.418	0.640
May	0.747	0.944	0.118	0.181
Jun	0.411	0.519	0.065	0.100
Jul	0.194	0.245	0.031	0.047
Aug	0.150	0.189	0.024	0.036
Sep	0.303	0.383	0.048	0.073
Oct	0.426	0.538	0.067	0.103
Nov	1.12	1.415	0.177	0.271
Dec	1.12	1.415	0.177	0.271

Month	Median Monthly Flows (m ³ /s)			
	Grand River		Foley Drain	
	at Federal Gauge 02GA041 1984-2019	Below Confluence Grand River & Foley Drain	U/S Lagoon Discharge	at Federal Gauge 02GA041 1984-2019
Jan	1.04	1.314	0.164	0.252
Feb	1.01	1.276	0.159	0.245
Mar	3.26	4.118	0.515	0.789
Apr	2.38	3.006	0.376	0.576
May	0.607	0.767	0.096	0.147
Jun	0.231	0.292	0.036	0.056
Jul	0.057	0.072	0.009	0.014
Aug	0.034	0.043	0.005	0.008
Sep	0.036	0.045	0.006	0.009
Oct	0.244	0.308	0.039	0.059
Nov	1.05	1.326	0.166	0.254
Dec	0.891	1.125	0.141	0.216

-Continued on next page-

Month	Lower Quartile Monthly Flows (m ³ /s)			
	Grand River at Federal Gauge 02GA041 1984-2019	Below Confluence Grand River & Foley Drain	Foley Drain U/S Lagoon Discharge	Foley Drain at Federal Gauge 02GA041 1984-2019
Jan	0.637	0.805	0.101	0.154
Feb	0.257	0.325	0.041	0.062
Mar	1.68	2.122	0.265	0.407
Apr	1.38	1.743	0.218	0.334
May	0.277	0.350	0.044	0.067
Jun	0.115	0.145	0.018	0.028
Jul	0.035	0.044	0.006	0.008
Aug	0.018	0.023	0.003	0.004
Sep	0.021	0.027	0.003	0.005
Oct	0.046	0.058	0.007	0.011
Nov	0.594	0.750	0.094	0.144
Dec	0.408	0.515	0.064	0.099

Month	Minimum Monthly Flows (m ³ /s)			
	Grand River at Federal Gauge 02GA041 1984-2019	Below Confluence Grand River & Foley Drain	Foley Drain U/S Lagoon Discharge	Foley Drain at Federal Gauge 02GA041 1984-2019
Jan	0.114	0.144	0.018	0.028
Feb	0.056	0.071	0.009	0.014
Mar	0.229	0.289	0.036	0.055
Apr	0.443	0.560	0.070	0.107
May	0.130	0.164	0.021	0.031
Jun	0.047	0.059	0.007	0.011
Jul	0.017	0.021	0.003	0.004
Aug	0.008	0.010	0.001	0.002
Sep	0.007	0.009	0.001	0.002
Oct	0.014	0.018	0.002	0.003
Nov	0.026	0.033	0.004	0.006
Dec	0.086	0.109	0.014	0.021

Table 7: Statistical Estimates of Low Streamflow for the identified locations on the Grand River and Foley Drain (Calculated using the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III (downloaded 3/10/21))

Foley Drain at Lagoon Discharge					Drainage Area: 11.1 km²		
					Mean Annual Flow: 0.13 m³/s		
	Flow*	m³/s	Flow*	m³/s		Flow*	m³/s
Low Flow Graphical Index Method	7Q2	0.06	30Q2	0.08	Low Flow Regression Method	7Q2	0.34
	7Q5	0.04	30Q5	0.06		7Q20	0.18
	7Q10	0.03	30Q10	0.05		30Q2	0.44
	7Q20	0.02	30Q20	0.04		30Q20	0.25

*Outside of model development range because of small basin size

Foley Drain at Confluence with Grand River					Drainage Area: 16.8 km²		
					Mean Annual Flow: 0.20 m³/s		
	Flow	m³/s	Flow	m³/s		Flow	m³/s
Low Flow Graphical Index Method	7Q2	0.06	30Q2	0.09	Low Flow Regression Method	7Q2	0.34
	7Q5	0.04	30Q5	0.06		7Q20	0.18
	7Q10	0.03	30Q10	0.05		30Q2	0.44
	7Q20	0.03	30Q20	0.05		30Q20	0.22

Grand River at Federal Gauge 02GA041					Drainage Area: 67.9 km²		
					Mean Annual Flow: 0.80 m³/s		
	Flow	m³/s	Flow	m³/s		Flow	m³/s
Low Flow Graphical Index Method	7Q2	0.12	30Q2	0.17	Low Flow Regression Method	7Q2	0.36
	7Q5	0.07	30Q5	0.11		7Q20	0.20
	7Q10	0.06	30Q10	0.10		30Q2	0.47
	7Q20	0.05	30Q20	0.09		30Q20	0.26

Grand River at Confluence U/S Foley Drain					Drainage Area: 69.4 km²		
					Mean Annual Flow: 0.81 m³/s		
	Flow	m³/s	Flow	m³/s		Flow	m³/s
Low Flow Graphical Index Method	7Q2	0.12	30Q2	0.17	Low Flow Regression Method	7Q2	0.36
	7Q5	0.07	30Q5	0.12		7Q20	0.19
	7Q10	0.06	30Q10	0.10		30Q2	0.46
	7Q20	0.05	30Q20	0.09		30Q20	0.25

Grand River Below Confluence with Foley Drain					Drainage Area: 86.20 km²		
					Mean Annual Flow: 1.01 m³/s		
	Flow	m³/s	Flow	m³/s		Flow	m³/s
Low Flow Graphical Index Method	7Q2	0.14	30Q2	0.19	Low Flow Regression Method	7Q2	0.36
	7Q5	0.09	30Q5	0.13		7Q20	0.19
	7Q10	0.07	30Q10	0.11		30Q2	0.47
	7Q20	0.06	30Q20	0.10		30Q20	0.25

The following table now compares results of the two different approaches of calculating Mean Annual Streamflow at the locations of interest on the Foley Drain and Grand River.

Table 8: Comparison of Predicted Mean Annual Streamflow at Select Locations on the Grand River and Foley Drain

	Grand River		Foley Drain	
	at Federal Gauge 02GA041 1984-2014	Below Confluence Grand River & Foley Drain	U/S Drain at Lagoon Discharge	U/S Confluence Foley Drain & Grand River
Prorating* (m ³ /s)	1.075	1.364	0.176	0.266
Ontario Flow Assessment Tools III (m ³ /s)	0.80	1.01	0.13	0.20

* based on data downloaded from WSC website 3/10/2021

It would appear that the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III approach is a more conservative approach. Both techniques predict that there is year-round streamflow in the Foley Drain at the effluent discharge location even under extreme low streamflow. This is highly likely that this is the case based on the extensive growths of watercress readily observed upstream of the wastewater treatment discharge. Watercress is an aquatic plant known to grow in cool spring water and used to identify groundwater seepage areas along watercourses.

The Ministries publication “Deriving Receiving-Water Based Point Source Effluent Requirements for Ontario Waters, 1974” states that for continuous point source discharge, the low flow statistic 7Q20 is used as the basic design flow for the receiving stream. 7Q20 flows are considered a worst-case low flow statistic which is a 7-day average low flow value with a return period of 20 years.

The Low Flow Graphical Index Method was developed by Cummings Cockburn for the Ministry of the Environment and Energy in 1995 and is strongly correlated to drainage area. A relationship was developed for all stream gauges in the Southwestern and West Central Regions between 7Q2 low flow and drainage area. A series of graphs were then generated basically assuming the same contribution of base flow per square kilometer of drainage area throughout these two regions. The graphs are now routinely updated by the Ministry of Natural Resources using measured streamflow at the appropriate stream gauges to keep the technique relevant.

Table 9: Comparison of calculated 7Q20 streamflow for select locations on the Grand River and Foley Drain generated using the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III.

Location	Low Flow Graphical Index Method 7Q20 Flow (m ³ /s)	Low Flow Regression Method (m ³ /s)
Foley Drain at Lagoon Discharge ¹	0.02	0.18
Foley Drain at Confluence with Grand River	0.03	0.18
Grand River at Federal Gauge 02GA041	0.05	0.20
Grand River at Confluence with Foley Drain	0.05	0.19
Grand River Below Confluence with Foley Drain	0.06	0.19

¹ Outside of model development range because of small basin size

The Low Flow Regression Method was also developed by Cummings Cockburn for the Ministry of the Environment and Energy in 1995. For this technique, a multiple regression equation was developed using drainage area, the base flow index for the specific area, length of main channel, mean annual runoff for the area, mean annual snow in the specific area etc. The input parameters are routinely updated by the Ministry of Natural Resources using measured streamflow, precipitation etc. at the appropriate stream gauges to keep the technique relevant. Since this approach includes more variables, one would expect it to be more accurate or correct.

Now checking these values against the lower quartile mean monthly streamflow recorded at the Federal gauge, would suggest both these approaches are given high numbers or else there is an issue with the rating curve at the Federal gauge. The lower quartile of the monthly mean streamflow for July, August, September and October are all lower than the predicted 7Q20 streamflow using the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III.

Because of the variation in estimates of the calculated low streamflow, the individual daily streamflow was reviewed for the period of record. It was discovered that for 16 of the 35-year period that the gauge was located at this location, 6 years of data was missing or only had part of a year of data and 10 years had over a month's worth of estimated streamflow. In fact, 9 of the 14 lowest minimum 7-day annual streamflow were recorded for years that had more than 30 values of estimated daily streamflow. Further, 4 of the 5 lowest annual 7-day streamflow were included in that group making any low flow statics questionable.

As a result of this observation, the minimum 7-day average flow was calculated for each year of record, sorted, ranked and their probabilities of recurrence plotted on Gumbel probability paper. The following Table 8, summarizes the calculated 7Q10 and 7Q20 streamflow using different combinations of the annual 7-day minimum annual streamflow reported at federal gauge 02GA041 on the Grand River near Dundalk.

Table 10: Comparison of 7Q10 and 7Q20 streamflow calculated for gauge 02GA041 Grand River near Dundalk (using different combinations of annual 7-day minimum reported streamflow.)

Data Set	7Q10 (m³/s)	7Q20 (m³/s)
Full data set 1985 - 2015	0.006	0.003
Full data set with less than 30 days of estimated daily streamflow or missing days	0.009	0.008

Now these predicted 7Q10 and 7Q20 streamflow are vastly different than was calculated by the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III software. Their software predicted a 7Q10 streamflow of 0.056 m³/s and a 7Q20 streamflow of 0.048 m³/s using the graphical approach and a 7Q20 streamflow of 0.201 m³/s using a regression equation approach for the same location. In general, streamflow that were an order of magnitude higher.

To help determine which set of 7Q20 streamflow values are probably correct, a mass balancing approach using chlorides was completed. Chloride is considered a conservative parameter and is not impacted by settling, biological activity etc. and only changes concentration as a result of dilution or concentration. Now taking the average measured concentration at the upstream monitoring station times a streamflow and the average measured concentration in Foley Drain below the lagoon discharge times its flow equals the concentration measured downstream times the total of the two flows.

$$C3 = (C1 \times a) + (C2 \times b) / (a + b)$$

Where C1 = average chloride concentration measured upstream in the Grand River (26.0 mg/L)
 C2 = average chloride concentration in the Foley Drain below lagoon discharge (80.0 mg/L)
 C3 = average chloride concentration in the Grand River below the Foley Drain (28.8 mg/L)

a = streamflow at the upstream station on the Grand River
 b = streamflow in the Foley Drain below the lagoon discharge
 set b = 1

This calculation shows that there was an average dilution of 18.3 parts Grand River flow to 1 part Foley Drain flow over the August 2015 to March 2016 water quality monitoring period.

Instead of using average values over the monitoring period, specific information for each individual sampling date was then used to evaluate measured chloride concentrations versus streamflow to obtain an impression of the quality of the low end of the rating curve. Also estimated streamflow had to be adjusted because of actual downstream sampling location was 1 concession further downstream. The following equation was used to calculate streamflow at Riverview.

$$F1 = [C1 \times (F4 \times (101.9/66.49))] + [C3 \times (\text{effluent flow} + (F4 \times (10.54/66.49)))] + [C2 \times (F3 - (F2 + F5))] / C4$$

Where

- F1 calculated total streamflow at Riverview
- C1 measured chloride concentration at upstream Federal gauge on Grand River
- C2 measured upstream chloride concentration in the Foley Drain
- C3 measured chloride concentration in the Foley Drain below effluent discharge
- C4 measured chloride concentration in the Grand River at Riverview
- F2 estimated upstream flow in Foley Drain above effluent discharge based on drainage area of 10.54 km²
- F3 estimated total flow in Foley Drain above confluence with the Grand River based on drainage area of 16.11 km²
- F4 measured streamflow at the Federal gauge on the Grand River (66.49 km²)
- F5 effluent discharge flow

Table 11 presents the results of this exercise showing that the Federal streamflow gauge on the Grand River near Dundalk appears to read low for the bottom end of the rating curve along with the GRCA gauge at Riverview reading low based on the chloride measurements. It would appear that the Federal gauge reads between 60 and 100% low during the summer extreme low flows but not bad during the spring and higher flows. As a result, summer/fall streamflow of less than 0.050 m³/s at this stream gauge must be used with caution.

Looking at the reported streamflow for this Grand River stream gauge, August and September are the months with the lowest mean monthly streamflow. In fact, looking at the preliminary water level and resultant streamflow data at this gauge for September 9 to 12th 2015, it shows the water level was below the established datum from 12:00 noon on September 9th to 3:00AM on September 12th. This resulted in the preliminary streamflow being reported as 0.000 during this time period. Then for these same dates when downloading the full daily corrected data set, it shows an average daily streamflow of 0.437 m³/s for September 9th, 0.453 m³/s for September 10th, 0.204 m³/s for September 11th and 0.128 m³/s for September 12th 2015. They did not even include a qualifier “estimated” for this period of data the way they had for other previous years. These types of shifts bring all of the low streamflow records into serious question for this gauge.

Table 11a: Comparison to Measured Streamflow on the Grand River and Mass Balancing based on Chloride Concentrations

Sample Date	Federal Gauge Flow	Chloride at Federal Gauge	Foley Drain Flow	Chloride U/S of Effluent Discharge	Flow U/S of Effluent Discharge	Effluent Flow	Chloride D/S of Effluent Discharge	Riverview Flow (Estimated)	Chloride at Riverview	Chloride at Riverview (Calculated)	GRCA Gauge Flow	Riverview Flow (Calculated based on Chloride)
Unit	m ³ /s	mg/L	m ³ /s	mg/L	m ³ /s	m ³ /s	mg/L	m ³ /s	mg/L	mg/L	m ³ /s	m ³ /s
14-Aug-15	0.055	29	0.013		0.009	0.006		0.084	28		0.094	
18-Aug-15	0.041	31	0.010		0.007	0.006		0.063	33		0.070	
25-Aug-15	0.049	34	0.012		0.008	0.006		0.075	35		0.084	
03-Sep-15	0.035	36	0.008		0.006	0.005		0.054	32		0.042	
09-Sep-15	0.437	24	0.106		0.069	0.005		0.670	30		0.255	
17-Sep-15	0.037	30	0.009		0.006	ND		0.057	28		0.056	
24-Sep-15	0.018	61	0.004	34	0.003	0.005	110	0.028	29	71.6	0.053	0.075
02-Oct-15	0.016	38	0.004	49	0.003	0.011	120	0.025	33	69.7	0.026	0.059
07-Oct-15	0.014	35	0.003	49	0.002	0.011	130	0.021	37	74.2	0.041	0.051
13-Oct-15	0.018	36	0.004	62	0.003	0.011	130	0.028	45	70.8	0.054	0.046
22-Oct-15	0.026	30	0.006	71	0.004	0.011	110	0.040	59	55.6	0.070	0.035
26-Oct-15	0.041	30	0.010	67	0.007	0.011	96	0.063	47	47.4	0.107	0.059
21-Jan-16	0.593	18	0.144	37	0.094	0.016	71	0.909	22	25.3	3.294	1.038
28-Jan-16	0.808	16	0.196	65	0.128	0.016	70	1.239	25	24.8	3.410	1.205
03-Feb-16	7.788	16	1.887	49	1.238	0.017	55	11.939	16	21.9	18.742	16.302
09-Feb-16	1.411	16	0.342	39	0.224	0.017	49	2.163	18	20.9	2.650	2.494
17-Feb-16	0.426	18	0.103	43	0.068	0.017	77	0.653	23	26.8	0.858	0.749
23-Feb-16	1.606	15	0.389	36	0.255	0.017	44	2.462	17	19.3	3.772	2.781
10-Mar-16	11.551	7.9	2.799	23	1.837	0.017	29	17.708	10	10.9	25.415	19.327
14-Mar-16	4.939	10	1.197	30	0.785	0.017	34	7.571	12	13.6	5.759	8.571
Drainage Area(km²)	66.49		16.11		10.54			101.9				

Table 11b: Summary of Table 11a: Comparison of Gauges

Sample Date	Federal Gauge Flow	GRCA Gauge Flow	Riverview Flow (Calculated based on Chloride)	Federal Gauge Flow (Calculated based on Drainage Area)	Flow Ratio (Calculated Federal vs. Measured)	Flow Ratio (Calculated vs. GRCA Gauge)	Drainage Area Calculated Flow Riverview	Flow Ratio (Calculated Drainage Area Flow vs. GRCA Gauge)	Flow Ratio (GRCA River vs. Federal Gauge)
Unit	m ³ /s	m ³ /s	m ³ /s	m ³ /s			m ³ /s		
14-Aug-15	0.055	0.094							1.59
18-Aug-15	0.041	0.070							1.56
25-Aug-15	0.049	0.084							1.60
03-Sep-15	0.035	0.042							1.06
09-Sep-15	0.437	0.255							0.57
17-Sep-15	0.037	0.056							1.51
24-Sep-15	0.018	0.053	0.075	0.044	2.4	1.4	0.033	0.61	2.67
02-Oct-15	0.016	0.026	0.059	0.027	1.7	2.3	0.036	1.36	0.94
07-Oct-15	0.014	0.041	0.051	0.022	1.6	1.2	0.032	0.78	2.18
13-Oct-15	0.018	0.054	0.046	0.019	1.0	0.9	0.039	0.72	2.37
22-Oct-15	0.026	0.070	0.035	0.012	0.4	0.5	0.051	0.72	2.28
26-Oct-15	0.041	0.107	0.059	0.027	0.7	0.5	0.074	0.69	2.34
21-Jan-16	0.593	3.294	1.038	0.661	1.1	0.3	0.925	0.28	5.53
28-Jan-16	0.808	3.410	1.205	0.770	1.0	0.4	1.254	0.37	4.20
03-Feb-16	7.788	18.742	16.302	10.617	1.4	0.9	11.953	0.64	2.40
09-Feb-16	1.411	2.650	2.494	1.610	1.1	0.9	2.179	0.82	1.87
17-Feb-16	0.426	0.858	0.749	0.471	1.1	0.9	0.670	0.78	1.97
23-Feb-16	1.606	3.772	2.781	1.797	1.1	0.7	2.478	0.66	2.34
10-Mar-16	11.551	25.415	19.327	12.590	1.1	0.8	17.720	0.70	2.20
14-Mar-16	4.939	5.759	8.571	5.574	1.1	1.5	7.586	1.32	1.16

As a further check of actual streamflow for those dates, the stream gauge operated by the GRCA at Riverview was reviewed. This gauge is downstream of the confluence of the Foley Drain and the Grand River and at the second concession below the Federal gauge. The recorded average daily streamflow at this gauge for September 9th was 0.2550 m³/s, September 10th was 1.1541 m³/s, September 11th was 0.3509 m³/s and September 12th was 0.1924 m³/s. The drainage area at the Riverview gauge is approximately 101.9 km² versus at the federal gauge near Dundalk with a 66.5 km² drainage area. The Riverview gauge also includes the treated discharge from the Dundalk wastewater treatment facility.

Assuming that the contribution to streamflow is constant throughout this area, the GRCA Riverview gauge should read 101.9/66.5 or approximately 1.5 times the WSC gauge near Dundalk if no treated wastewater was discharged from the Dundalk wastewater treatment facility. During September of 2015, the treatment facility only discharged for 18 days a total of 7,133 m³. That equates to an average discharge flow of less than 0.005 m³/s over the days of discharge in September.

Table 12: Comparison of Measured to Calculated Streamflow at Riverview for Select Dates in September of 2015.

Date	Federal Gauge Flow (m ³ /s)	Theoretical Increase in Drainage Area (ha)	Effluent Flow (m ³ /s)	Calculated Streamflow at Riverview (m ³ /s)	Measured Streamflow at Riverview (m ³ /s)	Ratio
9 th	0.437	0.656	0.005	0.661	0.255	0.39
10 th	0.453	0.680	ND	0.680	1.154	1.70
11 th	0.204	0.306	ND	0.306	0.351	1.15
12 th	0.128	0.192	ND	0.192	0.192	1.00

This exercise shows the relationship to be all over the place when comparing calculated and measured streamflow on the Grand River at Riverview especially on the first 2 days. The Federal gauge near Dundalk has a very narrow and shallow thalweg compared to the dam structure at Riverview. Algae, aquatic plants or even fallen tree leaves could throw off the Federal gauge water level measurement compared to the broad crested weir at the Riverview dam used to backwater up. Possibly using only 4 data points is too short of a timeframe to compare estimated and measured streamflow, so the same approach was taken for the complete month of September 2015. The effluent flow from the wastewater treatment works was only added in on the 18 days that is discharged in September. The ratio of the two daily streamflow at Riverview varied from 0.39 to 1.7 on those 4 days.

To take this line of thought one step further, the same approach was used but for the complete month of September 2015. Table 13 presents the information comparing the two locations suggesting that the Federal Gauge 02GA041 Grand River near Dundalk reads low on the low end of the rating curve. On average during this month the Federal Gauge was reading 1.21 lower than the GRCA gauge.

Table 13: Comparison of Predicted Streamflow at Riverview
(Based on Drainage Area Compared to Recorded at the GRCA Streamflow Gauge)

Sample Date	WSC Dundalk Gauge	1.5x Dundalk Gauge	Sept. Effluent Flow	Predicted Flow at Riverview	Measured Flow at Riverview (GRCA)	Ratio	Precipitation ¹
Unit	m ³ /s	m ³ /s	m ³ /s	m ³ /s	m ³ /s	Ratio	mm
01-Sep-15	0.036	0.054	0.005	0.059	0.052	0.880	M
02-Sep-15	0.035	0.053	0.005	0.058	0.042	0.7	0.0
03-Sep-15	0.035	0.053	0.005	0.058	0.042	0.7	M
04-Sep-15	0.033	0.050	0.005	0.055	0.052	1.0	0.0
05-Sep-15	0.033	0.050	0.005	0.055	0.049	0.9	0.0
06-Sep-15	0.035	0.053	0.005	0.058	0.042	0.7	0.0
07-Sep-15	0.034	0.051	0.005	0.056	0.073	1.3	0.0
08-Sep-15	0.033	0.050	0.005	0.055	0.078	1.4	12.7
09-Sep-15	0.437	0.656	0.005	0.661	0.255	0.4	20.4
10-Sep-15	0.453	0.680	ND	0.680	1.154	1.7	0.2
11-Sep-15	0.204	0.306	ND	0.306	0.351	1.2	0.0
12-Sep-15	0.128	0.192	ND	0.192	0.192	1.0	M
13-Sep-15	0.091	0.137	ND	0.137	0.149	1.1	0.0
14-Sep-15	0.071	0.107	ND	0.107	0.124	1.2	M
15-Sep-15	0.055	0.083	ND	0.083	0.107	1.3	0.0
16-Sep-15	0.043	0.065	ND	0.065	0.099	1.5	0.0
17-Sep-15	0.037	0.056	ND	0.056	0.081	1.5	0.0
18-Sep-15	0.033	0.050	ND	0.050	0.067	1.4	2.8
19-Sep-15	0.029	0.044	ND	0.044	0.058	1.3	6.5
20-Sep-15	0.031	0.047	ND	0.047	0.058	1.3	0.2
21-Sep-15	0.027	0.041	ND	0.041	0.058	1.4	0.0
22-Sep-15	0.023	0.035	0.005	0.040	0.059	1.5	0.0
23-Sep-15	0.020	0.030	0.005	0.035	0.055	1.6	0.0
24-Sep-15	0.018	0.027	0.005	0.032	0.053	1.6	0.0
25-Sep-15	0.018	0.027	0.005	0.032	0.042	1.3	0.0
26-Sep-15	0.016	0.024	0.005	0.029	0.046	1.6	0.0
27-Sep-15	0.017	0.026	0.005	0.031	0.041	1.4	0.0
28-Sep-15	0.016	0.024	0.005	0.029	0.031	1.1	0.0
29-Sep-15	0.015	0.023	0.005	0.028	0.031	1.1	0.0
30-Sep-15	0.014	0.021	0.005	0.026	0.036	1.4	0.0

¹ As measured at Mount Forest Weather Station

This table shows a range of between 39% and 170% difference in reading between the two gauges when adjusted for differences in drainage area. The average difference is 1.21 while the median difference is 1.30.

As stated earlier, The Ministries publication “Deriving Receiving-Water Based Point Source Effluent Requirements for Ontario Waters, 1974” states that for continuous point source discharge, the low flow statistic 7Q20 is used as the basic design flow for the receiving stream. 7Q20 flows are considered a worst-case low flow statistic which is a 7-day average low flow value with a return period of 20 years.

However, Dundalk is not required to discharge continuously because they have storage capacity in their lagoons to store during periods when their discharge does not meet their discharge criteria. Also, the Foley Drain has been historically considered part of the mixing zone and the discharge must only meet the different Ministry Water Quality Policies identified in the “Blue Book” below the confluence with the Grand River. This approach allows for the treated effluent to provide flow augmentation for the lower reaches of the Grand River similar to the various downstream dams operated by the Grand River Conservation Authority.

The existing daily rated capacity of the Dundalk WWTF is 1,832 m³/day which results in a theoretical continuous discharge of 0.021 m³/s which is greater than the estimated 7Q20 streamflow at the discharge location in the Foley Drain or at Federal Streamflow Gauge 02GA041 immediately upstream on the Grand River of the confluence with the Foley Drain.

Based on the identified concerns with the accuracy of both these gauges at the very low ends, it is recommended that we use the more restrictive of the two approaches contained within the Ministry of Natural Resources and Forestry Ontario Flow Assessment Tools III. The graphical approach determined a 7Q20 streamflow below the confluence of the Grand River and Foley Drain of 0.056 m³/s while the regression equation determined a value of 0.201 m³/s. To determine potential water quality impacts from an expansion of the Dundalk Wastewater Treatment Facility the value of **0.056 m³/s** (4,838 m³/day) will now be used for any dilution calculations.

Water Chemistry

Provincial Water Quality Objectives

The MOECC Water Management Provincial Water Quality Objectives (PWQO), commonly called the Blue Book, outlines surface water quality objectives that need to be maintained and/or lowered when additional discharge to a surface water receiver (river, stream, lake, etc.) is proposed. The surface water quality management goal is “to ensure that the surface waters of the province are of a quality which is satisfactory for aquatic life and recreation”. The Blue Book has a number of distinct policies for the discharge of non-hazardous substances into natural receiving streams depending on the receiver’s background water quality. They are as follows:

- Policy 1: In areas which have water quality better than the PWQO, water quality shall be maintained at or above the Objectives
- Policy 2: Water quality which presently does not meet the PWQO shall not be degraded further and all practical measures shall be taken to upgrade the water quality to the Objectives.
- Policy 3: Prevent the release, in any concentration, of hazardous substances that have been banned.
- Policy 4: Ensure that special measures are taken on a case-by-case basis to minimize the release of hazardous substances that have not been banned.
- Policy 5: Mixing zones should be as small as possible and not interfere with beneficial uses. Mixing zones are not to be used as an alternative to reasonable and practical treatment.

In relation to mixing zones, conditions within an identified mixing zone must not result in acutely toxic conditions or irreparable environmental damage including risk to ecosystem integrity and human health nor interfere with water supply, recreation or other water uses. Previous waste assimilation studies below Dundalk with MOECC concurrence have considered the Foley Drain between the effluent discharge and its confluence with the Grand River to be a mixing zone. This reach of the Foley Drain is less than a concession in length prior to mixing with the Grand River.

Parameters of concern related to effluent discharges from wastewater treatment plants typically include dissolved oxygen (DO), total phosphorus (TP), biochemical oxygen demand (BOD), total suspended solids

(TSS), bacteria (*E. coli*), total ammonia nitrogen (TAN) and un-ionized ammonia. The MOECC requires an evaluation of available historical data to assess whether the receiver is classified as Policy 1 or 2. The seventy-fifth percentile (75th percentile) is calculated for all these parameters except for DO where the twenty-fifth percentile (25th percentile) is used to ensure that near worst case concentrations are considered in evaluating the background water quality condition.

Background water chemistry data for the Foley Drain and Grand River was assessed using data collected from August 2015 to March 2016 by the Grand River Conservation Authority. The parameters that they sampled for were the nutrients (4 nitrogen and 2 phosphorus), suspended solids, chlorides and BOD5 on the Foley Drain samples. Water quality data from 1997 and 1998 is also presented for a comparison purpose. Table 12 summarizes the 2015-6 water chemistry data collected from 2 upstream stations on the Foley Drain, a downstream station below the effluent discharge into the Foley Drain, upstream on the Grand River and five downstream locations shown in Figure 2. The water chemistry data for the individual stations are provided in the Appendix.

Phosphorus & Nitrogen

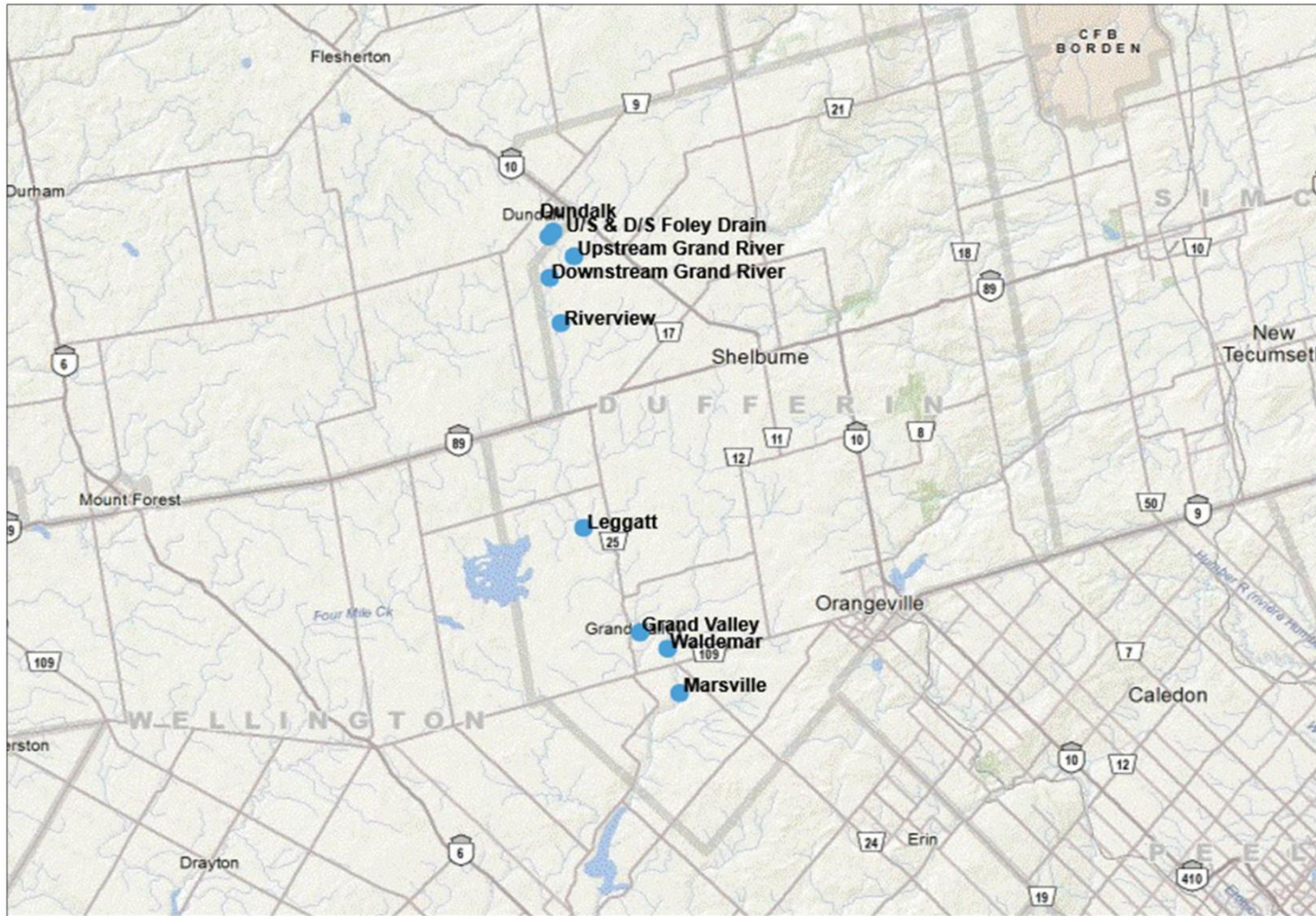
Based on this near year-round sampling, the water quality data collected for the Grand River documents the high quality of the water. Looking specifically at the nutrients (nitrogen and phosphorus) and comparing the average of 20 samples from August to March, the total phosphorus concentration upstream to downstream of the confluence with the Foley Drain in the Grand River went from 0.024 mg/L to 0.023 mg/L. The major concern about total phosphorus concentrations in a river or stream are not directly related to toxicity but relate to the potential for excessive plant growths causing wide diurnal dissolved oxygen and pH fluctuations instream, aesthetic concerns and rotting of the biomass when it dies. The Provincial Water Quality Objective (PWQO) for total phosphorus in rivers is 0.03 mg/L. Even using the 75% values for the water samples collected upstream and downstream of the Foley Drain in the Grand River of 0.024 mg/L and 0.031 mg/L suggest that this reach of the upper Grand River would be considered a Policy 1 receiver for phosphorus. Looking specifically at the total phosphorus concentrations in the Foley Drain upstream of the treated wastewater discharge, the average concentration was 0.020 mg/l and the 75th percentile was 0.021 mg/L. The average total phosphorus concentration in the Foley Drain downstream after mixing with the treated wastewater was 0.034 mg/L while the 75th percentile concentration was 0.044 mg/L. It should be noted that an unnamed tributary is another potential source of phosphorus that comes in between the upstream and downstream Foley Drain sampling stations receiving the effluent discharge. A spike at this unnamed tributary station had the highest total phosphorus concentration (0.230 mg/L) measured in the whole study but on average and even looking at the 75th percentile concentration, this tributary would be considered a Policy 1 watercourse.

Based on this round of sampling, the total phosphorus concentration in the Upper Grand River increased as it continued to flow downstream. The 75th percentile total phosphorus concentration increased to 0.038 mg/L at Leggett, 0.040 mg/L at Grand Valley before dropping back to 0.032 mg/L at Waldemar and 0.033 at Marsville. The Grand River would be considered Policy 2 for total phosphorus at all these downstream reaches.



Water Chemistry Sampling Stations

Notes:



Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport | Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head | Trail
- Railway | Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids | Falls
- Rapids
- Rocks
- Lock Gate
- Dam | Hydro Wall
- Dam | Hydro Wall
- Provincial | State Boundary
- International Boundary
- Upper Tier | District
- Municipal Boundary
- Lower Tier | Single Tier
- Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 21.1 km

Projection: Web Mercator



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Figure 2: Water Chemistry Sampling Locations on the Upper Grand River.

The compounds of nitrogen in water that are of most interest is total ammonia nitrogen (TAN), total Kjeldahl nitrogen, nitrite and/or nitrate. Unionized ammonia which is a component of total ammonia nitrogen can be toxic to most forms of aquatic life while total Kjeldahl nitrogen is a measure of the potential for dissolved oxygen to be removed from the water. Nitrite is the partially oxidized state of nitrogen that can also be toxic (but is rarely toxic because of its unstable state) while nitrate is the full oxidized state. Nitrogen is a fertilizer like phosphorus and aquatic plants can use nitrogen in either ammonia, nitrite and/or nitrate form to promote excessive growth. The only form of nitrogen that has a PWQO is unionized ammonia. TAN consists of both ionized and unionized ammonia forms of ammonia. The relationship between the amount present in either form is both temperature and pH dependent. The unionized ammonia PQWO is set at 0.020 mg/L (NH₃) to protect all forms of aquatic life.

Unionized Ammonia

When calculating the amount of unionized ammonia present in a sample, the pH, water temperature and actual value of total ammonia was used. In the cases where the measured total ammonia was below detection limit (0.05 mg/L), the detection limit value was used in the equation knowing that the value is actually something less. As shown in Table 12, the 75th percentile value of unionized ammonia calculated for all sampling locations was less than 0.020 mg/L. In fact, only one single sample at one location exceeded the PWQO for unionized ammonia. This sampling location was in the Grand River in Leggatt approximately 18.6 kilometers as the crow flies downstream of the confluence with the Foley Drain. Even though the measured total ammonia value was less than the testing detection limit, the calculated unionized ammonia concentration exceeded the PWQO because of the elevated water temperature of over 25°C and a river pH of over 9.0. This data documents that these reaches of the Grand River under study and the Foley Drain should be considered Policy 1 from a unionized ammonia perspective and are not acutely or chronically toxic as a result of unionized ammonia to all forms of aquatic life.

Dissolved Oxygen

All forms of aquatic life require oxygen to be dissolved in the water to breath. Dissolved oxygen is the measure of the amount of oxygen present in the water. The PWQO for dissolved oxygen is a minimum of 5.0 mg/L for cold water biota (salmonid fish communities) and a minimum of 4 mg/L for warm water biota (centrarchid fish communities).

The dissolved oxygen concentration at the upstream station on the Grand River varied from 7.87 mg/L to 15.23 mg/L. The 25th percentile of the dissolved oxygen at this station was 9.73 mg/L. At the downstream station on the Grand River after mixing with the Foley Drain near Riverview the dissolved oxygen varied from 9.16 mg/L to 14.97 mg/L while the 25th percentile was 10.39 mg/L. At all the remaining downstream stations the minimum dissolved oxygen was above 8.0 mg/L. This information shows that the treated wastewater discharge from Dundalk was not serious impacting on the Grand River water quality with respect to dissolved oxygen.

Previewing the dissolved oxygen concentration upstream of the treated wastewater discharge in the Foley Drain, concentrations varied from 8.11 mg/L to 13.79 mg/L while at the downstream station they varied from 8.86 mg/L to 15.14 mg/L. This information documents the non-impactiveness of the treated wastewater discharge on the dissolved oxygen regime of the Foley Drain.

BOD₅

As stated previously the BOD₅ concentration in a treated wastewater discharge can also be of a potential concern. BOD₅ is a measure of the amount of dissolved oxygen potentially required to oxidize the organic matter in the sample over a 5-day period at 20°C. As part of this study only the stations on the actual Foley Drain were monitored for BOD₅ based on the previous monitoring experience of the GRCA. At all three stations on the Foley Drain the vast majority of the analysis revealed that the BOD₅ concentrations were at the detection limit. Only 1 downstream sample had a BOD₅ concentration greater than the upstream reference concentration. This sample had a reported value of 9.0 mg/L but appeared to have no measurable impact on the Grand River or the Foley Drain dissolved oxygen concentrations.

For comparison purposes, Table 13 has been included to show the changes in water quality that have occurred upstream to downstream in the Foley Drain and the Grand River over the past close to 20 years.

Table 13 is a summary of the December 1997 to November 1998 water quality data collected near Dundalk as part of the previous waste assimilation study. The data for the individual sampling events and stations are provided in Appendix C.

Comparing the two tables with a close to 20-year time spread documents the water quality improvements that have occurred on the Grand River. The 1997/8 data at the upstream station on the Grand River revealed an average total phosphorus concentration of 0.160 mg/L, unionized ammonia of 0.002 and a dissolved oxygen of 8.7 mg/L while the 2015/6 data were 0.023 mg/L, 0.002 mg/L and 11.33 mg/L respectively. This shows a major reduction in upstream total phosphorus inputs and improved dissolved oxygen concentrations over the past close to 20 years. The station on the Grand River below the confluence of the Foley Drain and Grand River (Riverview) had a 1997/8 average concentration of 0.121 mg/L total phosphorus, 0.003 mg/L unionized ammonia and 9.5 mg/L dissolved oxygen while the 2015/6 average concentrations were 0.023 mg/L, 0.002 mg/L and 11.68 mg/L respectively. Again, this documents the major reduction in phosphorus loads and improvements in dissolved oxygen concentrations below the confluence with the Foley Drain.

These same trends are also shown upstream and downstream of the Dundalk treated wastewater discharge in the Foley Drain. Back in 1997/8, the average upstream concentrations in the Foley Drain were 0.049 mg/L total phosphorus, 0.0012 mg/L unionized ammonia and 7.59 mg/L dissolved oxygen with numerous samples below the minimum dissolved oxygen objective during the summer months. Now in 2015/6, the average upstream concentrations in the Foley Drain are 0.020 mg/L total phosphorus, 0.001 mg/L unionized ammonia and 11.87 mg/L dissolved oxygen with no individual exceedances.

As a result of the improved upstream conditions and improved effluent quality in the discharge of the treated wastewater from Dundalk, the downstream station also shows a major improvement over this time frame. In 1997/8 at the downstream station in the Foley Drain, the average concentrations of total phosphorus, unionized ammonia and dissolved oxygen were 0.13 mg/L, 0.005 mg/L and 9.0 mg/L respectively. Now in 2015/6 the average downstream concentrations in the Foley Drain after mixing with the Dundalk discharge are 0.034 mg/L total phosphorus, 0.001 mg/L unionized ammonia and 12.11 mg/L dissolved oxygen.

Table 14: Summary of December 1997 to November 1998 Water Quality Sampling Results

Station	BOD	Susp.Solids	Diss.Solids	TKN	Ammonia	Nitrate	Nitrite	T.Phosphorus	Phosphate	Chloride	Alkalinity	pH	E.coli	DissOxygen	Temperature	Unionized	# Samples
Average																	
U/S Foley	2.3	2.1	348	0.67	0.149	0.31	<0.05	0.049	0.019	77.58	255.3	7.52	<1	7.59	7.8	0.0012	23
Effluent	2.6	1.7		2.74	4.66	0.36	<0.05	0.12		91		7.48	2.4	10.8	2.8	0.016	14
D/S Foley	2.7	2.2	350	1.04	0.767	0.28	<0.05	0.130	0.019	72.18	254.5	7.61	<1	9.03	7.9	0.0048	23
U/S Grand	2.7	2.3	290	0.80	0.211	0.45	<0.05	0.160	0.020	35.70	247.4	7.56	1	9.0	8.7	0.002	23
D/S Grand	2.6	2.3	322	0.87	0.256	0.35	<0.05	0.121	0.020	37.86	242.9	7.64	1	9.5	9.4	0.003	23
Maximum																	
U/S Foley	4.9	4.51	430	1.84	0.379	0.88	<0.05	0.122	0.051	239.56	388.7	8.23	3	13.2	22	0.005	
Effluent	4.4	3.6		18.44	16.07	1.28	<0.05	0.31		122		7.80	5	12.6	8	0.061	
D/S Foley	8.2	4.14	460	5.81	4.48	1.27	<0.05	1.47	0.05	140.67	362.9	8.25	6	12.6	22.0	0.024	
U/S Grand	7.2	6.1	400	1.72	0.61	1.71	<0.05	1.23	0.088	205.61	358.7	8.13	5	12.6	23.0	0.009	
D/S Grand	5.5	3.8	870	2.05	0.89	0.93	<0.05	0.81	0.081	170.95	352.2	8.24	8	12.2	24	0.009	
75th %																	
U/S Foley	2.6	2.4	375	0.67	0.209	0.40	<0.05	0.080	0.027	89.2	272.1	7.61	1	4.1	14.5	0.002	
Effluent	3.0	1.9		1.77	9.92	0.35	<0.05	0.11		109.3		7.56	4	10.1	6.5	0.032	
D/S Foley	2.8	2.9	375	1.06	0.581	0.30	<0.05	0.11	0.022	88.15	278.5	7.71	1	6.5	14.0	0.005	
U/S Grand	3.1	3.0	345	1.15	0.296	0.66	<0.05	0.105	0.026	33.18	265.0	7.69	1	6.2	15.0	0.004	
D/S Grand	2.9	2.7	355	1.16	0.34	0.58	<0.05	0.10	0.024	34.68	257.8	7.79	1	7.9	18.0	0.005	

In most cases, the 75th percentile of a water chemistry parameter is used to define background water quality conditions in a watercourse. The 2015/6 data shown in Table 13 reveal that the upstream stations on the Grand River and the Foley Drain are now both a Policy 1 receiver for all parameters sampled. At the upstream station on the Grand River, there was only 3 individual samples (of a total of 20 samples) that exceeded the total phosphorus PWQO of 0.03 mg/l and no individual exceedances of the unionized ammonia PWQO of 0.02 mg/l with a minimum recorded dissolved oxygen of 7.87 mg/l well above both PWQO for dissolved oxygen. At the upstream station on the Foley Drain, there were 2 individual samples (of a total of 14 samples) that exceeded the total phosphorus PWQO of 0.03 mg/l and no individual exceedances of the unionized ammonia PWQO of 0.02 mg/l with a minimum recorded dissolved oxygen of 8.11 mg/l again well above both PWQO for dissolved oxygen.

As an even further check on the representativeness of the water chemistry monitoring the Draft October 2011 report Water Quality in the Grand River Watershed: Current Conditions & Trends (2003 – 2008) by H.A. Loomer and S.E. Cooke of the Grand River Conservation Authority was reviewed. The nearest station in this report that corresponds with one of our sampling stations is the one at Leggatt that was sampled from 2004 to 2008. It should be stated that this monitoring station is downstream of the regulated outflow from the Luther Marsh. From a seasonality perspective in their report 36.7 % of the samples were taken during the spring, 53.3 % during the summer and 10 % during the fall. Unfortunately, the authors of the report included no actual data so guesstimates had to be made from their figures. Interpreting actual concentrations from their whisker plots it appears that the mean total phosphorus concentration over their reporting period was 0.03 mg/L versus the 0.029 mg/L during our sampling at Leggatt. This would suggest that the total phosphorus concentration exceeded the PWQO approximately ½ the time over the reporting period. However, looking at the 75th percentiles at this station, they calculated a value of approximately 0.045 mg/L total phosphorus versus the 0.038 mg/L during our study. This difference maybe a result of the difference in seasonality of the actual sampling dates. Their report concluded that there was no correlation between total phosphorus concentration and streamflow but there was a strong correlation between total phosphorus and suspended solids. Peak phosphorus concentrations did occur during freshet events. The report summarizes by stating that the *Water quality, as generally characterized by nutrient concentrations, in the upper Grand River subbasin is good relative to levels found elsewhere in the Grand River watershed. However, phosphorus levels tend to be at or above the PWQO which is typical for watersheds draining the Lake Erie Lowlands which are some of the most agriculturally intense and populated watersheds in Canada (Gartner Lee Ltd 2006).* Based on the various historic chemical monitoring data, it would appear that our sampling would fall within the normal range.

Macro invertebrates

Instead of quantifying the constituents that are suspended or dissolved in water, water quality can also be measured by quantifying the occurrence and or abundance of the aquatic organisms living in the watercourse. This technique dates back into the 1800's. These in situ organisms provide a direct link with water quality. Aquatic biota continuously integrates the independent and interactive effects of all environmental variables and stresses observed over their life cycles from 1 month to years. Benthic macro invertebrates are the most common group of organisms used to diagnose water quality.

The BioMAP sampling procedure was developed by Dr. Ronald Griffiths an employee of the Ontario Ministry of the Environment. His book BioMAP Bioassessment of Water Quality identifies standard procedures in the collection, enumeration and interpretation of the macro invertebrate data. He also developed a Water Quality Classification system that was based on the different sensitivities of the various taxa collected and the total number of the various types of organisms compared to the watercourse size.

Benthic macroinvertebrate samples were taken on October 22, 2015 at a station upstream and downstream of the Dundalk effluent discharge in the Foley Drain and in the Grand River upstream and downstream of the confluence with the Foley Drain. The samples were taken using the BioMAP sampling protocols. One qualitative sample (D frame net) and two quantitative samples (stovepipe) were taken at each of the four locations. Refer to Figure 3 for the actual sampling locations.

In 1996 the Grand River Conservation Authority undertook benthic macroinvertebrate sampling in the Grand River both upstream and downstream of the confluence with the Foley Drain. Their upstream sampling station on the Grand River was at the same location as the 2015 upstream sampling location while their downstream station on the Grand River was 1 concession further downstream than was sampled in the 2015 study. The Grand River Conservation Authority followed a very similar sampling procedure as identified by BioMAP.

Organism density, species diversity and BioMAP (WQI_d) were calculated for each of the 2015 quantitative sample while species diversity and BioMAP (WQI_q) were calculated for each of the 2015 qualitative samples. WQI_d is a water quality index based on an abundance or density weighted sensitivity value of the organisms while WQI_q is a water quality index based solely on the presence of the taxa at the site.

The formula for the density derived index (WQI_d) is as follows:

$$WQI_d = \frac{[\sum^n (e^{SV_i} * \ln(x^i+1))]}{[\sum^n \ln(x^i+1)]}$$

Where:

WQI_d = the quantitative BioMAP water quality Index

SV_i = sensitivity of the ith taxon

N = number of taxa in the sample

Quantitative decision thresholds based on stream size are as follows:

Creek	(Bank full width <4 m): unimpaired if > 16, impaired if < 14
Stream	(Bank full width 4 – 16 m): unimpaired if > 12, impaired if < 10
River	(Bank full width 16 - 64 m): unimpaired if > 9, impaired if < 7

The formula for the diversity derived index (WQI_q) is as follows:

$$WQI_q = \frac{1}{k[\sum^k (SV_i)]}$$

with k = integer (n/4), k ≥ 4

Where:

WQI_q = the qualitative BioMAP water quality Index

SV_i = the sensitivity of the ith ranked taxon (descending order)

N = the number of taxa at the site

Qualitative decision thresholds based on stream size are as follows:

Creek	(Bank full width <4 m): unimpaired if ≥ 3.4, impaired if < 3.2
Stream	(Bank full width 4 – 16 m): unimpaired if ≥ 3.0, impaired if < 2.6
River	(Bank full width 16 - 64 m): unimpaired if ≥ 2.4, impaired if < 2.0

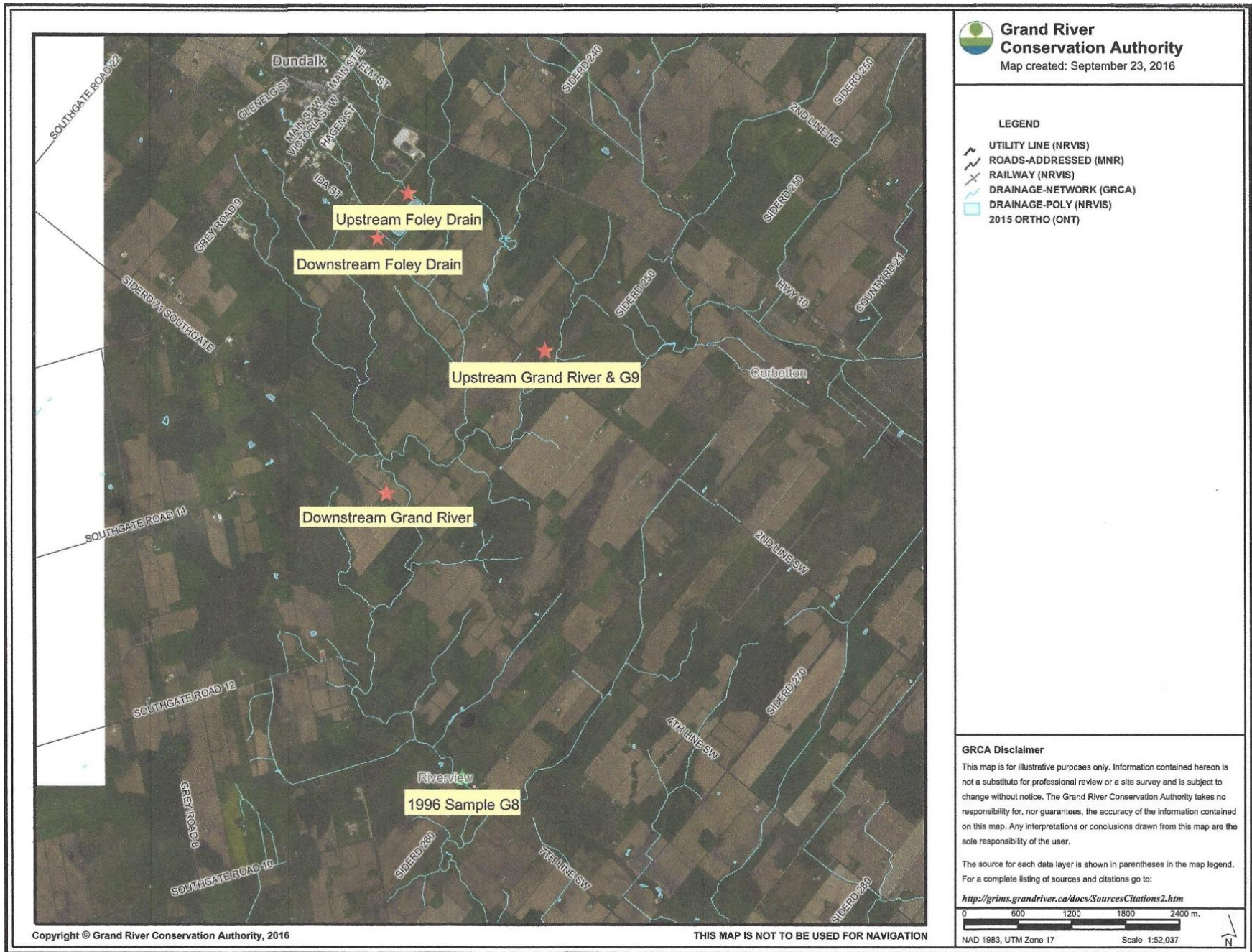


Figure 3: Benthic Invertebrate and Fishery Monitoring Stations on the Grand River

The complete taxa list for the four 2015 sampling locations and the two 1996 sampling locations are presented in Appendix D. Table 14 is a summary of the BioMAP(d) and BioMAP(q) calculated for the 2015 macroinvertebrate sampling stations and also a comparison of the 1996 and 2015 macroinvertebrate sampling locations on the Grand River. The measured bank full width at all 4 sampling locations was between 4 meters and 16 meters classifying these locations as streams.

Looking at the 2015 average BioMAP(d) Water Quality Index (WQI) score of 12.5 at the upstream station on the Grand River suggests that this station is unimpaired while the BioMAP(q) suggests it is just slightly in the gray area between unimpaired and impaired. The taxa at this station consisted of mainly caddisflies, beetles and midge with a few mayflies.

The 2015 average BioMAP(d) score at the station on the Grand River downstream of the confluence with the Foley Drain was 9.1 suggesting that the water quality at this station was impaired. This is probably a result of the station location chosen. The only riffle in this reach of the river was a shallow run between two large pooled areas. It appeared that this riffle may have been created as an animal crossing point for the draft horses in the field. The bottom consisted of hard packed gravel with some cobble. The reach was devoid of rocks preferred by various species of caddisflies. The main taxa at this station collected in the stove pipe sampling were beetles, midge, some mayflies and a few caddisflies. The BioMAP(q) had a score of 3 which suggests that the water quality at this station is unimpaired and of higher quality than at the upstream station. The qual sample collects taxa from all the various habitat types versus the stove pipe which only collects the taxa from less than a square foot of the streambed. The qual actually collected a number of different types of caddisflies along with the usually beetles, midge and a number of mayflies.

Now looking at the 2015 sample results in the Foley Drain, the station upstream of the input from the Dundalk Wastewater Treatment Facility had an average BioMAP(d) score of 5.0 and a BioMAP(q) of 2.5. Both of these scores suggest that the water quality is impaired. Even though the station had the most total number of organisms there was fewer numbers of sensitive taxa. This station had more worms and less mayflies captured. Downstream of the discharge in the Foley Drain both the BioMAP(d) and BioMAP(q) increased compared to the upstream station. Based on the WQI for this station it is still considered impaired but less impaired than upstream of the discharge.

The comparison between the 2015 and 1996 macroinvertebrate sample results on the Grand River upstream and downstream of the confluence with the Foley Drain is interesting. It must be remembered that the downstream station in 1996 was an extra full concession further downstream in a riffle area below the Riverview Dam versus the suspected constructed livestock crossing area at the 1st concession downstream of the confluence with the Foley Drain.

At the upstream station on the Grand both the BioMAP(d) and BioMAP(q) were higher in 1996 suggesting the water quality has deteriorated over this time frame. The densities of the more sensitive organism show only a slight decrease but there is over a 10% reduction in sensitive species present. In 1996 there were more taxa of mayflies, damselflies and caddisflies collected in the sample. Now comparing the downstream station on the Grand River, there is a large difference in the BioMAP(d) but similar BioMAP(q) over the time frame. The BioMAP(d) is very explainable because of the improved substrate from a preferred habit type for more of the sensitive species and it is probably not appropriate to compare the 2 samples. The similar BioMAP(q) WQI would suggest no real change in water quality over time.

Changes in the benthic macroinvertebrate data paints a different picture compared to the water chemistry data. The macroinvertebrate data suggests a slight deterioration or no change in the water quality versus the major improvement in water quality shown by the water chemistry data comparing 1996 and 2015.

Figure 4 is taken directly from the Conservation Ontario web site showing the Distribution of Mussel Species at Risk. Dundalk is shown in the upper right-hand side of the figure. This map shows there are no known mussel species at risk in the Foley Drain or the Upper Grand River.

Table 15: Summary BioMAP(d) and BioMAP(q) Water Quality Index Scores for Stations Shown

Location	2015			2015			2015			2015		
	Downstream Grand River			Upstream Grand River			Downstream Discharge in Foley Drain			Upstream Discharge in Foley Drain		
	Site 1			Site 2			Site 3			Site 4		
Station Replicate	Q	1	2	Q	1	2	Q	1	2	Q	1	2
TOTAL NUMBER OF ORGANISMS	-	151	129	-	392	346	-	133	96	-	665	197
TOTAL NUMBER OF TAXA a	28	23	18	30	27	25	31	25	21	27	22	21
BioMAP(d)		9.3	8.9		12.1	13.0		5.7	6.4		5.4	4.6
Average BioMAP(d)			9.1			12.5			6.0			5.0
BioMAP(q)			3.0			2.9			2.6			2.5

bankfull width between 4 and 16 meters at all sampling locations

Location	1996			2015			1996			2015		
	Downstream Grand River			Downstream Grand River			Upstream Grand River			Upstream Grand River		
	G8			Site 1			G9			Site 2		
Station Replicate	Q	1	2	Q	1	2	Q	1	2	Q	1	2
TOTAL NUMBER OF ORGANISMS	-	389	471	-	151	129	-	923	59	-	392	346
TOTAL NUMBER OF TAXA a	34	28	41	28	23	18	33	21	21	30	27	25
BioMAP(d)		12.3	12.4		9.3	8.9		15.2	10.6		12.1	13.0
Average BioMAP(d)			12.3			9.1			12.9			12.5
BioMAP(q)			3.1			3.0			3.3			2.9

Fishery

According to the Grand River Conservation Authority (GRCA), the Grand River and its tributaries offer world-class recreational fishing. Whether you're fly fishing for trout, trolling for walleye or dropping a line in search of catfish, you can find what you want in the rivers, streams and reservoirs of the Grand. The Grand River watershed includes swift cold-water trout streams, serene pastoral stretches filled with smallmouth bass, pike and walleye, and big river fishing for anything from Rainbow Trout to Crappies. In fact, over half of the fish species in Canada are in the Grand River watershed.

The Grand River near Fergus is said to be the best tail-water Brown Trout fishery in Eastern North America and is arguably one of the most popular fly-fishing destination in Ontario. On their webpage, the GRCA identify the numerous reservoirs and stretches of the river where they promote fishing and identify the various species of fish one could potentially catch. In the reaches of the Grand River between Dundalk and Belwood they identify fishing for Smallmouth Bass, Carp, Yellow Perch and Pike.

The GRCA undertook a fish sampling survey throughout their watershed in 1996. Included in their sampling was G9 which was located on the Grand River upstream of the confluence with the Foley Drain on the southwest side on 2nd Line Melancton (Ida Street see Figure 3 for sampling locations) and G8 which is on the Grand River downstream of the confluence with the Foley Drain below the dam at Riverview. Table 15 presents the species of fish captured at the stations upstream and downstream of the Foley Drain.

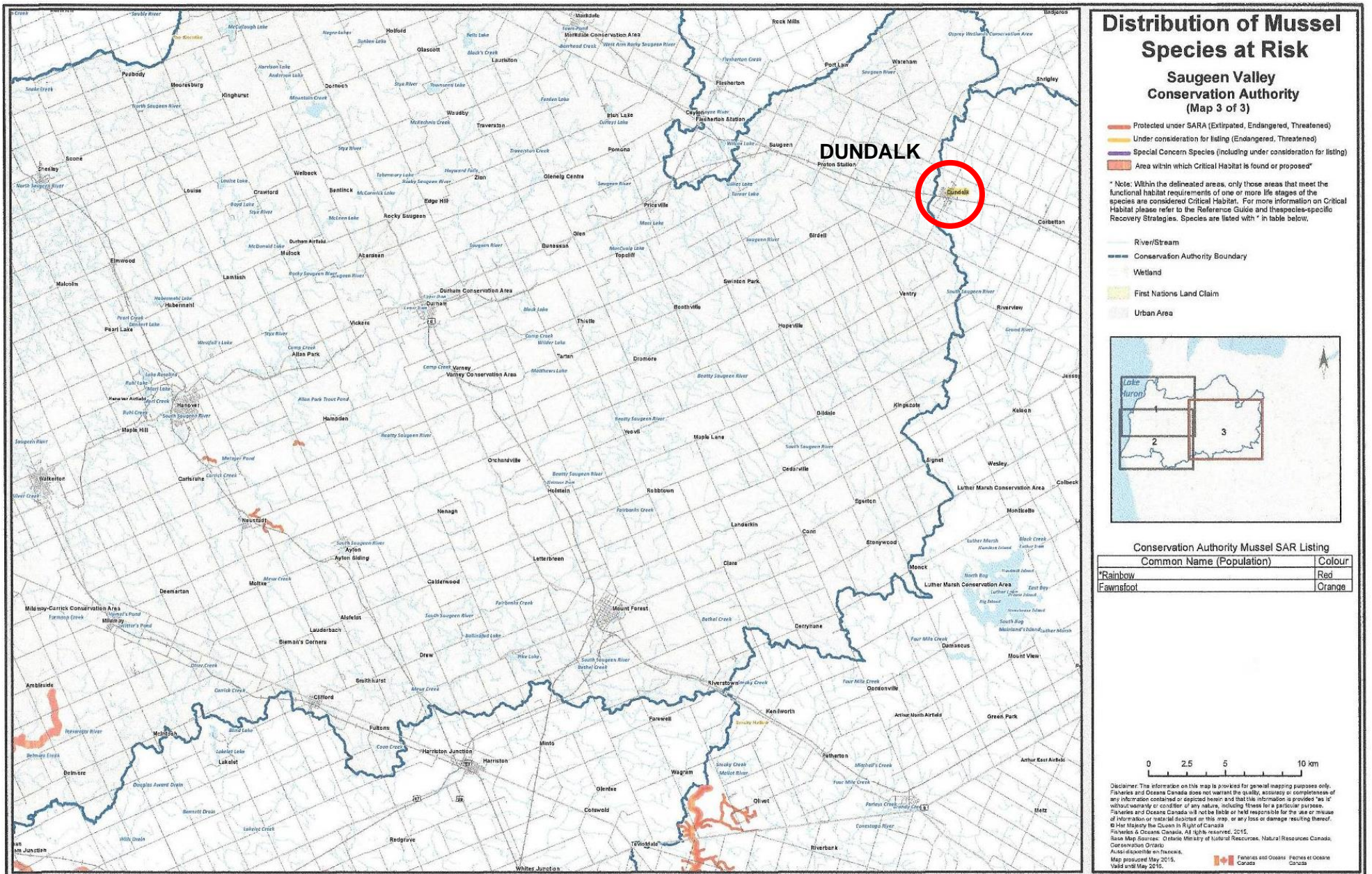


Figure 4: Distribution of Mussel Species at Risk in the Upper Grand River.

Table 16: Species of fish captured in the Grand River in 1996 at the stations upstream and downstream of the Foley Drain

Species	G8 Downstream Riverview Dam	G9 Upstream 2 nd Line Melancthon
Central Mudminnow	24	9
Northern Pike	1	4
Northern Redbelly Dace	-	7
Hornhead Chub	61	19
Common Shiner	1	2
Blacknose Shiner	-	51
Bluntnose Minnow	29	20
Blacknose Dace	2	1
Creek Chub	16	7
White Sucker	31	35
Brown Bullhead	1	-
Brook Stickleback	-	14
Rock Bass	18	13
Smallmouth Bass	1	-
Iowa Darter	3	4
Least Darter	3	3
Mottled Sculpin	26	9
Central Stoneroller	19	-
Total No. Fish	236	198
Total No. Species	15	15

In September of 2000, the GRCA did electrofishing in the area of the bridge downstream of the discharge from the Dundalk Wastewater Treatment Facility. During their 30-minute fishing effort, they captured 83 Central Mudminnows, 12 Northern Redbelly Dace, 15 Brook Stickleback, 3 Creek Chub, 1 Fathead Minnow and 1 Johnny Darter. Again, this documents the non-toxicity of the Dundalk WWTF discharge.

This information confirms the information in Figure 5 attached showing no rare or endangered species of fish present in the area. Dundalk is located in the right-hand central part of Figure 5.

Streamflow augmentation

Portions of the Grand River and some of its tributaries are regulated for flood control and low flow augmentation using several water controls structures. The northern portion of the watershed is largely comprised of till plain characterized by high surface runoff and very little ground infiltration. Watercourses in this area respond quickly to precipitation events, with little to no flow during sustained dry periods. The topography is relatively flat; this has driven the need for extensive agricultural drainage works. There are thirty-four water control structures operated by the Grand River Conservation Authority throughout the watershed. The reservoirs are filled during the spring snowmelt, the most active flooding season, and then gradually drawn down over the summer and early fall, thereby supplying more flow in the river than would normally be. The current operating procedures for the reservoir system were modified in 2005 to provide more flexibility to respond to warmer winters and less accumulation of snow. The reservoir system has a very significant effect on the flows in the Grand, Conestogo, and Speed Rivers. The Upper Grand River watershed from the headwaters to the Conestogo River largely consists of Tavistock Till Plain, characterized by high surface runoff and low soil infiltration. The river valley is distinct through the region, with well-defined banks and floodplains. Through part of its length the river has cut a steep sided gorge through exposed bedrock. Upstream of the

Belwood Lake (Shand Dam) Reservoir, the river is runoff dominated as shown by the flow distribution for the stream gauge at Legatt. Spring snowmelt is used to fill the large reservoirs, Luther Marsh and Belwood Lake, in the Upper Grand watershed to mitigate flooding and provide flow augmentation during low flow conditions. Downstream of the Shand Dam, the flow regime is modified by reservoir operations. Peak flows are smaller and base flows more stable as seen in the flow distribution for the stream gauge at West Montrose,

The addition of a summer time continuous discharge of non-toxic treated wastewater from the Dundalk WWTP would also provide flow augmentation to the upper reaches of the Grand River. As demonstrated by the biological monitoring upstream and downstream of the Foley Drain and the confluence with the main river, improved water quality has been documented.

Ministry Policies and Procedures

As identified in the Ministry publication "Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters, July 1994" any new discharge should be non-toxic. It goes on to state "All new or expanded effluent discharges must not be acutely lethal as defined by meeting a 96 hr LC₅₀ whole effluent toxicity test using Rainbow trout and *daphnia magna*". This statement specifically relates to Policy 5 dealing with Mixing Zones. This Policy is especially important in the case of the former village of Dundalk because the existing wastewater treatment facility is so far up in the Foley Drain watershed it is difficult to provide guaranteed dilution and water quality in this tributary of the Grand River at the discharge location that meets the Provincial Water Quality Objectives (PWQO) or "Blue Book". Based on the heavy growths of water cress upstream and downstream of the discharge location it does appear some year-round flow is present but as to how much is difficult to quantify. Actual toxicity testing using both rainbow trout and Daphnia Magna have occurred on the effluent of the existing wastewater treatment facility and the effluent has been shown to be non-acutely toxic. Previous assessments have allowed the Foley Drain to be considered part of the mixing zone under extreme low streamflow events. The mixing zone is the area between when the water quality changes from non-acutely toxic to non-chronically toxic. The Ministry's "Blue Book" numbers are considered non-chronic values that should protect all aquatic life if they are present in the water body or not. Based on the recent macroinvertebrate work in the Foley Drain, it demonstrates that the quality of the macroinvertebrate community is better below the effluent discharge than above. The presence of various fish species captured in the Foley Drain below the discharge also demonstrates that under most streamflow situations that the resultant water quality is non-acutely toxic. It is proposed to maintain the section of the Foley Drain downstream of the effluent discharge location as part of the mixing zone as previously approved by the Ministry.

With the existing effluent objective and limit for Dundalk identifying unionized ammonia concentrations versus TAN concentrations there should be no concern about a mixing zone or a zone of passage. Simple analysis procedures have been used in other studies to show a zone of passage of at least 25 % of the receiver under 7Q20 streamflow when TAN values are presented in the ECA. Also using this approach water temperature and pH values must be assumed to calculate the resultant unionized ammonia concentration instream during and after mixing. In the case of Dundalk, the unionized ammonia effluent objective is 0.05 mg/L and the effluent limit is 0.1 mg/L. These values are less than the acute toxicity values given for the various species of fish and invertebrates identified by Environment Canada. The full effluent flow would be non-acutely toxic with a 100 % zone of passage. There is no reason to undertake a mixing zone study to evaluate toxicity if unionized ammonia criteria are being imposed in the ECA.

The above referenced document also deals with Policy 2. Policy 2 states: "Water quality which presently does not meet the Provincial Water Quality Objectives (PWQO) shall not be degraded and all practical measures shall be undertaken to upgrade the water quality to the objectives". The most recent round of sampling conducted by the GRCA actually documented that the upstream stations on the Foley Drain and the upper Grand River near Dundalk are Policy 1 streams for all parameters when comparing the 75-percentile value. Previous water quality assessments documented that both the Foley Drain and the Upper Grand River were considered Policy 2 water courses in respect to Total Phosphorus. This change in Policy 2 to Policy 1 is a testament to the work done by the GRCA and the agricultural community at reducing phosphorus inputs to the river. The 75th percentile total phosphorus concentration in the Grand River near Riverview (at the second concession downstream) is Policy 2 after mixing with the effluent discharge and travelling another over 7

kilometers thru agricultural lands. The 75th percentile instream total phosphorus concentration increased to only 0.031 mg/L and the PWQO is 0.030 mg/L. For comparison the 1997-8 total phosphorus 75th percentile concentration at the same station was 0.10 mg/L or over 3 times higher. There are still exceedances of the total phosphorus PWQO at the upstream station but they are now less frequent than in the past. In fact, only 3 of the 20 samples at the upstream Grand River station exceed the PWQO objective but they resulted in a greater average total phosphorus concentration for this station than at the downstream station. This theoretically means that for an increase in approved discharge volume there should be a corresponding decrease in effluent total phosphorus concentration.

However, phosphate (PO₄) is one of the forms that the above-mentioned total phosphorus maybe presents in the sample in. Phosphate can stimulate the growth of plankton and aquatic plants which provide food for larger organisms, including zooplankton, fish, humans, and other mammals. Plankton represents the base of the food chain. Initially, this increased productivity will cause an increase in the fish population and overall biological diversity of the system. But as the phosphate loading continues and there is a build-up of phosphate in the surface water ecosystem, the aging process of the surface water ecosystem will be accelerated. The Ministries PWQO for Total Phosphorus is based on premise that ALL phosphorus will be converted at some time to phosphate and be available for plant growth.

Now looking specifically at the phosphate (PO₄) concentrations at the upstream station on the Grand River only 3 samples had concentrations above the detection limit. These were in the same three samples that exceeded the total phosphorus PWQO. Now looking at the first station downstream on the Grand River, only 1 sample was above the phosphate method detection level. This was on the same day the maximum total phosphorus concentration was measured at this station and there were exceedances documented at the upstream control station. Now looking at the remaining downstream stations, it would appear that the measured phosphate concentration would only exceed the tests detection limit when the suspended solids were above normal. This would suggest that there is not an excess of phosphorus or phosphate in these reaches of the Upper Grand River system.

This data is consistent with the observations respecting the macro invertebrate data collected upstream to downstream in the Grand River and the Foley Drain. The BioMAP WQI(q) at the downstream station on the Grand River had a score of 3 which suggests that the water quality at this station is unimpaired and of similar or higher quality than at the upstream station. The qual sample collects taxa from all the various habitat types at that specific station and included a number of different types of caddisflies along with the usually beetles, midge and a number of mayflies. The upstream Grand River station had a BioMAP WQI(d) score of 12.5 suggesting that this station is also unimpaired. The taxa consisted of mainly caddisflies, beetles and midge with a few mayflies. The downstream station had very similar types of taxa just lower numbers per unit area probably because of the difference in substrate. Now looking at the BioMAP WQI(d) and WQI(q) scores for the Foley Drain, they show that the water quality is better below the lagoon discharge than above.

PWQO's are numerical and narrative criteria which serve as chemical and physical indicators representing a satisfactory level for surface waters quality. The PWQO are set at a level of water quality which is protective of all forms of aquatic life and all aspects of the aquatic life cycles during indefinite exposure to the water. PWQO's are intended to provide guidance in making water quality management decisions and often used as a starting point in deriving waste effluent requirements for ECA's and other instruments to regulate effluent discharges.

However, the Ministry policies and documents recognize that all water courses don't respond equally to a stimulant and many have their own unique physical characteristics and properties that must be considered by water managers. In the case of the upper Grand River in the vicinity of Dundalk, it would appear that an exceedance of the total phosphorus PWQO has not resulted in excessive aquatic plant or weed growth and the resultant violations of the dissolved oxygen criteria.

Procedure F-5-1 requires that a receiving water assessment be conducted for any new or expanded Municipal Sewage Treatment System discharging to surface water. One of the purposes of this study was to comply with this procedure.

Effluent disinfection requirements are laid out in Procedure F-5-4. This procedure states “all municipal sewage works requires disinfection”. This procedure has previously been interpreted to mean that a treatment facility does not necessarily have to install a ultra violet or chlorination disinfection system but the treatment process must produce an effluent that results in less than 200 CFU of E. coli. Based on the last five years of effluent monitoring, it does show that the filtered effluent from the Dundalk treatment facility does meet this procedure during the open water recreational periods of the year or when livestock maybe out in the fields drinking directly from the river.

Procedure F-5-1 identifies the general guideline for phosphorus removal at all wastewater treatment facilities in Ontario based on the type of treatment facility present. The existing Dundalk wastewater treatment facility is a continuously discharge lagoon with phosphorus removal and thus based on this procedure would only require a total phosphorus effluent limit of 1.0 mg/L. However, a Regional Approach has been taken by the Ministry in the past based on existing downstream water uses and sensitivities. The existing Dundalk wastewater treatment facility has total phosphorus effluent limits of 0.4 mg/L and 0.8 mg/L based on the water temperature. Based on the BioMAP(q) scores (values based on the number of sensitive species) the water quality in the Foley Drain below the lagoon discharge (2.6) compared to upstream of the discharge (2.5) shows no deterioration in quality as a result of the existing effluent quality. Similarly, in the Grand River comparing WQI(q) scores upstream (2.9) and downstream (3.0) of the confluence with the Foley Drain show no deterioration that is attributable to the treated waste water discharge.

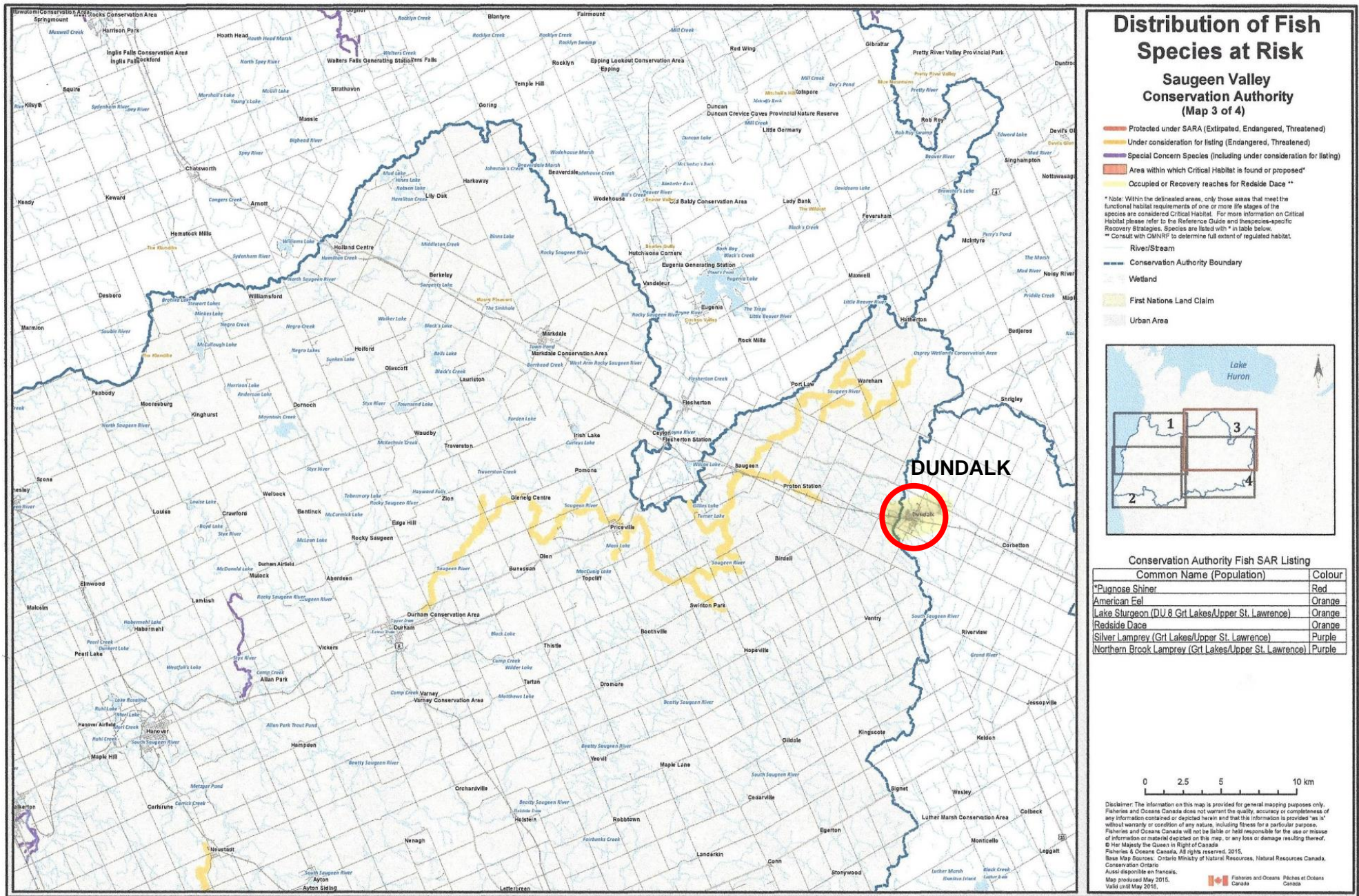


Figure 5: Distribution of Fish Species at Risk in the Upper Grand River.

Proposed Effluent Quality and Rationale

The Ministry of the Environment and the Corporation of the Township of Southgate should strive to continue to improve the water quality of the Foley Drain and the Grand River within their municipality. The recent water quality monitoring conducted by the Grand River Conservation Authority documents the improvements in water quality upstream of the Dundalk Wastewater Treatment Facility as well as downstream in the Grand River. The following proposed effluent discharge criteria should continue to maintain and or improve the existing water quality.

Biochemical Oxygen Demand & Carbonaceous Biochemical Oxygen Demand

There are no water quality objectives for BOD₅ but this parameter can have an impact on stream health. There is no absolute BOD value of a sample as there would be for most other parameters such as copper or phosphorus. BOD results are test defined. In other words, BOD values are based on the parameters of the test method, not on any “true” BOD value. BOD₅ is a measure of the amount of oxygen over a 5-day period that is required to oxidize the carbonaceous and nitrogenous oxygen demand in the water. Typically, it takes 1.5 times the carbonaceous demand and 4.57 times the nitrogenous demand (the total Kjeldahl nitrogen concentration) present in the sample to fully oxidize these materials in approximately a 20-day time period. BOD₅ measured in discharges of sewage treatment plants typically only measures the carbonaceous fraction or what is called cBOD₅. In the receiving stream, both demands can result in reductions of in stream dissolved oxygen concentrations. Dissolved oxygen is required by fish and other forms of aquatic life to survive. Both the BOD₅ and cBOD₅ tests are performed at a standard temperature of 20°C to standardize the rate of biological activity within the sample. The higher the temperature, the higher the rate of biological activity of the aerobic microorganisms in the water sample decomposing organic matter and using up oxygen. The existing cBOD₅ effluent objective for the Dundalk wastewater treatment facility is 5.0 mg/L while the effluent limit is 10 mg/L year-round. Based on the effluent monitoring data, when the effluent water temperature is above 10 °C the effluent cBOD₅ is typically 4 mg/L or less. When the water temperature drops down closer to 0 °C the effluent cBOD₅ increases to closer to the Effluent Limit and in fact has exceeded this value 3 times in the last 5 years. That being said, The Ministry of the Environment publication “Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters” identifies typical best available treatment technology-based effluent for BOD₅ to be 10 mg/l so Dundalk does produce a high-quality BOD effluent. The reason for the standardization of the incubation temperature to 20 °C is so that you can compare BOD results across different variables. The actual amount of oxygen consumed in a water sample taken from a stream at 5 °C will be much less than determined by the BOD test run at 20 °C. So, the slight exceedance of the effluent BOD limit at 5 °C or less is definitely a “paper violation” but it would not have serious consequences in the receiving stream. Also, it must be remembered that the Dundalk wastewater treatment facility has a post aeration cell where they can bump up oxygen concentrations to near saturation or super saturation prior to discharge. Typically based on the effluent monitoring when the cBOD in the discharge is above 5 mg/l, the dissolved oxygen concentration in the effluent is 10 mg/L or higher. Based on the existing fishery data and macroinvertebrate data in the Foley Drain, the existing cBOD₅ objective and limits are not having any serious negative impacts downstream of the discharge. In fact, based on the BioMAP scores upstream to downstream of the treated effluent discharge, the Foley Drain has better water quality downstream versus upstream. Therefore, we are recommending the same cBOD₅ effluent objective of 5 mg/L and effluent limit of 10 mg/L for any expansion as identified on the existing ECA. These values are consistent with other highly treated wastewater discharges within the province.

Total Suspended Solids

There are no water quality objectives for suspended solids either just like for BOD₅. Suspended solids are a measure of the volume of particles greater than the 1.5 µm pore size of the typical filter paper used. These solids can consist of algae, small macroinvertebrates, and lumps of degradable/oxidizable organic matter or just plain soil washed in or re-suspended from the stream bottom. Suspended solids can smother aquatic life, reduce light penetration, reduce disinfection capability, increase oxygen demand along with acting as a carrier for other contaminants (phosphorus, metals etc.). The existing Dundalk sewage works are allowed by their ECA to discharge up to 18.32 kg/day of suspended solids. Their existing effluent objective is 5 mg/L and their effluent limit is 10 mg/L. The sand filters prior to discharge remove the suspended solids down to the objective

range readily during the warmer water months but has a harder time during the cold-water winter months. The coagulant that is used to flocculate the particles in the water takes longer to work when the water is very cold. For the last 5 years there have been numerous exceedances of the effluent objective when the water temperature drops down to near freezing. Fortunately, the municipality because of its storage lagoons has the capability to shut down the discharge based on the effluent sampling showing an exceedance and not starting to discharge again till the sampling documents an acceptable concentration. Furthermore, the municipality has been working with various consultants to improve the effectiveness of their tertiary sand filters and flocculation procedures under cold water temperatures. The Ministry of the Environment publication "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters" identifies typical best available treatment technology-based effluent for suspended solids to be 10 mg/L so Dundalk does produce a high-quality effluent based on suspended solids. The existing aquatic life in the Foley Drain and or the Grand River does not appear to be negatively impacted by the existing concentration of suspended solids. The existing suspended solids limits are very typical of a tertiary treated effluent and thus it is proposed to use the same suspended solids effluent objective of 5 mg/L and an effluent limit of 10 mg/L for the expansion. Even with the above suggested effluent criteria, it is suggested that the municipality explore the option of trying to find a more effective coagulant for use during the colder months.

Ammonia

The MOE document *Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters* states; "All new or expanded effluent discharges must not be acutely lethal ...". Typically, acute lethality is caused by either unionized ammonia, chlorine or undissociated hydrogen sulphide in municipal wastewater treatment plants that include lagoon cells in their treatment train. There is no chlorine used in this facility so chlorine toxicity is not of a concern. Also, the existing treatment train includes a post aeration cell which would drive off any hydrogen sulphide toxicity prior to the discharge. Ammonia toxicity is based on the fraction in the unionized form (NH_3) present in the sample, which is pH and temperature dependent. The higher the temperature and pH of the solution, the higher the percentage in the unionized form. Acute toxicity of unionized ammonia is also species and life stage dependent. According to the *Draft for Public Comment of Priority Substances List, Assessment Report, Ammonia in the Aquatic Environment* published by Environment Canada and Health Canada, May 2000, Canadian fish species mean LC_{50} (acute toxicity) values range from 0.28 mg NH_3 /L for White Perch to 1.86 mg NH_3 /L for Green Sunfish. The sensitivity of invertebrates to ammonia as a group overlaps with the median of most tolerant fish species. The existing unionized ammonia criteria for the Dundalk wastewater treatment facility effluent is an objective of 0.05 mg/L (based on a monthly average) and an effluent limit of 0.1 mg/L (based on a single sample).

The water temperature of the effluent is controlled by the sun heating the water held within the lagoons while any pH above the typical range most likely is caused by algae growth. All plants including algae present in the lagoon go through daily photosynthesis and respiration cycles. During photosynthesis carbon dioxide present in the water is reduced and oxygen is produced by the plants and released to the water column while during respiration oxygen concentrations are reduced and carbon dioxide is released to the water column. This release of carbon dioxide from the algae subsequently drives up the pH of the water making the ammonia present more toxic to other forms of aquatic life.

Meeting these criteria ensures a non-acutely toxic discharge as required by Ministry policy. Over the last five years the Dundalk effluent has exceeded its effluent limit in the odd sample but met its effluent objective most months. When there were exceedances of the unionized ammonia criteria it was caused by high pH concentrations. During 2011, the effluent of the Dundalk Wastewater Treatment Facility underwent standard rainbow trout and *Daphnia Magna* toxicity testing. This facility consistently passed the laboratory toxicity testing demonstrating the non-acute lethality of its effluent.

The PWQO concentration of unionized ammonia is established to protect all species of aquatic life from chronic toxicity issues. The existing PWQO for unionized ammonia is 0.02 mg/L and would apply in the Grand River below the confluence with the Foley Drain. Based on all the water chemistry samples taken as part of this study in the Foley Drain upstream and or downstream of the discharge or in the Grand River only 1 sample may have exceeded the unionized ammonia PWQO. This sample like most of the water samples analyzed for

Total Ammonia Nitrogen (TAN) as part of this study came back as less than the detection limit 0.05 mg/L. When using this value as the real concentration to calculate the percentage of unionized ammonia with the measured field water temperature and pH resulted in a calculated concentration of 0.021 mg/L unionized ammonia. This pairing of the highest pH measured and one of the warmest water temperatures recorded as part of the study resulted in a possible exceedance in the Grand River near Leggatt three concessions downstream of the confluence of the Foley Drain. Because the measured Total Ammonia Nitrogen value was less than the detection limit all we can really say is the unionized ammonia was less than 0.021 mg/L but we do not know how much less.

During this study, the Grand River upstream of the confluence with the Foley Drain was sampled 18 times. Only 2 of the samples had Total Ammonia Nitrogen concentrations above the detection limit of 0.05 mg/L. Similarly, at the first station downstream of the confluence with the Foley Drain, this station also only had 2 exceedances of the Total Ammonia Nitrogen test detection limit. None of the exceedances resulted in the unionized ammonia concentration being greater than the PWQO of 0.02 mg/l.

In an attempt to estimate realistic unionized ammonia concentrations in the Grand River downstream of the confluence after an expansion, the year was broken into warm weather and cold weather. During the May to October period over the last 5 years the 75 percentiles of the monthly effluent unionized ammonia concentrations was 0.002 mg/L. This discharge concentration is much less than the PWQO concentration of 0.02 mg/L which then mixes with the Grand River background unionized ammonia concentration which again is some value less than the detection limit of the TAN test procedure. This approach demonstrates that it is highly unlikely that if the expanded wastewater treatment facility achieved the same effluent quality during the warmer months no exceedances of the unionized ammonia PWQO would occur even under 7Q20 dilution streamflow. Now using the same approach for the November to April period over the last 5 years the 75 percentiles of the monthly effluent unionized ammonia concentrations was 0.018 mg/L. This discharge concentration is less than the PWQO which then mixes with the Grand River background unionized ammonia concentration which again is some value less than the detection limit of the of the TAN test procedure. This approach demonstrates that it is highly unlikely that if the expanded wastewater treatment facility achieved the same effluent quality even during the colder months no exceedances of the unionized ammonia PWQO would occur even under 7Q20 dilution streamflow. Based on this analysis it is suggested that any expansion to the Dundalk wastewater treatment facility have the same unionized ammonia criteria (effluent objective of 0.05 mg/L unionized ammonia with an effluent limit of 0.1 mg/L unionized ammonia) as the existing facility.

Total Phosphorus

The existing ECA total phosphorus criteria varies with the water temperature. At a water temperature of >5 °C the total phosphorus effluent objective is 0.3 mg/L while the effluent limit is 0.4 mg/L resulting in a maximum monthly average loading of 0.73 kg/d. At a water temperature of < 5 °C the total phosphorus effluent objective is 0.6 mg/L while the effluent limit is 0.8 mg/L resulting in a maximum monthly average loading of 1.47 kg/d. The existing wastewater treatment facility has consistently stayed within its total phosphorus discharge limits for all but 1 month over the past 5 years. The Ministry of the Environment publication "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters" identifies typical best available treatment technology-based effluent for total phosphorus to be in the 0.3 to 0.5 mg/L range confirming that Dundalk wastewater treatment facility does presently produce a high-quality effluent based on total phosphorus. The PWQO for total phosphorus in riverine environment is 0.03 mg/L. Previous studies have shown that the background concentration of total phosphorus at the upstream location on the Grand River was above 0.03 mg/L making this reach a Policy 2 river for total phosphorus. Now based on the recent sampling as a result of programs coordinated by the GRCA the total phosphorus concentration in the Grand River at the upstream location has decreased allowing the classification to drop into the Policy 1 category. There are still exceedances of the total phosphorus PWQO (0.03 mg/L) at the upstream station but they are now less frequent than in the past. The 75th percentile total phosphorus concentration in the Grand River near Riverview (the closest downstream monitoring station) is Policy 2 after mixing with the effluent discharge and other potential nonpoint source phosphorus inputs. During this study the 75th percentile instream total phosphorus concentration increased to 0.031 mg/L from 0.024 mg/L upstream. During the 1997 – 98 study, the downstream station had a 75th percentile instream total phosphorus concentration of 0.101 mg/L or over 3 times higher. The total phosphorus concentrations in the effluent of the Dundalk

Wastewater Treatment Facility have also been reduced since the last waste assimilation study contributing to the measured improvements in stream.

The MOE document *Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters* states, in areas with water quality not meeting the PWQO for a specific contaminant (Policy 2) no further degradation of the water quality will be allowed for that contaminant, in this case total phosphorus. All reasonable and practical measures to improve water quality shall be undertaken. Expansion of existing discharges to Policy 2 receivers will only be permitted if the concentration and total load of the Policy 2 contaminant to the receiving stream is not increased. The existing ECA for Dundalk allows an average monthly total phosphorus loading of **0.73 kg/d** when the water temperature is greater than 5 °C and **1.47 kg/d** when the water temperature is less than 5 °C. These total phosphorus daily loadings are equivalent to the total phosphorus in the manure from approximately 16 cows in the summer and 32 cows in the winter. This approach means that for any expansion of the rated capacity of the Dundalk wastewater treatment facility, the actual allowable total phosphorus discharge concentrations would potentially have to decrease in relation to the increase in discharge flow. However, they are presently at what is defined by the Ministry as typical best available treatment technology-based effluent for total phosphorus in the 0.3 to 0.5 mg/L range. Also, the chemical and benthic data collected as part of this study, does not document the need for the present total phosphorus loading to be fixed and remain the same as presently stated on the ECA.

The 15-year planning horizon has an estimated potential discharge flow of 3,025 m³/d while the 25-year planning horizon has an estimated potential discharge flow of 4,200 m³/d. To not ignore the Ministry Policy 2 approach but also take into account the scientific data collected as part of this study, we are suggesting a reduction in the objective concentration so that there would be theoretically no increase in loading but maintain the existing effluent concentration limits.

Table 17a: Phosphorus Effluent Parameters: 15-year Planning Horizon (3,025 m³/day)

Parameter	Effluent Objective (mg/L)	Effluent Limit (mg/L)	Loading Objective (kg/d)
TP Water Temp > 5°C	0.24	0.40	0.73
TP Water Temp < 5°C	0.49	0.80	1.47

Because of our suggested approach, we are also suggesting that another macro invertebrate study be undertaken prior to any proposed expansion to the 25-year growth figures. This study will confirm if the proposed allowable increase in total phosphorus loading from a 15-year design continues to show no major negative impact to the Foley Drain or Grand River.

Table 17b: Phosphorus Effluent Parameters: 25-year Planning Horizon (4,200 m³/d)

Parameter	Effluent Objective (mg/L)	Effluent Limit (mg/L)	Loading Objective (kg/d)
TP Water Temp > 5°C	0.17	0.40	0.73
TP Water Temp < 5°C	0.35	0.80	1.47

Dissolved Oxygen

The existing ECA for Dundalk has a dissolved oxygen effluent objective of 5.0 mg/L and an effluent limit of 4.0 mg/L. This is readily achieved by the existing wastewater treatment facility because of the post aeration cell. Over the last 5 years, the minimum monthly average annual dissolved oxygen concentration in the effluent was 8.17 mg/L while the minimum monthly 25th tile annual concentration was 6.11 mg/L. The PWQO for a warm water stream like the Foley Drain and or the Grand River in these reaches varies with water temperature from 7 mg/L at 0 °C to 4 mg/L at water temperatures greater than 20 °C. During the complete survey all sampling stations in the Foley Drain and or the Grand River exceeded the PWQO minimum dissolved oxygen objective.

The unnamed tributary of the Foley Drain that was sampled as a potential contaminant input but has nothing to do with the wastewater treatment facility had a number of readings below the objective. It is suggested that the same dissolved oxygen criteria be imposed on any expanded wastewater treatment facility; an effluent objective of **5 mg/L** and an effluent limit of **4 mg/L**.

pH

Effluent pH is also stipulated on the existing ECA. The pH effluent objective range is 6.5 to 8.5 pH units while the pH effluent limit range is 6.0 to 9.0 pH units. Based on the last 5 years of monthly average effluent monitoring results there were no excursions outside of the effluent pH objective range. The PWQO gives an acceptable pH range of 6.5 to 8.5. All stations on the Grand River had exceedances of the pH objective. The upstream station only had 1 exceedance while the number of exceedances downstream increased with distance. These excursions beyond the objective range were always on the high side and probably as a result of plant and or algal growths in the river. Photosynthesis by aquatic plants and algae during the daylight hours increases the dissolved oxygen and decreases the carbon dioxide content of the water which causes a rise in pH. At night, when plants respire, they release carbon dioxide to the water, causing a decrease in pH. Summer pH values show greater variation than winter pH values because there is more light and warmer temperatures, producing both higher community photosynthetic and respiration rates. It is proposed to maintain the same effluent pH objective range of **6.5 to 8.5** and an effluent limit range of **6.0 to 9.0** pH units.

E. coli

Depending on the type of wastewater treatment process used and the timing of the discharge, E. coli criteria maybe imposed on the ECA. Escherichia coli or E. coli is a type fecal coliform bacterium that is commonly found in the intestines of animals and humans. These bacteria can enter a water course through direct discharge from animals and birds, from agricultural and storm runoff carrying animal and bird wastes and from sewage discharges into the water. The typical treated effluent wastewater discharge as a monthly geometric mean objective of 100 colonies per 100 ml and a non-compliance criterion of 200 colonies per 100 ml. This is the same criteria that is used for total body contact recreation (swimming) and is also used for beach postings as no swimming. Even though the reaches of the Grand River below Dundalk are not recognized swimming areas, users of the river like farmers, trappers etc. may come in contact with the water under certain seasons.

Conclusion

Under estimated 7Q20 streamflow in the Grand River near Dundalk, the treated effluent will only receive approximately 1 to 1 dilution once it reaches the Grand River. However, because of the high-quality treated effluent presently being discharged from the Dundalk Wastewater Treatment Facility, stream conditions actually improve downstream to upstream in the Foley Drain based on the macroinvertebrate communities collected. This additional water flow resulting from the discharge benefits all aquatic life living in the downstream reaches of the Grand. The various dams on the Grand River all augment summer streamflow and have guaranteed minimum discharge flows. Even the dam at the Luther Marsh downstream of Dundalk is used by the GRCA to augment streamflow for further downstream. This highly treated nontoxic year-round flow added to the upper reaches of the Grand River should be seen as a benefit to the complete river system helping to sustain the aquatic life in this Canadian Heritage River.

To summarize, the proposed 15-year planning horizon for Dundalk results in a rated capacity of their expanded wastewater treatment facility to 3,025 m³/day while a 25-year planning horizon results in proposed rated capacity to 4,200 m³/day.

The proposed effluent objectives and effluent limits under these two possible expansion scenarios are:

Table 18a: Effluent Parameters: 15-year Planning Horizon (rated capacity of 3,025 m³/day)

Parameter	Effluent Objective (mg/L)	Effluent Limit (mg/L)	Loading Objective (kg/d)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	10.00	15.13
Total Suspended Solids (TSS)	5	10.00	15.13
Total Phosphorus (TP)			
Temperature > 5°C	0.21	0.40	0.73
Temperature < 5°C	0.43	0.80	1.47
Dissolved Oxygen (DO)	> 5	> 4	N.A.
Un-ionized Ammonia (NH ₃ -N)	0.05	0.10	
pH	6.5 - 8.5	6.0 - 9.0	
E.coli (#/100mL) ¹	100	200	

¹ Contingent on type of treatment process selected for increased treatment capacity

Table 18b: Effluent Parameters: 25-year Planning Horizon (rated capacity of 4,200m³/day)

Parameter	Effluent Objective (mg/L)	Effluent Limit (mg/L)	Loading Objective (kg/d)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	10.00	21.00
Total Suspended Solids (TSS)	5	10.00	21.00
Total Phosphorus (TP)			
Temperature > 5°C	0.17	0.40	0.73 ²
Temperature < 5°C	0.35	0.80	1.47 ²
Dissolved Oxygen (DO)	> 5	> 4	N.A.
Un-ionized Ammonia (NH ₃ -N)	0.05	0.10	
pH	6.5 - 8.5	6.0 - 9.0	
E. coli (#/100mL) ¹	100	200	

¹ Contingent on type of treatment process selected for increased treatment capacity

² After confirmation of additional BioMAP sampling to documenting lack of serious negative impact of the proposed 15-year criteria.

The above proposed criteria are consistent with the Policy 2 approach and should result in no negative degradation of water quality. They are also consistent with Policy 5 dealing with Mixing Zones and non-toxicity. Procedures F-5-1, F-5-4 and F-8-1 have also been followed. The proposed criteria would fall into the “Advanced Treatment” section of Policy F-5-1 which the existing wastewater treatment system has demonstrated it can achieve and thus the “best available economically achievable treatment” concept for a discharge with only a dilution in the range of 1 to 1 under extreme 7Q20 low flows.

These proposed concentrations are similar to or more restrictive than the ECA limits imposed by the Ministry of Environment, Conservation and Parks on other wastewater treatment plants that discharge treated wastewater to the Central and Northern Basins of the Grand River.

This report is respectfully submitted.

Doug Huber, P. Geo
Huber Environmental Consulting

Dustin Lyttle, P. Eng
Triton Engineering Services

Appendices

Appendix A
Environmental Compliance Approval (ECA)
5657-9D9LYE

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 5657-9D9LYE

Issue Date: December 2, 2013

W4607A

The Corporation of the Township of Southgate
185667 Grey Road 9 Dundalk
Southgate, Ontario
N0C 1B0

Site Location: Dundalk Sewage Treatment Works
Lot 238 & 239, Concession 2
Southgate Township, County of Grey
N0C 1B0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Upgrade of the Dundalk Sewage Treatment Works (STW) for the collection, transmission, treatment and disposal of domestic sewage from the former Village of Dundalk, located at the above site location, discharging to Foley Drain and ultimately to the Grand River, rated at the capacity mentioned below and consisting of the following *Works* :

Dundalk STW (Rated Capacity)	
<i>Average Daily Flow</i>	1,832 m ³ /d

PROPOSED WORKS

Pumping Station

- 50 kW diesel generator to provide standby power for the raw sewage pumping station.
- control building to house raw sewage pump control equipment (variable frequency drives, ultrasonic transducer controllers), generator automatic transfer switch and other necessary electrical equipment.

Post Aeration Cell and Blower Building

- blower control equipment (variable frequency drives).

Tertiary Treatment Filter Building

- dissolved oxygen monitoring equipment for blower control
- air piping and fine bubble air diffusers in the effluent channel.

PREVIOUS WORKS

Pumping Station

- a submersible sewage pumping station including a 3.05 m diameter wet well equipped with two (2) submersible pumps, each rated at 47 L/s at 10 m TDH and a 230 mm diameter forcemain discharging to the waste stabilization ponds via an inlet structure

Waste Stabilization Ponds

- four (4) waste stabilization ponds with a total surface area of approximately 146,500 m² at an operating depth of approximately 1.8 m, providing a total storage volume of approximately 208,500 m³ and a retention period of 114 days at an average day flow of 1,832 m³/day, complete with interconnecting piping, influent and effluent flow control structures

Chemical Feed System

- a 2.2 m square single storey chemical metering building housing one (1) chemical metering pump complete with a flow recorder and totalizer
- a 24.5 m³ capacity chemical storage tank (located outdoors) complete with insulation and heat tracing

Post Aeration Cell and Blower Building

- an oval earthen post-aeration cell with an operating depth of approximately 2.1 m, equipped with a fine bubble aeration diffuser system
- a 6.9 m x 5.7 m blower building housing two (2) rotary positive displacement blowers (1 standby) each rated at approximately 235 L/s at 35 kPa

Tertiary Treatment Filter Building

- filter influent pumping station equipped with three (3) submersible pumps with variable frequency drives, two (2) pumps rated at 42.4 L/s at 7.6 m TDH and one (1) pump rated at 24.7 L/s at 5.5 m TDH
- a 5,680 L capacity chemical storage tank (located in the filter building) and two (2) chemical metering pumps capable of feeding alum solution at a maximum rate of 8.3 L/hr and an in-line static mixer

- a polymer feed system comprised of two (2) 450 L capacity day tanks with mixers and two (2) chemical metering pumps capable of feeding polymer solution at a maximum of 2.1 L/hr
- a flocculation tank complete with a mixer, sized for a hydraulic retention time of 10 minutes at an average day flow of 1,832 m³/day
- an automatic backwash filter comprised of two (2) cells with a surface area of 16 m², consisting of 300 mm anthracite layer, 250 mm silica sand layer over a 465 mm gravel bed, complete with lateral underdrain system and an air scour system
- a 50 m³ filter effluent tank equipped with two (2) submersible pumps and one (1) provisional standby pump (for filter backwash), each rated at 53 L/s at 15 m TDH, with discharge to the existing V-notch weir to measure effluent discharge via outfall to the Foley Drain
- a 50 m³ filter backwash waste tank equipped with two (2) submersible pumps (to pump filter backwash water to the raw sewage pumping station located at the head end of the sewage works), each rated at 26 L/s at 10 m TDH.
- effluent flow measuring equipment.

Water Level Recording Station

- a gauging station on the Grand River, complete with a heated stilling well and level recorder.

and other controls, piping, valves, drains, and appurtenances essential for the proper operation of the aforementioned sewage works,

all in accordance with supporting documents listed in **Schedule B**.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document and any schedules attached to it, and the application;

"Average Daily Flow" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"BOD₅" (also known as TBOD₅) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"Bypass" means diversion of sewage around one or more unit processes within the *Sewage Treatment Plant* with the diverted sewage flows being returned to the *Sewage Treatment Plant* treatment train upstream of the *Final effluent* sampling location, and discharging to the environment through the *Sewage Treatment Plant* outfall;

"CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"Daily Concentration" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"Director" means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the *EPA*;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

"E. Coli" refers to the thermally tolerant forms of *Escherichia* that can survive at 44.5 degrees Celsius;

"Emergency Situation" means a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the *Sewage Treatment Plant* or an unforeseen flow condition that may result in:

- a) danger to the health or safety of any person; or,
- b) injury or damage to any property, or serious risk of injury or damage to any property;

"Event" means an action or occurrence, at a given location within the *Sewage Treatment Plant* that causes a *Plant Bypass* or *Plant Overflow*. An *Event* ends when there is no recurrence of a *Bypass* or *Overflow* in the 12-hour period following the last *Bypass* or *Overflow*. Two *Events* are separated by at least 12 hours during which there has been no recurrence of a *Bypass* or *Overflow*;

"Equivalent equipment" means a substituted equipment that meets the required quality and performance standards of a named equipment;

"Final Effluent " means sewage discharge via the *Sewage Treatment Plant* outfall after undergoing the full train of unit processes as listed in the *Approval*;

"Grab Sample" means an individual sample of at least 1000 millilitres collected in the appropriate container at a randomly selected time over a period of time not exceeding 15 minutes;

"Limited Operational Flexibility" (LOF) means the *Modifications* that the *Owner* is permitted to make to the *Works* under this *Approval*;

"Ministry" means the ministry of the government of Ontario responsible for the *EPA* and *OWRA* and includes all officials, employees or other persons acting on its behalf;

"Modifications" means any addition, replacement, alteration, expansion or optimization for the *Works* as specified under *Limited Operational Flexibility*;

"*Monthly Average Concentration*" means the arithmetic mean of all *Daily Concentrations* of a contaminant in the effluent sampled or measured, or both, during a calendar month;

"*Monthly Average Daily Flow*" means the cumulative total sewage flow to the sewage works during a calendar month divided by the number of days during which sewage was flowing to the sewage works that month;

"*Monthly Average Loading*" means the value obtained by multiplying the *Monthly Average Concentration* of a contaminant by the *Monthly Average Daily Flow* over the same calendar month:

"*Notice of Modifications*" means the form entitled "Notice of Modifications to Sewage Works";

"*Owner*" means Township of Southgate and its successors and assignees;

"*OWRA*" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"*Plant Overflow*" means a discharge to the environment from the *Sewage Treatment Plant* at a location other than the plant outfall or into the plant outfall downstream of the *Final Effluent* sampling location;

"*Previous Works*" means those portions of the sewage works previously constructed and approved under an *Approval* ;

"*Proposed Works*" means the sewage works described in the Owner's application, this *Approval*, to the extent approved by this *Approval*;

"*Rated Capacity*" means the *Average Daily Flow* for which the *Works* are approved to handle;

"*Sewage Treatment Plant*" means the entire sewage treatment and effluent discharge facility;

"*Substantial Completion*" has the same meaning as "*substantial performance*" in the Construction Lien Act;

"*Water Supervisor*" means the Water Supervisor for the Owen Sound office of the Ministry; and

"*Works*" means the sewage works described in the *Owner* 's application, and this *Approval* , and includes both *Proposed Works* and *Previous Works* and the *Limited Operational Flexibility*.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

- (1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval* , and the application for approval of the *Works*.
- (3) Where there is a conflict between a provision of any document in the schedule referred to in this *Approval* and the conditions of this *Approval* , the Conditions in this *Approval* shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.
- (4) Where there is a conflict between the documents listed in the Schedule submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The Conditions of this *Approval* are severable. If any Condition of this *Approval* , or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Approval* shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed within **five (5) years** of the date of this *Approval*.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *Water Supervisor* and the *Director*, in writing, of any of the following changes within **thirty (30) days** of the change occurring:

- (a) change of *Owner*;
- (b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *Water Supervisor*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *Water Supervisor*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *Water Supervisor* and the *Director*.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the *Substantial Completion* of the *Works*, the *Owner* shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this *Approval*, and upon request, shall make the written statement available for inspection by Ministry personnel.

(2) Within one (1) year of the *Substantial Completion* of the *Works*, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

5. BYPASSES AND OVERFLOWS

(1) Any *Bypass* or *Plant Overflow* is prohibited, except:

(a) in an *Emergency Situation*;

(b) where the approved design and operation of the *Works* provides for *Bypasses / Plant Overflows* to be triggered under certain flow conditions and those conditions have been met and the Plant Peak Flow Rate is not exceeded;

(c) where the *Bypass / Plant Overflow* is a direct and unavoidable result of a planned maintenance procedure, the *Owner* notified the *Water Supervisor* 15 days prior to the *Bypass* and the *Water Supervisor* has given written consent of the *Bypass*; and

(d) where the *Bypass / Plant Overflow* is planned for research or training purposes, the discharger notified the *Water Supervisor* 15 days prior to the *Bypass / Plant Overflow* and the *Water Supervisor* has given written consent of the *Bypass / Plant Overflow*.

(2) The *Owner* shall forthwith notify the Spills Action Centre (SAC) and the Medical Officer of Health of all *Bypass and Plant Overflow Events* except the events occurring under subsection (1)(b). This notice shall include, at a minimum, the following information:

- (a) the date, time, and duration of the *Event*;
- (b) the location of the *Event*;
- (c) the measured or estimated volume of the *Event*;
- (d) the reason for the *Event*; and
- (e) the level of treatment the *Bypass(es)* and/or *Plant Overflow(s)* received and disinfection status of same.

(3) The *Owner* shall submit *Bypass and Plant Overflow Event Reports* to the Ministry's local office on a quarterly basis, no later than each of the following dates for each calendar year: February 14, May 15, August 14, and November 15. Event Reports shall be in an electronic format specified by the Ministry. In each Event Report the *Owner* shall include, at a minimum, the following information on any *Events* that occurred during the preceding quarter:

- (a) the date of the *Event(s)*;
- (b) the measured or estimated volume of the *Event(s)*;
- (c) the duration of the *Event(s)*;
- (d) the location of the *Event(s)*;
- (e) the reason for the *Event(s)*; and
- (f) the level of treatment the *Bypass(es)* and/or *Plant Overflow(s)* received and disinfection status of same.

(4) The *Owner* shall maintain a logbook of all *Plant Bypasses* and *Plant Overflows*, which shall contain, at a minimum, the types of information set out in subsection 2 (a) to 2(e) in respect of each *Bypass* and *Plant Overflow*.

6. EFFLUENT OBJECTIVES

(1) The *Owner* shall use best efforts to design, construct and operate the *Works* with the objective that the concentrations of the materials named in Table 1 as effluent parameters are not exceeded in the effluent from the *Works*.

Table 1 - Effluent Objectives	
Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
CBOD5	5.0
Total Suspended Solids	5.0
Total Phosphorus	0.30 ^A 0.60 ^B
Dissolved Oxygen	5.0
Unionized Ammonia	0.05

Note: ^A Period when stream temperature is greater than 5°C; ^B Period when stream temperature is greater than 5°C

(2) The *Owner* shall use best efforts to:

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- (a) maintain the pH of the effluent from the *Works* within the range of 6.5 to 8.5, inclusive, at all times;
 - (b) operate the works within the *Rated Capacity* of the *Works*;
 - (c) ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discoloration on the receiving waters.

(3) Stipulation made in Conditions 7.2(a), (c) and (d) for the effluent limits applies for the effluent objective.

(4) The *Owner* shall include in all reports submitted in accordance with Conditions 10 a summary of the efforts made and results achieved under this Condition.

7. EFFLUENT LIMITS

(1) The *Owner* shall design and construct and operate and maintain the *Works* such that the concentrations of the materials named in Table 2 as effluent parameters are not exceeded in the effluent from the *Works*.

Table 2 - Effluent Limits		
Effluent Parameter	Monthly Average Concentration (milligrams per litre unless otherwise indicated)	Monthly Average Loading (kilograms per day unless otherwise indicated)
Column 1	Column 2	Column 3
CBOD ₅	10.0	18.32
Total Suspended Solids	10.0	18.32
Total Phosphorus	0.40 ^A 0.80 ^B	0.73 ^A 1.47 ^B
Dissolved Oxygen	4	/
Unionized Ammonia	0.1 ^C	/

Note: ^A Period when stream temperature is greater than 5°C; ^B Period when stream temperature is greater than 5°C; ^C Single Sample result

(2) For the purposes of determining compliance with and enforcing subsection (1):

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(a) The *Monthly Average Concentration* of CBOD₅, Total Suspended Solids and Total Phosphorus as named in Column 1 of Table 2 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of Table 2 of subsection (1).

(b) The *Monthly Average Loading* of CBOD₅, Total Suspended Solids and Total Phosphorus as named in Column 1 of Table 2 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 3 of Table 2 of subsection (1).

(c) The calculated concentration of Unionized Ammonia, as named in Column 1 of Table 2 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of Table 2 of subsection (1) in any single sample.

(d) The *Monthly Average Concentration* of Dissolved Oxygen as named in Column 1 of Table 2 of subsection (1) shall not be less than the corresponding concentration set out in Column 2 of Table 2 of subsection (1).

(e) The pH of the effluent shall be maintained within 6.0 to 9.5 at all times.

(3) Paragraphs (a), (b), (c) and (e) of subsection (2) shall apply upon the issuance of this Approval.

(4) The effluent limits set out in subsection (1) shall apply upon the issuance of this Approval.

(5) Only those monitoring results collected during the corresponding time period shall be used in calculating the *Monthly Average Concentration* for this Approval.

8. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Approval* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this *Approval* and the *Act* and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the *Works*.

(2) The *Owner* shall prepare an operations manual **within six (6) months of Substantial Completion** of the *Proposed Works*, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works*;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works*;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *Water Supervisor*; and

(f) procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall provide for the overall operation of the *Works* with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

9. **MONITORING AND RECORDING**

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

- (a) Daily means once each day;
- (b) Monthly means once every month;

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring (Samples to be collected at the head of the inlet works)		
Parameters	Sample Type	Frequency
<i>BOD5</i>	<i>Grab Sample</i>	Monthly
Total Suspended Solids	<i>Grab Sample</i>	Monthly
Total Phosphorus	<i>Grab Sample</i>	Monthly
Total Kjeldahl Nitrogen	<i>Grab Sample</i>	Monthly

Table 4 - Effluent Monitoring (Samples to be collected at the outlet of the tertiary treatment filter)		
Parameters	Sample Type	Frequency
<i>CBOD5</i>	<i>Grab Sample</i>	Twice a month
Total Suspended Solids	<i>Grab Sample</i>	Twice a month
Total Phosphorus	<i>Grab Sample</i>	Twice a month
Total Ammonia Nitrogen	<i>Grab Sample</i>	Twice a month
<i>E. Coli</i>	<i>Grab Sample</i>	Twice a month
pH	<i>Grab Sample /Probe</i>	Twice a month
Temperature	<i>Grab Sample /Probe</i>	Twice a month

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)", as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal

Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.

(5) The temperature and pH of the effluent from the *Works* shall be determined in the field at the time of sampling for Total Ammonia Nitrogen. The concentration of Un-ionized Ammonia shall be calculated using the Total Ammonia Nitrogen concentration, pH and Temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for Ammonia (un-ionized).

(6) If the calculated value of Un-ionized Ammonia in the final effluent exceeds 0.05 mg/L and/or the Dissolved Oxygen levels in the final effluent drop to less than 5.0 mg/L, then on-site testing shall be done daily until the Un-ionized Ammonia and Dissolved Oxygen values return to the aforementioned values. If the Un-ionized Ammonia and the Dissolved Oxygen levels reach non-compliance criteria as stipulated in Condition 7(1), Table 2, then the *Owner* shall notify the District Office and also provide remediation measures/procedures to be undertaken.

(7) Sampling locations may only be changed or abandoned and new locations may be added following commencement of operation if, in the opinion of the *Water Supervisor*, it is necessary to do so to ensure representative samples are being collected.

(8) If the *Owner* monitors any of the effluent parameters required by subsection (3), at the designated locations and in accordance with subsection (4), more frequently than it is required by that condition, the analytical results of all such samples, both required and additional, shall be included in the calculating and reporting of the values required by this *Approval*, and increased frequency, or all dates of sampling, shall also be specified in the reports.

(9) The *Owner* shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the effluent from the *Works* with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a *daily* frequency.

(10) The *Owner* shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval*.

10. REPORTING

(1) **One week** prior to the start up of the operation of the *Proposed Works*, the *Owner* shall notify the *Water Supervisor* (in writing) of the pending start up date.

(2) **Ten (10) days** prior to the date of a planned *Bypass* being conducted pursuant to Condition 5 and as

soon as possible for an unplanned *Bypass*, the *Owner* shall notify the *Water Supervisor* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *Bypass*.

(3) The *Owner* shall report to the *Water Supervisor* or designate, any exceedence of any parameter specified in Condition 7 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedence.

(4) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *Water Supervisor* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(5) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(6) The *Owner* shall prepare and submit to the *Water Supervisor*, a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the *Works*;
- (b) a description of any operating problems encountered and corrective actions taken;
- (c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*;
- (d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;
- (e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;
- (f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6;
- (g) a tabulation of the volume of sludge generated in the reporting period, an outline of

anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

(h) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(i) a summary of all *Bypass*, spill or abnormal discharge events; and

(j) any other information the *Water Supervisor* requires from time to time.

11. LIMITED OPERATIONAL FLEXIBILITY

(1) The *Owner* may make *Modifications* to the *Works* in accordance with the terms and conditions of this *Approval* and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule A of this *Approval*, as amended.

(2) Sewage works under *Limited Operational Flexibility* shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The *Owner* shall ensure at all times, the *Works* and related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all terms and conditions of this *Approval*.

(4) For greater certainty, the following are not permitted as part of *Limited Operational Flexibility*:

(a) *Modifications* to the *Works* that result in an increase of the *Rated Capacity* of the *Works*;

(b) *Modifications* to the *Works* that adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

(c) *Modifications* to the *Works* approved under s.9 of the EPA, and

(d) *Modifications* to the *Works* pursuant to an order issued by the *Ministry*.

(5) Implementation of *Limited Operational Flexibility* is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of *Limited Operational Flexibility* requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the *Owner* shall provide a revised copy of this plan for approval to the local fire services authority prior to implementing *Limited Operational Flexibility*.

(7) For greater certainty, any alteration made under the *Limited Operational Flexibility* may only be

carried out after other legal obligations have been complied with including those arising from the *Environmental Protection Act* , *Niagara Escarpment Planning and Development Act* , *Oak Ridges Moraine Conservation Act* , *Lake Simcoe Protection Act* and *Greenbelt Act*.

(8) Prior to implementing *Limited Operational Flexibility*, the *Owner* shall complete a *Notice of Modifications* describing any proposed *Modifications* to the *Works* and submit it to the *Water Supervisor*.

Schedule A

Limited Operational Flexibility Criteria for Modifications to Sewage Works

The *Modifications* to sewage works approved under an Environmental Compliance Approval (ECA) that are permitted under the *Limited Operational Flexibility* (LOF), are outlined below and are subject to the LOF conditions in the ECA. For clarity proposes, *Modifications* of equipment **does not** include process equipment where treatment unit operations occur, including but not limited to: screens, grit separators, blowers, oxygen diffusers, sludge thickeners and dewatering equipment, UV systems, chlorine contact tanks, bio-disks, digester gas handling systems, and process reactors.

Modifications of sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this *Limited Operational Flexibility*. If there is a conflict between the list of sewage works listed below and the conditions in the ECA, the conditions in the ECA shall take precedence.

The following sewage works are permitted under *Limited Operational Flexibility*, and as per the conditions in the *Approval*:

1.0 Sewage Pumping Stations

- 1.1 Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, where the facility rated capacity is not exceeded and while maintaining the existing flow process and/or treatment train, if applicable.
- 1.2 Replacing existing minor equipment with *Equivalent equipment* of different make and model, provided that there are no treatment process changes as a result of the replacement.

2.0 Inlet Works

- 2.1 Replacing existing minor equipment with *Equivalent equipment* of different make and model.

3.0 Sewage Treatment Process

- 3.1 Install or replace instrumentation or chemical dosage equipment for operational or maintenance purposes including replacing chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no *Modifications* of treatment processes or other *Modifications* that may alter the intent of operations and may have negative impacts on *Works'* effluent quantity and quality.
- 3.2 Expansion of buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses where the buffer zone is entirely on the proponent's land.
- 3.3 Optimize existing sanitary sewage lagoons with the purpose to increase efficiency of treatment

operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.

- 3.4 Replacing existing minor equipment with *Equivalent equipment* of different make and model, provided that there are no treatment process changes as a result of the replacement.

4.0 Sewage Treatment Process Outfall

- 4.1 Replacement of discharge pipe with similar pipe size provided that the outfall location is not changed.

5.0 Sanitary Sewers

- 5.1 Pipe relining and replacement with similar pipe size to the approved site location's existing sanitary sewers and forcemains sewage collection system. The sewer main *Modifications* shall not include combined sewers.
- 5.2 Sanitary gravity sewers and forcemains within the approved site location, except those with a nominal diameter greater than 1,200 mm.

6.0 Stormwater Management System

- 6.1 *Modifications* of stormwater management works to service the existing approved drainage area located within the site, provided that there is no increase in the average impervious area established in the original design and the discharges from the site will not exceed the attenuated flows established in the original design.
- 6.2 Installation of new oil grit separators.

7.0 Pilot Systems

- 7.1 Installation of pilot systems for new or existing technologies provided that:
- (a) any effluent from the pilot system is discharged to the inlet of the main sewage treatment plant or hauled off-site for proper disposal,
 - (b) any effluent from the pilot system discharged to the inlet of the main sewage treatment plant does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
 - (c) the pilot system's duration be of up to a maximum of **two years**; and a report with results is submitted to the *Director* and *Water Supervisor* **three months** after completion of the pilot project



Notice of Modification to Sewage Works

Ministry of
the Environment

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL SYSTEMS) OR DISTRICT MANAGER (FOR INDUSTRIAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility
(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Owner	ECA number	Issuance Date (mm/dd/yy)	Notice number
-----------	------------	-----------------------------	---------------

Part 2 – Description of the modifications as part of the Limited Operational Flexibility
(Attach a detailed description of the sewage works)

Description shall include:

1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:

1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number
Signature	Date (mm/dd/yy)
Name of Employer	

Part 4 – Declaration by Owner

I hereby declare that:

1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)
Owner Representative's Signature	Date (mm/dd/yy)

Schedule B

Environmental Compliance Approval (ECA) supporting documents:

1. Environmental Study Report (dated September 1999), design report (dated January 2000), final plans and specifications prepared by Triton Engineering Services Limited;
2. Environmental Compliance Approval Application for Sewage Works dated September 10, 2013 signed by Dave Milliner, and cover letter submitted by Christine M. Furlong, P.Eng. of Triton Engineering Services Limited, Consulting Engineers, dated September 19, 2013;
3. Design Brief entitled "Community of Dundalk Sewage Treatment Works Energy Efficiency Upgrades", dated September, 2013 and prepared, Triton Engineering Services Limited; and
4. A set of Engineering Drawings entitled "Upgrades to Dundalk Sewage Lagoons Township of Southgate", Project No. 4607-00, dated September 2013.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Approval* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Approval* the existence of this *Approval*.
2. Condition 2 is included to ensure that the *Works* are constructed in a timely manner so that standards applicable at the time of Approval of the *Works* are still applicable at the time of construction, to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Approval* and continue to operate the *Works* in compliance with it.
4. Condition 4 is included to ensure that the *Works* are constructed in accordance with the approval and that record drawings of the *Works* "as constructed" are maintained for future references.
5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to *Bypass* could result in greater injury to the public interest than the *Bypass* itself where a *Bypass* will not violate the approved effluent requirements, or where the *Bypass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *Bypass* events.

6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.
7. Condition 7 is imposed to ensure that the effluent discharged from the *Works* to the receiver meets the *Ministry*'s effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.
8. Condition 8 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a manual is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner*'s operation of the work.
9. Condition 9 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.
10. Condition 10 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Approval*, so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.
11. Condition 11 is included to ensure that the *Works* are operated in accordance with the application and supporting documentation submitted by the *Owner*, and not in a manner which the *Director* has not been asked to consider. These conditions are also included to ensure that a Professional Engineer has reviewed the proposed *Modifications* and attests that the *Modifications* are in line with that of *Limited Operational Flexibility*, and provide assurance that the proposed *Modifications* comply with the *Ministry*'s requirements stipulated in the terms and conditions of this *Approval*, MOE policies, guidelines, and industry engineering standards and best management practices.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).
7585-4GYHR7 issued on March 16, 2000**

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in

- respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

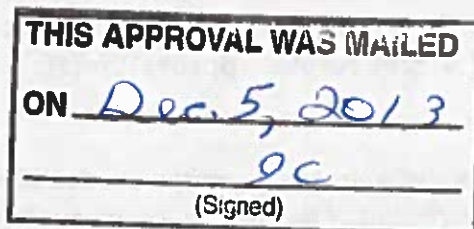
AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 2nd day of December, 2013



Edgardo Tovilla
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

YK/

c: DWMD Supervisor, MOE Owen Sound
Christine Furlong, P. Eng., Triton Engineering Services Limited ✓

Appendix B

**2021 Dundalk Reserve
Capacity Calculations**



**TRITON
ENGINEERING
SERVICES
LIMITED**
Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • GRAVENHURST

April 14, 2021

Township of Southgate
R.R. #1
185667 Grey Road 9
DUNDALK, Ontario
N0C 1B0

ATTENTION: Jim Ellis,
Public Works Manager

RE: TOWNSHIP OF SOUTHGATE
DUNDALK WATER SUPPLY AND
SEWAGE TREATMENT SYSTEMS
HYDRAULIC RESERVE CAPACITY
OUR FILE: A4160(21)-R04

Dear Sir:

The attached tables outline the 2021 reserve capacity calculations for the water supply and sewage treatment systems in Dundalk. The reserve capacities have been calculated in accordance with Ministry of Environment and Conservation and Parks (MECP) guidelines. **139** new residential units were occupied and connected to the municipal systems in Dundalk in 2020.

Table 3 provides a summary of Committed Developments which include Flato Phases 3-6, Flato Glenelg Development Phase 1 and the Flato West Apartment Building, totalling **631** equivalent residential units (ERUs). As Committed Development, these ERUs will not come out of the Uncommitted Reserve Capacity figures indicated on Tables 1 and Table 2. Table 3 also outlines the various potential developments that have been granted Draft Plan Approval, however have not been granted allocation.

Water System:

The three (3) year average maximum day demand of the water system increased from 786m³/d to **918m³/d** over the past year. The 2021 uncommitted reserve capacity of the water system is **1,526 ERU**. This is based on the Townships' amount of water taking permitted by the Permit to Take Water and draft plan approved/committed developments as outlined in Table 3. The Permit to Take Water, indicates an allowable water taking of 2,817m³/day.

Refer to Table 1 for additional information regarding water system reserve capacity calculations.



Sewage Treatment Facility:

Table 2 summarizes the sewage treatment reserve capacity calculations for 2021. The three-year annual average day flow decreased from 1,129 m³/d to **1,127m³/d**. The 2020 uncommitted reserve capacity for the sewage treatment facility is **127** new development ERUs.

Refer to Table 2 for additional information regarding sewage treatment system reserve capacity calculations.

Extraneous Flow:

Additionally, in conjunction with the reserve capacity calculations, we have completed a high-level assessment of the extraneous flows within the Dundalk sewage collection system. This assessment compares the precipitation, temperature, average day demand of water and the average day sewage flow measured at the WWTP on a monthly basis. The results indicate that the extraneous flows over and above the expected amount within a typical system is, on average, **356m³/day**, which equates to an estimated **383 ERUs**. The relationship between the wastewater flows, precipitation and temperature is indicative of a system that is subject to groundwater infiltration, as opposed to direct inflow. This is based on peaking of wastewater flows noted during the spring melt (i.e. March & April) with little correlation noted to times of high precipitation but lower groundwater levels (i.e. July & August). Sump pump connections are likely a significant contributor.

Recommendation:

Following Council's review and adoption of the attached report, we would recommend that a copy of the report be forwarded to the MECP District Office in Owen Sound and the Grey County Planning Department. We trust you will find the enclosed to be in order. Should you have any questions, please do not hesitate to contact this office.

Yours very truly,

TRITON ENGINEERING SERVICES LIMITED



Dustin Lyttle, P. Eng.

cc: Dave Milliner, Township of Southgate
Clinton Stredwick, Township of Southgate
Bev Fisher, Township of Southgate

**TABLE 1
TOWNSHIP OF SOUTHGATE
2021 RESERVE CAPACITY
DUNDALK WATER SYSTEM**

DESCRIPTION	2020
1 Available Capacity ¹	2,817
2 Max Day Flow (m ³ /d) ²	918
3 Reserve Capacity (m ³ /d) (1) - (2)	1,899
4 Serviced Households ³	1,067
5 Persons Per Existing Residential Unit (2016 Census Data)	2.60
6 Population Served (4) x (5)	2,774
7 Maximum Day Per Capita Flow (m ³ /d) (2) ÷ (6)	0.331
8 Additional Population that can be Served (3) ÷ (7)	5,739
9 Person Per New Equivalent Residential Unit (2017 DC Background Study)	2.66
10 Additional ERUs that can be served. (8) ÷ (9)	2,157
11 Committed Development ERUs (Table 3)	631
12 Uncommitted Reserve Capacity (ERUs) (10) - (11)	1,526
¹ Available Capacity is based on lesser of Firm Capacity or Permit to Take Water. Firm capacity is 2,817m ³ /day, PTTW is 2,817m ³ /d, Well Production is 4,778m ³ /day.	
² Max day flow is the average of the maximum day flows from 2018, 2019 and 2020 (742, 913 and 905m ³ /d respectively). Maximum day flows have been adjusted based on extenuating circumstances.	
³ Serviced households as reported in the 2020 Annual Water Report.	



**TABLE 2
TOWNSHIP OF SOUTHGATE
2021 RESERVE CAPACITY
DUNDALK SEWAGE TREATMENT FACILITY**

DESCRIPTION	2020
1 Design Capacity of Sewage Treatment Facility (m ³ /d)	1,832
2 Average Day Flow ¹ (m ³ /d) (Average of 2018, 2019 and 2020 Average Day Flows)	1,127
3 Reserve Capacity (m ³ /d) (1) - (4)	705
4 Average New Development Per Capita Flow ² (m ³ /d)	0.350
5 Additional Population that can be Served (3) ÷ (4)	2,015
6 Person Per Equivalent Residential Unit (2017 DC Background Study)	2.66
7 ERU Flow Rate (m ³ /d) (4) x (6)	0.931
8 Additional ERUs that can be Served (5) ÷ (6)	758
9 Committed Development ERUs (Table 3)	631
10 Uncommitted Reserve Capacity (ERUs) (7) - (8)	127
¹ Average of the average day flows in 2018, 2019 and 2020 (1,105, 1,114 and 1,161m ³ /day respectively).	
² As determined by new development flow analysis supported by flow monitoring program.	



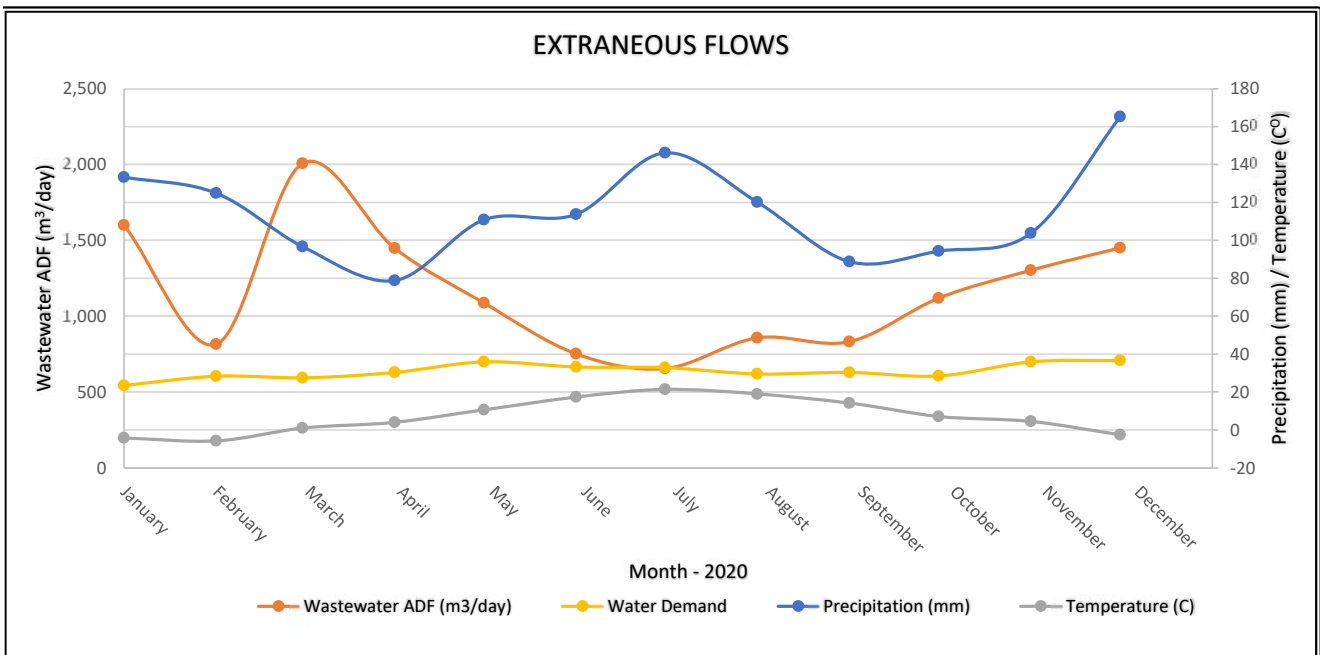
**TABLE 3
TOWNSHIP OF SOUTHGATE
2021 RESERVE CAPACITY
SUMMARY OF DUNDALK DEVELOPMENTS**

COMMITTED DEVELOPMENTS	TOTAL UNITS	UNITS OCCUPIED IN 2020	REMAINING UNITS AT END OF 2020
White Rose (Phase 1 & 2)	66	52	14
Flato East (Phase 2B)	38	38	0
Flato North (Phase 2A)	72	72	0
Flato North (Phase 3)	46	8	38
Flato North (Phase 4)	22	0	22
Flato North (Phase 5)	59	0	59
Flato North (Phase 6)	68	0	68
Flato Glenelg (Phase 1)	183	0	183
Flato West Block 75 (Phase 2) Apartment Building ¹	56	0	56
Flato East (7, 8 & 10)	188	0	188
SUB-TOTAL		170	628
INFILL LOTS ²	3		3
TOTAL COMMITTED UNITS			631
UNCOMMITTED DEVELOPMENT (DRAFT PLAN APPROVED)	TOTAL UNITS		
White Rose (Phase 3)	101		
Flato East (Phase 9)	47		
Flato East (11, 12 & 13)	227		
SUB-TOTAL	375		
¹ Apartment units based on assumption that each unit is 0.7 ERU.			
² 3 Infill Lots allocated annually.			



**TABLE 4
TOWNSHIP OF SOUTHGATE
2021 RESERVE CAPACITY
DUNDALK EXTRANEOUS FLOWS**

MONTH	PRECIPITATION (mm)	AMBIENT TEMP. (C°)	WASTEWATER ADF (m ³ /day)	WATER ADD (m ³ /day)	EXTRANEOUS FLOW (m ³ /day) ¹
January-2020	133.4	-4.15	1,600	544	1,056
February-2020	125	-5.68	816	605	211
March-2020	96.8	1.02	2,008	595	1,413
April-2020	78.8	4.06	1,449	629	820
May-2020	110.9	10.66	1,087	700	387
June-2020	113.8	17.40	752	665	87
July-2020	146.2	21.38	656	661	0
August-2020	120.2	19.00	857	620	237
September-2020	88.8	14.26	832	630	202
October-2020	94.4	7.16	1,120	606	514
November-2020	103.8	4.54	1,304	700	604
December-2020	165.2	-2.48	1,450	708	742
AVERAGE			1,161	639	523
REASONABLE EXTRANEOUS FLOW BASED ON POPULATION(m³/day)¹					166
EXTRANEOUS FLOW OVER AND ABOVE REASONABLE AMOUNT(m³/day)					356
EQUIVALENT RESIDENTIAL UNITS USED BY EXTRANEOUS FLOWS (ERU)²					383
¹ This is the Wastewater ADF minus the Water ADD, used to determine Sanitary Flow over and above expected.					
² Expected infiltration is 60 Litres per person per day based on modified historic MOE Standard.					
³ Based on New Development Equivalent Residential Unit Sanitary Flow Rate					



Appendix C

Water Chemistry Data

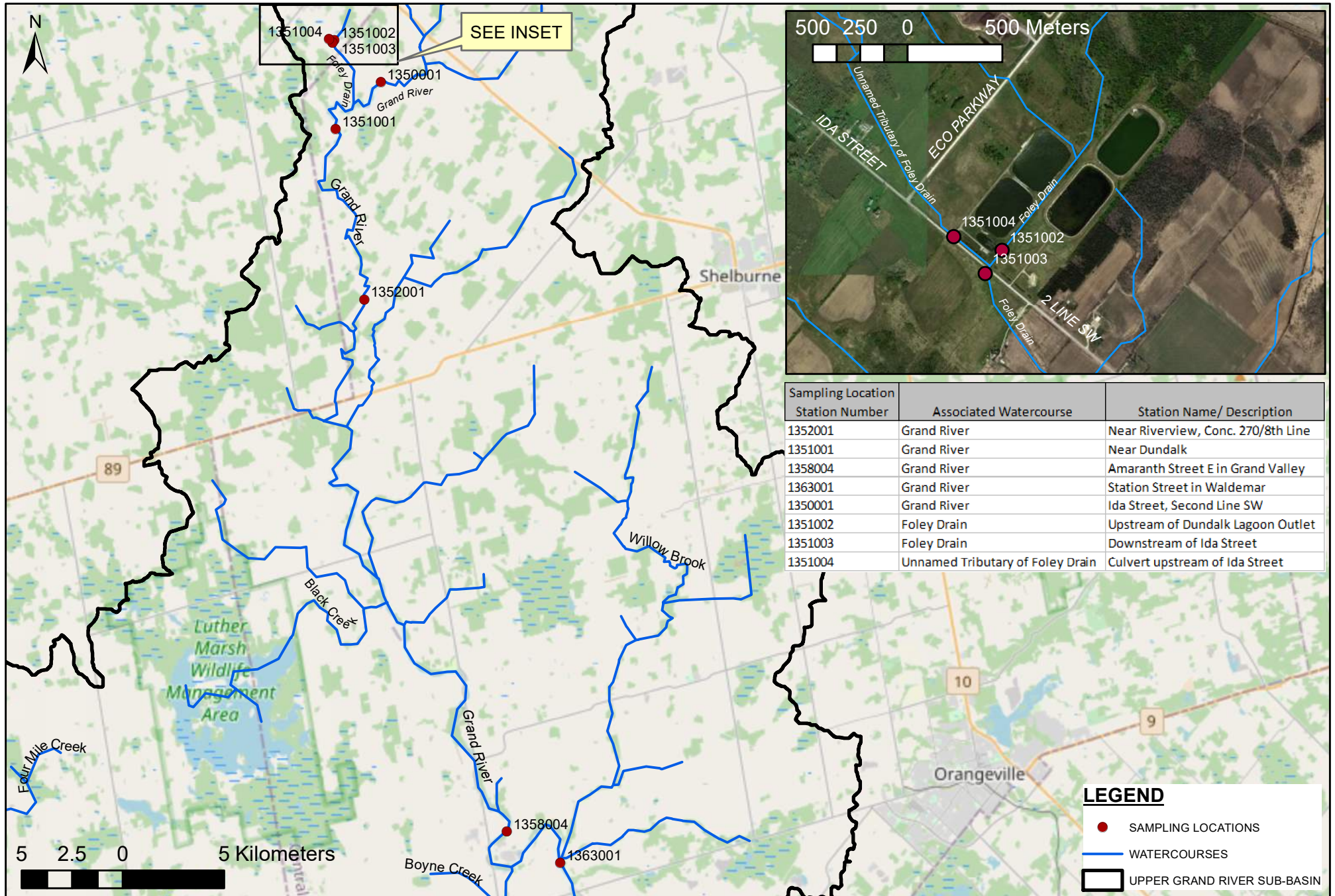
Appendix C.1

2015-2016 Sampling Data Summary

FIGURE 1

UPPER GRAND RIVER SUB-BASIN SAMPLING LOCATIONS (GRCA)

DUNDALK SEWAGE LAGOONS- ASSIMILATIVE CAPACITY STUDY



	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NO3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1350001	Grand River at Ida Street, Second Line SW														
14-Aug-15	19.98	8.25	632	8.06				29	1.06	1.08	0.021			0.024	4.0
18-Aug-15	22.63	8.37	648	7.25				31	0.98	1.02	0.039			0.029	3.0
25-Aug-15	17.33	8.41	647	9.47	< 0.05	< 0.004		34	0.89	0.9	0.011	0.70	< 0.01	0.025	4.0
03-Sep-15	27.18	8.66	680	11.16	0.069	0.017		36	1.03	1.06	0.032	0.74	< 0.01	0.021	4.0
09-Sep-15	17.23	8.27	504	9.24	< 0.05	< 0.003		24	0.99	1.01	0.021	0.97	0.017	0.071	5.0
17-Sep-15	19.60	8.05	627	10.07	0.10	0.004		30	0.58	0.59	0.012	0.72	< 0.01	0.020	3.0
24-Sep-15	17.54	8.10	671	7.87	< 0.05	< 0.002		61	0.86	0.88	0.016	0.58	< 0.01	0.019	3.0
02-Oct-15	8.24	8.00	693	10.46	< 0.05	< 0.001		38	1.04	1.06	0.011	0.37	< 0.01	0.016	3.0
07-Oct-15	12.62	7.98	689	9.43	< 0.05	< 0.001		35	1.14	1.15	0.011	0.44	< 0.01	0.015	4.0
13-Oct-15	12.64	8.24	683	9.62	< 0.05	< 0.002		36	0.99	1.01	0.015	0.54	< 0.01	0.021	4.0
22-Oct-15	11.63	8.11	658	11.24	< 0.05	< 0.001		30	1.18	1.18	< 0.010	0.54	< 0.01	0.016	3.0
26-Oct-15	6.91	8.33	678	12.33	< 0.05	< 0.002		30	1.12	1.12	< 0.010	0.59	< 0.01	0.019	2.0
21-Jan-16	-0.19	7.76	515	12.30	< 0.05	< 0.000		18	1.95	1.95	< 0.010	0.60	< 0.01	0.011	3.0
28-Jan-16	0.27	7.88	547	12.34	< 0.05	< 0.000		16	1.56	1.56	< 0.010	0.48	< 0.01	0.021	6.0
03-Feb-16	1.85	8.12	454	11.82	< 0.05	< 0.001		16	2.12	2.12	< 0.010	0.60	0.011	0.035	10.0
09-Feb-16	0.66	7.72	464	13.00	< 0.05	< 0.000		16	2.24	2.24	< 0.010	0.59	< 0.01	0.012	3.0
17-Feb-16	-0.06	7.63	532	13.20	< 0.05	< 0.000		18	2.73	2.73	< 0.010	0.41	< 0.01	0.009	2.0
23-Feb-16	0.67	7.78	465	15.23	< 0.05	< 0.000		15	2.22	2.22	< 0.010	0.52	< 0.01	0.014	3.0
10-Mar-16	1.65	7.70	284	12.05	< 0.05	< 0.000		7.9	1.27	1.27	< 0.010	0.39	0.014	0.052	13.0
14-Mar-16	2.49	7.76	335	13.19	< 0.05	< 0.000		10	1.4	1.4	< 0.010	0.41	< 0.01	0.020	4.0
Max	27.18	8.66	693	15.23	0.10	0.017		61.0	2.73	2.73	0.039	0.97	0.017	0.071	13.0
Min	-0.19	7.63	284	7.25	< 0.05	< 0.000		7.9	0.58	0.59	< 0.010	0.37	< 0.01	0.009	2.0
Average	10.04	8.06	570	10.97	< 0.05	< 0.002		26.5	1.37	1.38	< 0.014	0.57	< 0.01	0.024	4.3
Mean	9.94	8.08	630	11.20	< 0.05	< 0.001		29.5	1.13	1.14	0.011	0.56	0.01	0.020	3.5
75 Percent	17.38	8.26	673	9.46	< 0.05	0.002		34.3	1.66	1.66	0.015	0.60	0.01	0.024	4.0

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NO3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1351002 Foley Drain Upstream of Dundalk Lagoon Outlet															
24-Sep-15	14.80	8.05	716	8.11	< 0.05	< 0.001	< 2	34	< 0.1	< 0.1	< 0.01	0.68	< 0.01	0.016	2
02-Oct-15	7.04	8.07	704	10.47	< 0.05	< 0.001	4	49	< 0.1	< 0.1	< 0.01	0.68	< 0.01	0.022	4
07-Oct-15	12.72	7.98	704	9.41	< 0.05	< 0.001	2	49	< 0.1	< 0.1	< 0.01	0.68	< 0.01	0.047	29
13-Oct-15	12.36	8.17	714	8.86	< 0.05	< 0.002	2	62	< 0.1	< 0.1	< 0.01	0.68	< 0.01	0.018	14
22-Oct-15	12.09	8.16	712	13.20	< 0.05	< 0.002	2	71	< 0.1	< 0.1	< 0.01	0.62	< 0.01	0.017	3
26-Oct-15	5.49	8.41	672	13.60	< 0.05	< 0.002	2	67	< 0.1	< 0.1	< 0.01	0.58	< 0.01	0.015	< 1
21-Jan-16	-0.15	7.63	603	13.79	< 0.05	< 0.000	2	37	1.21	1.21	< 0.01	0.46	< 0.01	0.016	3
28-Jan-16	-0.40	7.50	677	12.06	< 0.05	< 0.000	2	65	1.12	1.12	< 0.01	0.45	< 0.01	0.014	3
03-Feb-16	0.62	7.57	555	11.65	< 0.05	< 0.000	2	49	1.25	1.25	< 0.01	0.42	0.011	0.029	9
09-Feb-16	0.53	7.67	567	13.30	< 0.05	< 0.000	2	39	1.22	1.22	< 0.01	0.47	< 0.01	0.011	2
17-Feb-16	0.03	8.01	636	12.91	< 0.05	< 0.000	2	43	1.03	1.03	< 0.01	0.47	< 0.01	0.013	3
23-Feb-16	0.02	7.77	561	13.33	< 0.05	< 0.000	2	36	1.34	1.34	< 0.01	0.44	< 0.01	0.015	3
10-Mar-16	1.08	7.77	354	12.96	< 0.05	< 0.000	2	23	1.08	1.08	< 0.01	0.38	< 0.01	0.031	3
14-Mar-16	2.64	7.68	438	12.46	< 0.05	< 0.000	2	30	0.92	0.92	< 0.01	0.37	< 0.01	0.019	4
Max	14.80	8.41	716	13.79	< 0.05	< 0.002	4	71	1.34	1.34	< 0.01	0.68	0.011	0.047	29
Min	5.49	7.98	672	8.11	< 0.05	< 0.001	2	34	< 0.1	< 0.1	< 0.01	0.58	< 0.01	0.015	< 1
Average		7.89	615	11.87	< 0.05	< 0.001	2.1	46.7	< 0.70	< 0.70	< 0.01	0.53	< 0.01	0.020	5.9
Mean		7.88	654	12.69	< 0.05	< 0.000	2	46	< 0.98	< 0.98	< 0.01	0.47	< 0.01	0.017	3
75 Percent		8.07	704.0	10.77	< 0.05	< 0.001	2	58.8	1.19	1.19	< 0.01	0.665	< 0.01	0.021	4

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1351003															
Foley Drain at Downstream of Ida Street															
24-Sep-15	18.05	8.12	741	8.86	< 0.05	< 0.002	9	110	0.58	0.58	< 0.01	0.92	< 0.01	0.055	5
02-Oct-15	12.08	7.81	747	10.50	< 0.05	< 0.001	4	120	0.45	0.45	< 0.01	0.77	< 0.01	0.042	2
07-Oct-15	11.94	7.66	763	10.95	< 0.05	< 0.000	< 2	130	0.41	0.41	< 0.01	1.00	< 0.01	0.080	8
13-Oct-15	13.29	7.87	776	9.97	< 0.05	< 0.001	< 2	130	0.32	0.32	< 0.01	1.10	< 0.01	0.079	10
22-Oct-15	10.37	7.90	772	12.13	< 0.05	< 0.001	< 2	110	0.11	0.11	< 0.01	0.64	< 0.01	0.044	1
26-Oct-15	6.92	8.30	715	13.57	< 0.05	< 0.001	< 2	96	< 0.10	< 0.10	< 0.01	0.80	< 0.01	0.029	< 1
21-Jan-16	-0.18	7.57	729	14.49	0.53	0.002	< 2	71	1.02	1.02	< 0.01	1.00	< 0.01	0.012	1
28-Jan-16	-0.03	7.46	704	11.66	< 0.05	< 0.000	< 2	70	0.88	0.88	< 0.01	0.34	< 0.01	0.014	2
03-Feb-16	0.34	7.42	555	11.11	< 0.05	< 0.000	< 2	55	1.10	1.10	< 0.01	0.48	< 0.01	0.029	10
09-Feb-16	0.43	7.64	606	12.90	< 0.05	< 0.000	< 2	49	0.89	0.89	< 0.01	0.40	< 0.01	0.011	2
17-Feb-16	0.18	7.47	777	12.92	2.00	0.005	< 2	77	0.80	0.83	< 0.04	2.40	< 0.01	0.023	2
23-Feb-16	0.20	7.66	617	15.14	0.70	0.003	< 2	44	1.18	1.18	< 0.01	1.10	< 0.01	0.016	3
10-Mar-16	0.56	7.57	421	12.42	0.21	0.001	< 2	29	0.92	0.92	< 0.01	0.55	< 0.01	0.029	3
14-Mar-16	2.67	7.62	446	12.91	0.20	0.001	< 2	34	0.78	0.78	< 0.01	0.58	< 0.01	0.019	3
Max	18.05	8.30	777	15.14	2.00	0.005	9	130	1.18	1.18	< 0.04	2.40	< 0.01	0.080	10
Min	-0.18	7.42	421	8.86	< 0.05	< 0.000	< 2	29	< 0.10	< 0.10	< 0.01	0.34	< 0.01	0.011	1
Average		7.72	669	12.11	< 0.29	< 0.001	2.6	80	0.68	0.68	< 0.01	0.86	< 0.01	0.034	3.8
Mean		7.65	722	12.28	< 0.05	< 0.001	< 2	74	0.79	0.81	< 0.01	0.79	< 0.01	0.029	2.5
75 Percent		7.86	759	10.99	< 0.21	< 0.002	< 2	110	0.91	0.91	< 0.01	1.00	< 0.01	0.044	4.5

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1351004	Unnamed Tributary of Foley Drain at Culvert upstream of Ida Street														
24-Sep-15	11.73	7.75	726	2.50	< 0.05	< 0.001	< 2	69	< 0.1	< 0.1	< 0.01	0.53	< 0.01	0.039	8
13-Oct-15	11.22	7.47	741	4.39	< 0.05	< 0.000	< 2	78	< 0.1	< 0.1	< 0.01	0.58	< 0.01	0.042	7
22-Oct-15	9.73	7.37	755	4.81	< 0.05	< 0.000	< 2	77	< 0.1	< 0.1	< 0.01	0.46	< 0.01	0.016	1
26-Oct-15	5.07	8.09	694	9.35	< 0.05	< 0.001	< 2	74	< 0.1	< 0.1	< 0.01	0.45	< 0.01	0.021	< 1
21-Jan-16	-0.18	7.57	729	14.49	< 0.05	< 0.000	< 2	84	< 0.1	< 0.1	< 0.01	0.31	0.013	0.017	10
28-Jan-16	-0.40	7.42	798	9.88	< 0.05	< 0.000	< 2	93	< 0.1	< 0.1	< 0.01	0.30	< 0.01	0.015	1
03-Feb-16	-0.03	7.62	572	10.25	< 0.05	< 0.000	< 2	70	< 0.1	< 0.1	< 0.01	0.31	< 0.01	0.017	1
09-Feb-16	-0.04	7.63	727	11.85	< 0.05	< 0.000	< 2	96	< 0.1	< 0.1	< 0.01	0.26	< 0.01	0.012	1
17-Feb-16	0.04	7.72	835	8.70	< 0.05	< 0.000	< 2	100	< 0.1	< 0.1	< 0.01	0.33	0.014	0.230	36
23-Feb-16	-0.03	7.75	750	11.38	< 0.05	< 0.000	< 2	100	< 0.1	< 0.1	< 0.01	0.32	0.012	0.011	1
10-Mar-16	0.97	7.53	383	12.85	< 0.05	< 0.000	< 2	46	0.27	0.27	< 0.01	0.28	< 0.01	0.022	3
14-Mar-16	2.14	7.65	792	12.54	< 0.05	< 0.000	< 2	49	< 0.1	< 0.1	< 0.01	0.24	< 0.01	0.015	1
Max	11.73	8.09	835	14.49	< 0.05	< 0.001	< 2	100	0.27	0.27	< 0.01	0.58	0.014	0.230	36
Min	-0.4	7.37	383	2.50	< 0.05	< 0.000	< 2	46	< 0.10	< 0.10	< 0.01	0.24	< 0.01	0.011	< 1
Average		7.63	709	9.42	< 0.05	< 0.000	< 2	78	< 0.11	< 0.11	< 0.01	0.36	< 0.01	0.038	5.9
Mean		7.63	735	10.07	< 0.05	< 0.000	< 2	77.5	< 0.1	< 0.1	< 0.01	0.32	< 0.01	0.017	1
75 Percent		7.73	764	7.73	< 0.05	< 0.000	< 2	93.8	< 0.1	< 0.1	< 0.01	0.45	< 0.011	0.026	7.3

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NO3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1352001	Grand River at Near Riverview, Conc. 270/8th Line														
14-Aug-15	21.25	8.44	501	8.78				28	< 0.1	< 0.1	< 0.01			0.034	3
18-Aug-15	19.25	8.54	542	9.95				33	< 0.1	< 0.1	< 0.01			0.031	10
25-Aug-15	19.25	8.54	542	9.95	< 0.05	< 0.006		35	< 0.1	< 0.1	< 0.01	0.76	< 0.01	0.031	7
03-Sep-15	26.98	8.78	531	10.39	< 0.05	< 0.014		32	< 0.1	< 0.1	< 0.01	0.82	< 0.01	0.029	4
09-Sep-15	18.56	8.39	503	9.16	< 0.05	< 0.004		30	0.51	0.54	0.027	0.63	< 0.01	0.044	9
17-Sep-15	20.20	8.13	516	10.99	0.078	0.004		28	< 0.1	< 0.1	< 0.01	0.74	< 0.01	0.025	11
24-Sep-15	20.01	8.24	527	9.54	< 0.05	< 0.003		29	< 0.1	< 0.1	< 0.01	0.78	< 0.01	0.021	5
02-Oct-15	9.35	8.16	527	11.35	< 0.05	< 0.001		33	< 0.1	< 0.1	< 0.01	0.59	< 0.01	0.019	3
07-Oct-15	14.58	8.27	541	11.55	< 0.05	< 0.002		37	< 0.1	< 0.1	< 0.01	0.65	< 0.01	0.025	4
13-Oct-15	12.93	8.36	591	10.38	< 0.05	< 0.003		45	< 0.1	< 0.1	< 0.01	0.69	< 0.01	0.019	3
22-Oct-15	12.10	8.19	614	11.14	< 0.05	< 0.002		59	< 0.1	< 0.1	< 0.01	0.64	< 0.01	0.020	3
26-Oct-15	9.10	8.37	620	12.85	< 0.05	< 0.002		47	0.24	0.24	< 0.01	0.57	< 0.01	0.022	2
21-Jan-16	-0.18	7.78	543		< 0.05	< 0.000		22	1.81	1.81	< 0.01	0.59	< 0.01	0.009	2
28-Jan-16	-0.03	7.60	555	13.07	< 0.05	< 0.000		25	1.41	1.41	< 0.01	0.2	< 0.01	0.009	1
03-Feb-16	0.63	7.69	415	11.86	< 0.05	< 0.000		16	2.03	2.03	< 0.01	0.55	< 0.01	0.041	13
09-Feb-16					< 0.05			18	2.21	2.21	< 0.01	0.54	< 0.01	0.008	2
17-Feb-16	0.03	7.48	560	13.74	0.13	< 0.000		23	2.38	2.38	< 0.01	0.54	< 0.01	0.007	1
23-Feb-16	0.87	7.96	459	14.97	< 0.05	< 0.000		17	1.9	1.9	< 0.01	0.54	< 0.01	0.013	4
10-Mar-16	1.84	7.73	292	12.64	< 0.05	< 0.000		10	1.22	1.22	< 0.01	0.39	0.012	0.045	11
14-Mar-16	3.11	7.84	357	13.26	< 0.05	< 0.000		12	1.48	1.48	< 0.01	0.41	< 0.01	0.014	3
Max	26.98	8.78	620	14.97	0.13	0.014		59	2.38	2.38	0.03	0.82	< 0.01	0.045	13
Min	-0.18	7.48	292	8.78	< 0.05	< 0.000		10	< 0.10	< 0.10	< 0.01	0.20	< 0.01	0.007	1
Average	11.04	8.13	512	11.42	< 0.06	< 0.002		29	< 0.81	< 0.81	< 0.01	0.59	< 0.01	0.023	5
Mean	12.10	8.19	531	11.25	< 0.05	0.002		29	< 0.17	0.17	< 0.01	0.59	< 0.01	0.022	4
75 Percent	1.36	7.81	502	10.06	< 0.05	0.003		34	1.56	1.56	0.01	0.68	< 0.01	0.031	8

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP			
1357002	Grand River at Rural community of Leggatt																	
14-Aug-15	21.51	8.82	250	8.70					8.8	<	0.1	<	0.1	<	0.01	0.039	7	
18-Aug-15	23.84	8.84	200	8.91					6.4	<	0.1	<	0.1	<	0.01	0.041	7	
25-Aug-15	19.51	8.93	256	9.89	<	0.05	<	0.012	9.4	<	0.1	<	0.1	<	0.01	0.033	5	
03-Sep-15	25.54	9.08	199	9.81	<	0.05	<	0.021	5.7	<	0.1	<	0.1	<	0.01	0.032	6	
09-Sep-15	19.32	8.59	458	9.94	<	0.05	<	0.006	25	<	0.1	<	0.1	<	0.01	0.038	9	
17-Sep-15	21.38	8.62	238	10.13	<	0.05	<	0.008	7.6	<	0.1	<	0.1	<	0.01	0.023	4	
24-Sep-15	19.84	8.54	209	8.88	<	0.05	<	0.006	5.5	<	0.1	<	0.1	<	0.01	0.024	6	
02-Oct-15	11.30	8.63	189	20.92	<	0.05	<	0.004	4.3	<	0.1	<	0.1	<	0.01	0.019	2	
07-Oct-15	13.73	8.56	204	11.23	<	0.05	<	0.004	5.1	<	0.1	<	0.1	<	0.01	0.016	3	
13-Oct-15	13.35	8.63	231	10.42	<	0.05	<	0.005	6	<	0.1	<	0.1	<	0.01	0.020	6	
22-Oct-15	10.92	8.33	270	11.14	<	0.05	<	0.002	8.7	<	0.1	<	0.1	<	0.01	0.020	3	
26-Oct-15	8.67	8.54	355	12.85	<	0.05	<	0.003	14	<	0.1	<	0.1	<	0.01	0.021	2	
21-Jan-16	-0.18	7.99	461	7.99	<	0.05	<	0.000	16	1.56	1.56	<	0.01	0.53	<	0.01	0.008	2
28-Jan-16	0.02	7.68	506	14.04	<	0.05	<	0.000	19	1.46	1.46	<	0.01	0.15	<	0.01	0.010	2
03-Feb-16	1.14	7.64	374	12.06	<	0.05	<	0.000	13	2.12	2.12	<	0.01	0.58	0.016	0.059	13	
09-Feb-16					<	0.05			16	2.29	2.29	<	0.01	0.53	<	0.01	0.010	2
17-Feb-16	-0.05	7.73	467	14.25	<	0.05	<	0.000	23	1.8	1.8	<	0.01	0.6	<	0.01	0.091	40
23-Feb-16	0.76	8.00	430	15.65	<	0.05	<	0.000	14	1.77	1.77	<	0.01	0.38	0.034	0.015	3	
10-Mar-16	1.82	7.74	287	12.84	<	0.05	<	0.000	9.2	1.22	1.22	<	0.01	0.36	0.012	0.049	14	
14-Mar-16	3.75	7.91	382	13.18	<	0.05	<	0.000	12	1.81	1.81	<	0.01	0.41	<	0.01	0.016	2
Max	25.54	9.08	506	20.92	<	0.05	<	0.021	25	2.29	2.29	<	0.01	0.69	0.034	0.091	40	
Min	-0.18	7.64	189	8.70	<	0.05	<	0.000	4.3	<	0.1	<	0.1	<	0.01	0.008	2	
Average	11.4	8.36	314	11.94	<	0.05	<	0.004	11.4	0.76	0.76	<	0.01	0.53	<	0.01	0.029	6.9
Mean	11.3	8.54	270	11.19	<	0.05	<	0.003	9.3	<	0.1	<	0.1	<	0.01	0.022	4.5	
75 Percent	19.7	8.63	406	9.90	<	0.05	<	0.006	14.5	1.61	1.61	<	0.01	0.61	<	0.01	0.038	7

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1358004	Grand River at Amaranth Street E in Grand Valley														
14-Aug-15	21.38	8.52	286	8.01				15	0.39	0.41	0.014			0.081	28
18-Aug-15	24.76	8.78	299	9.70				16	0.32	0.33	0.011			0.048	7
25-Aug-15	19.75	8.89	320	11.21	< 0.05	< 0.012		18	0.26	0.27	0.014	0.75	< 0.01	0.037	7
03-Sep-15	25.37	8.99	271	12.00	< 0.05	< 0.018		13	0.35	0.35	< 0.01	0.83	< 0.01	0.037	5
09-Sep-15	20.26	8.81	296	11.06	< 0.05	< 0.010		12	0.20	0.23	0.027	0.56	< 0.01	0.033	7
17-Sep-15	20.07	8.38	299	9.97		0.12 0.010		14	0.24	0.24	< 0.01	0.70	< 0.01	0.025	6
24-Sep-15	19.70	8.56	275	10.40	< 0.05	< 0.006		12	0.41	0.41	< 0.01	0.61	< 0.01	0.023	6
02-Oct-15	11.04	8.63	248	12.29	< 0.05	< 0.004		12	0.42	0.42	< 0.01	0.50	< 0.01	0.020	2
07-Oct-15	14.66	8.74	258	13.30		0.054 0.007		11	0.89	0.89	< 0.01	0.59	< 0.01	0.027	2
13-Oct-15	13.54	8.81	290	11.80	< 0.05	< 0.007		14	0.27	0.27	< 0.01	0.73	< 0.01	0.025	2
22-Oct-15	11.08	8.42	325	11.65	< 0.05	< 0.003		12	< 0.10	< 0.10	< 0.01	0.65	< 0.01	0.022	2
26-Oct-15	9.43	8.64	369	14.52		0.079 0.006		19	0.33	0.33	< 0.01	0.67	< 0.01	0.055	3
21-Jan-16	-0.18	7.93	478		< 0.05	< 0.000		20	1.82	1.82	< 0.01	0.68	0.012	0.021	2
28-Jan-16	0.75	7.75	534	13.78	< 0.05	< 0.000		21	1.67	1.67	< 0.01	0.10	< 0.01	0.017	1
03-Feb-16	1.56	7.67	394	12.42	< 0.05	< 0.000		18	2.27	2.27	< 0.01	0.64	0.024	0.073	23
09-Feb-16					< 0.05	< 0.000		21	2.51	2.51	< 0.01	0.66	< 0.01	0.025	2
17-Feb-16	0.07	7.73	553	14.98	< 0.05	< 0.000		32	2.07	2.07	< 0.01	0.60	< 0.01	0.022	2
23-Feb-16	0.75	8.02	422	16.26	< 0.05	< 0.000		16	1.97	1.97	< 0.01	0.47	< 0.01	0.015	3
10-Mar-16	2.02	7.80	302	12.92	< 0.05	< 0.000		10	1.39	1.39	< 0.01	0.32	0.012	0.057	16
14-Mar-16	3.65	7.90	397	13.39	< 0.05	< 0.000		15	1.96	1.96	< 0.01	0.38	< 0.01	0.019	2
Max	25.37	8.99	553	16.26		0.12 0.018		32	2.51	2.51	0.027	0.83	0.024	0.081	28
Min	-0.18	7.67	248	8.01	< 0.05	0.000		10	0.1	0.1	< 0.01	0.10	< 0.01	0.015	1
Average	11.56	8.37	348	12.20	< 0.06	0.005		16.1	0.99	1.00	< 0.01	0.58	< 0.01	0.034	6.4
Mean	11.08	8.52	302	12.15	< 0.05	0.004		15	0.42	0.42	< 0.01	0.63	< 0.01	0.025	3
75 Percent	19.91	8.76	395.5	11.10	< 0.05	0.007		18.3	1.86	1.86	< 0.01	0.68	< 0.01	0.040	7

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1363001 Grand River at Station Street in Waldemar															
14-Aug-15	21.44	8.62	297	8.48				12	0.23	0.23	< 0.01			0.035	6
18-Aug-15	24.27	8.74	315	9.31				16	0.18	0.19	0.01			0.048	6
25-Aug-15	20.34	8.83	321	10.55	< 0.05	< 0.011		16	0.15	0.15	< 0.01	0.74	< 0.01	0.038	5
03-Sep-15	25.95	8.88	284	10.64	< 0.05	< 0.016		13	0.18	0.18	< 0.01	0.75	< 0.01	0.031	5
09-Sep-15	21.10	8.92	304	10.76	< 0.05	< 0.013		13	0.15	0.19	0.034	0.55	< 0.01	0.030	8
17-Sep-15	18.70	8.35	323	9.41	0.093	0.007		15	0.18	0.18	< 0.01	0.68	< 0.01	0.022	3
24-Sep-15	19.96	8.45	288	9.09	< 0.05	< 0.005		12	0.25	0.25	< 0.01	0.60	< 0.01	0.025	3
02-Oct-15	11.31	8.50	264	11.58	< 0.05	< 0.003		11	0.30	0.30	< 0.01	0.50	< 0.01	0.018	< 1
07-Oct-15	15.35	8.51	293	11.13	< 0.05	< 0.004		11	0.32	0.32	< 0.01	0.53	< 0.01	0.015	1
13-Oct-15	13.51	8.67	300	11.12	< 0.05	< 0.005		13	0.16	0.16	< 0.01	0.62	< 0.01	0.016	2
22-Oct-15	11.34	8.34	258	11.27	< 0.05	< 0.002		15	0.21	0.21	< 0.01	0.76	< 0.01	0.017	2
26-Oct-15	10.20	8.64	356	13.37	< 0.05	< 0.004		15	0.15	0.15	< 0.01	0.54	< 0.01	0.019	2
21-Jan-16	-0.18	7.99	523		< 0.05	< 0.000		21	1.72	1.72	< 0.01	0.58	< 0.01	0.011	1
28-Jan-16	0.64	7.74	548	13.89	< 0.05	< 0.000		22	1.62	1.62	< 0.01	0.12	< 0.01	0.011	1
03-Feb-16	1.64	7.70	402	12.55	< 0.05	< 0.000		17	2.22	2.22	< 0.01	0.69	0.023	0.110	46
09-Feb-16					< 0.05			20	2.45	2.45	< 0.01	0.55	< 0.01	0.012	3
17-Feb-16	0.01	7.73	538	14.44	< 0.05	< 0.000		20	2.14	2.14	< 0.01	0.48	< 0.01	0.012	2
23-Feb-16	0.77	7.99	432	16.40	< 0.05	< 0.000		16	1.86	1.86	< 0.01	0.48	< 0.01	0.017	3
10-Mar-16	2.30	7.73	301	12.94	< 0.05	< 0.000		11	1.41	1.41	< 0.01	0.36	0.013	0.063	16
14-Mar-16	3.59	7.88	407	13.71	< 0.05	< 0.000		15	1.89	1.89	< 0.01	0.37	< 0.01	0.017	2
Max	25.95	8.92	548	16.40	0.093	< 0.016		22	2.45	2.45	0.034	0.76	0.023	0.110	46
Min	-0.18	7.70	258	8.48	< 0.05	< 0.000		11	0.15	0.15	< 0.01	0.12	< 0.01	0.011	1
Average	11.70	8.33	355	11.70	< 0.05	< 0.004		15.2	0.89	0.89	< 0.01	0.55	< 0.01	0.028	5.9
Mean	11.34	8.45	315	11.20	< 0.05	< 0.003		15	0.28	0.28	< 0.01	0.55	< 0.01	0.019	3
75 Percent	20.15	8.66	405	10.57	< 0.05	< 0.005		16.3	1.76	1.76	< 0.01	0.67	< 0.01	0.032	5.3

calculations based on < value used as shown

	Temp	pH	Cond	DO	NH3+ + NH4	Unionized NH3+	BOD5	CL-	NO3	NH3 + NO2	NO2	TKN	PO4	T. PHOS	S. SUSP
1364002	Grand River at Conc. Rd. 13, NW of Marsville														
14-Aug-15	20.98	8.61	318	9.17				14	0.25	0.25	< 0.01			0.033	6
18-Aug-15	24.21	8.78	341	10.40				18	0.20	0.20	< 0.01			0.044	7
25-Aug-15	19.83	8.84	339	11.79	< 0.05	< 0.011		18	0.12	0.12	< 0.01	0.7	< 0.01	0.034	4
03-Sep-15	24.67	8.81	309	11.95	< 0.05	< 0.013		14	0.16	0.16	< 0.01	0.75	< 0.01	0.027	5
09-Sep-15	21.02	8.86	318	9.65	< 0.05	< 0.012		15	0.22	0.22	< 0.01	0.56	< 0.01	0.024	4
17-Sep-15	18.12	8.42	356	10.53	0.081	0.007		17	0.18	0.18	< 0.01	0.67	< 0.01	0.018	3
24-Sep-15	20.80	8.52	305	9.89	< 0.05	< 0.006		14	0.27	0.27	< 0.01	0.57	< 0.01	0.016	3
02-Oct-15	11.10	8.50	277	12.50	< 0.05	< 0.003		12	0.25	0.25	< 0.01	0.48	< 0.01	0.014	< 1
07-Oct-15	15.12	8.57	276	11.85	< 0.05	< 0.005		11	0.52	0.52	< 0.01	0.51	< 0.01	0.015	2
13-Oct-15	13.41	8.70	321	11.55	< 0.05	< 0.005		15	0.18	0.18	< 0.01	0.60	< 0.01	0.013	2
22-Oct-15	11.06	8.46	345	12.04	< 0.05	< 0.003		14	0.22	0.22	< 0.01	0.57	< 0.01	0.014	2
26-Oct-15	9.14	8.64	335	13.87	< 0.05	< 0.004		15	0.12	0.12	< 0.01	0.54	< 0.01	0.016	2
21-Jan-16	-0.18	8.07	473		< 0.05	< 0.000		21	1.69	1.69	< 0.01	0.56	< 0.01	0.012	1
28-Jan-16	0.35	7.90	511	14.20	< 0.05	< 0.000		26	1.61	1.61	< 0.01	0.18	< 0.01	0.078	32
03-Feb-16	1.90	7.74	412	12.73	< 0.05	< 0.000		18	2.20	2.20	< 0.01	0.56	< 0.02	0.087	34
09-Feb-16					< 0.05	< 0.000		20	2.45	2.45	< 0.01	0.59	< 0.01	0.013	2
17-Feb-16	-0.03	7.81	522	15.39	< 0.05	< 0.000		20	2.09	2.09	< 0.01	0.46	< 0.01	0.008	1
23-Feb-16	1.08	8.00	443	16.38	< 0.05	< 0.000		18	1.82	1.82	< 0.01	0.46	< 0.01	0.018	3
10-Mar-16					< 0.05	< 0.000		11	1.41	1.41	< 0.01	0.33	0.013	0.063	19
14-Mar-16	3.86	7.95	412	13.28	< 0.05	< 0.000		15	1.97	1.97	< 0.01	0.42	< 0.01	0.018	3
Max	24.67	8.86	522	16.38	0.081	0.013		26	2.45	2.45	0.01	0.75	0.02	0.087	34
Min	-0.18	7.74	276	9.17	< 0.05	< 0.000		11	0.12	0.12	0.01	0.18	< 0.01	0.008	1
Average	12.02	8.40	367	12.19	< 0.05	< 0.004		16.3	0.90	0.90	0.01	0.53	< 0.01	0.028	6.8
Mean	12.255	8.51	340	11.95	< 0.05	< 0.003		15	0.26	0.26	0.01	0.56	< 0.01	0.018	3
75 Percent	20.56	8.69	412	10.53	< 0.05	< 0.006		18	1.72	1.72	0.01	0.585	< 0.01	0.033	5.3

calculations based on < value used as shown

Appendix C.2

2015-2016 Sampling Data



Appendix D

Macroinvertebrate Taxa Lists

Location Station Replicate	Sen. Value	1996 D/S			1996 U/S			2015 D/S			2015 U/S		
		G8			G9			Site 1			Site 2		
		Q	1	2	Q	1	2	Q	1	2	Q	1	2
		Grand River			Grand River			Grand River			Grand River		
ROUNDWORMS													
P. Nemata	*	-	-	-	-	-	-	ü	1	1	-	2	-
FLATWORMS													
P. Platyhelminthes													
Cl. Turbellaria													
F. Dugesiidae													
<i>Dugesia</i>	1	-	-	-	-	-	-	-	-	-	-	5	7
F. Planariidae													
<i>Phagocata</i>	3	-	-	-	-	19	-	-	-	-	-	-	-
ANNELIDS													
P. Annelida													
WORMS													
Cl. Oligochaeta													
F. Naididae													
S.F. Naidinae													
<i>Nais</i>	1	-	-	-	-	-	-	-	-	-	-	-	-
S.F. Tubificinae													
<i>Aulodrilus pigueti</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Limnodrilus hoffmeisteri</i>	0	-	-	-	-	-	-	-	-	-	ü	-	-
immatures with hair chaetae	0	-	-	-	-	-	-	-	3	1	-	1	-
immatures without hair chaetae	0	-	-	-	-	-	-	-	1	1	-	9	3
F. Lumbricidae													
indeterminate	0	-	-	3	ü	-	3	-	-	-	-	-	-
F. Lumbriculidae													
<i>Lumbriculus variegatus</i>	2	-	-	-	-	-	2	-	-	-	-	-	-
LEECHES													
Cl. Hirudinea													
F. Erpobdellidae													
<i>Erpobdella punctata</i>	1	-	-	-	-	-	-	-	-	-	-	-	-
F. Glossiphoniidae													
<i>Helobdella stagnalis</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
F. Haemopidae													
<i>Haemopsis</i>	1	-	-	-	ü	-	-	-	-	-	-	-	-
ARTHROPODS													
P. Arthropoda													
MITES													
Cl. Arachnida													
Subcl. Acari													
O. Trombidiformes													
F. Hydrodromidae													
<i>Hydrodroma</i>	1	ü	-	-	-	-	-	-	-	-	-	-	-
F. Sperchonidae													
<i>Sperchon</i>	2	-	-	-	-	1	-	-	-	-	-	-	-
F. Torrenticolidae													
<i>Torrenticola</i>	2	-	-	1	-	-	-	-	-	-	-	-	-
WATER SCUDS													
O. Amphipoda													
F. Hyalellidae													
<i>Hyalella</i>	2	ü	-	18	ü	-	2	ü	-	4	ü	-	-
AQUATIC SOW BUGS													
O. Isopoda													
F. Asellidae													
<i>Caecidotea</i>	1	-	-	-	-	-	-	-	-	-	ü	-	-
CRAYFISH													
O. Decapoda													
F. Cambaridae													
<i>Orconectes propinquus</i>	2	ü	-	-	ü	-	-	-	-	-	-	-	-
<i>Orconectes rusticus</i>	2	-	-	-	-	-	-	ü	2	2	ü	1	1

Location Station Replicate	Sen. Value	1996 D/S			1996 U/S			2015 D/S			2015 U/S		
		G8			G9			Site 1			Site 2		
		Q	1	2	Q	1	2	Q	1	2	Q	1	2
		Grand River			Grand River			Grand River			Grand River		
INSECTS													
Cl. Insecta													
BEETLES													
O. Coleoptera													
F. Dytiscidae													
<i>Laccophilus</i>	0	-	-	-	-	-	-	-	-	-	-	-	
F. Elmidae													
<i>Dubiraphia bivittata</i>	0	-	1	2	-	1	-	-	-	-	-	-	
<i>Dubiraphia minima</i>	1	-	2	4	ü	-	1	-	-	-	-	-	
<i>Dubiraphia quadrinotata</i>	1	-	-	-	-	-	-	-	-	-	-	-	
<i>Dubiraphia</i> larvae	*	-	2	9	-	-	1	-	-	-	-	-	
<i>Optioservus fastiditus</i>	2	ü	1	-	ü	1	-	-	-	-	2	-	
<i>Optioservus trivittatus</i>	3	-	-	-	-	2	-	-	-	1	-	-	
<i>Optioservus</i> larvae	*	ü	22	10	ü	14	18	ü	7	16	ü	55 63	
<i>Stenelmis crenata</i>	2	-	7	9	ü	24	1	ü	-	4	ü	7 3	
<i>Stenelmis</i> larvae	*	ü	88	44	-	25	1	ü	5	28	ü	83 46	
F. Gyrinidae													
<i>Gyrinus</i>	1	-	-	-	-	-	-	-	-	-	ü	-	
F. Hydrophilidae													
<i>Berosus</i>	0	-	8	2	-	-	-	-	-	-	-	-	
<i>Tropisternus</i>	0	-	-	-	-	-	-	-	-	-	-	-	
F. Psephenidae													
<i>Ectopria</i>	3	ü	2	3	ü	-	3	ü	-	-	-	1 -	
<i>Psephenus</i>	3	ü	2	4	-	-	-	-	-	-	-	2 -	
MAYFLIES													
O. Ephemeroptera													
F. Baetidae													
<i>Acerpenna macdunnoughi</i>	3	ü	1	6	ü	1	1	-	-	-	-	-	
<i>Acerpenna pygmaea</i>	2	-	-	-	-	-	-	ü	3	30	ü	4 19	
<i>Baetis intercalaris</i>	2	-	-	-	-	-	-	-	-	-	-	1	
<i>Centroptilum</i>	3	-	-	-	-	-	-	-	-	-	-	-	
<i>Cloeon dipterum</i>	1	-	-	-	-	-	-	-	-	-	-	-	
<i>Dipheter hageni</i>	3	-	-	-	-	-	-	-	-	-	-	2	
<i>Procloeon</i>	2	-	-	-	-	-	-	-	-	-	ü	-	
F. Caenidae													
<i>Caenis</i>	1	ü	-	-	ü	3	2	ü	5	2	-	-	
F. Ephemeridae													
<i>Ephmera</i>	2	-	2	1	-	-	-	-	-	-	-	-	
F. Ephemerellidae													
<i>Eurylophella</i>	1	ü	-	-	ü	1	-	-	-	-	-	-	
F. Heptageniidae													
<i>Maccaffertium vicarium</i>	3	ü	14	16	-	-	-	-	-	-	-	-	
<i>Stenacron</i>	2	-	-	13	ü	-	-	-	-	-	-	1 1	
<i>Stenonema femoratum</i>	1	ü	-	5	ü	-	1	-	3	-	-	-	
F. Isonychiidae													
<i>Isonychia</i>	2	ü	2	-	-	-	-	-	-	-	-	-	
F. Leptophlebiidae													
<i>Leptophlebia</i>	1	ü	2	56	ü	1	2	ü	-	-	ü	- 1	
O. Megaloptera													
ALDERFLIES													
F. Sialidae													
<i>Sialis</i>	2	ü	1	5	-	-	-	-	-	-	-	1 -	
O. Odonata													
DAMSELFLIES													
F. Calopterygidae													
<i>Calopteryx maculata</i>	3	ü	-	-	ü	-	-	-	-	-	-	-	
F. Coenagrionidae													
<i>Argia moesta</i>	2	ü	7	4	-	-	-	-	-	-	-	-	
<i>Enallagma antennatum</i>	2	-	-	1	-	-	-	-	-	-	-	-	
<i>Ischnura</i>	1	-	-	-	-	-	-	ü	-	-	-	-	
immature	*	-	-	-	-	-	-	-	-	-	-	-	
DRAGONFLIES													
F. Aeshnidae													
<i>Basiaeschna janata</i>	1	ü	-	-	ü	-	-	-	-	-	-	-	

Location Station Replicate	Sen. Value	1996 D/S			1996 U/S			2015 D/S			2015 U/S		
		G8			G9			Site 1			Site 2		
		Q	1	2	Q	1	2	Q	1	2	Q	1	2
		Grand River			Grand River			Grand River			Grand River		
STONEFLIES													
O. Plecoptera													
F. Leuctridae													
<i>Leuctra</i>	4	-	-	6	-	2	-	-	-	-	-	-	-
F. Perlidae													
<i>Acroneuria evoluta</i>	2	ü	-	-	-	-	-	-	-	-	-	-	-
F. Taeniopterygidae													
<i>Taeniopteryx ?nivalis</i>	3	ü	-	-	-	-	-	-	-	-	-	-	-
BUGS													
O. Hemiptera													
F. Belostomatidae													
<i>Belostoma flumineum</i>	0	ü	-	-	-	-	-	-	-	-	-	-	-
<i>Belostoma</i>	0	-	-	-	-	-	-	-	-	-	-	-	-
F. Corixidae													
<i>Hesperocorixa michiganensis</i>	1	-	-	-	-	-	-	-	-	-	ü	-	-
<i>Sigara alternata</i>	0	-	-	-	-	-	-	-	-	-	ü	-	-
<i>Sigara grossolineata</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Sigara signata</i>	0	-	-	-	-	-	-	-	-	-	ü	-	-
immature	*	-	-	-	-	-	-	ü	-	-	-	-	-
CADDISFLIES													
O. Trichoptera													
F. Brachycentridae													
<i>Micrasema</i>	4	ü	1	2	ü	-	-	-	-	-	-	-	-
F. Helicopsychidae													
<i>Helicopsyche</i>	2	-	1	2	-	-	2	ü	1	1	-	1	3
F. Hydropsychidae													
<i>Cheumatopsyche</i>	*	ü	131	42	ü	462	2	ü	9	9	ü	51	72
<i>Hydropsyche betteni</i>	2	-	-	-	-	-	-	-	-	-	ü	-	2
<i>Hydropsyche bronta</i>	3	ü	1	7	ü	225	-	ü	2	1	ü	26	38
<i>Hydropsyche sparna</i>	3	-	-	1	-	-	-	-	-	-	-	-	-
<i>Hydropsyche</i>	*	ü	8	9	ü	41	2	-	-	-	-	-	-
F. Hydroptilidae													
<i>Hydroptila</i>	2	-	-	1	-	2	-	-	-	-	-	-	-
<i>Oxyethira</i>	1	-	-	1	-	-	-	-	-	-	-	-	-
F. Lepidostomatidae													
<i>Lepidostoma</i>	4	-	-	-	-	-	1	-	-	-	-	-	-
F. Leptoceridae													
<i>Oecetis</i>	2	-	1	-	ü	-	-	-	-	-	-	-	-
F. Limnephilidae													
<i>Platycentropus</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pycnopsyche</i>	3	ü	-	-	ü	-	3	-	-	-	ü	-	-
immature	*	-	-	-	-	-	-	ü	-	-	-	-	-
F. Philopotamidae													
<i>Chimarra</i>	3	ü	61	8	ü	31	1	ü	-	-	ü	31	22
F. Phryganeidae													
<i>Ptilostomis</i>	2	-	-	-	ü	-	-	-	-	-	-	-	-
F. Polycentropodidae													
<i>Polycentropus</i>	*	-	-	1	-	-	-	-	-	-	-	-	-
F. Psychomyiidae													
<i>Psychomyia</i>	3	-	-	-	-	-	-	ü	3	-	-	1	1
TRUE FLIES													
O. Diptera													
MIDGES													
F. Chironomidae													
chironomid pupae	*	-	-	-	-	-	-	-	-	-	-	-	1
S.F. Chironominae													
<i>Chironomus</i>	0	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cladotanytarsus</i>	2	-	-	-	-	-	-	ü	16	5	-	2	-
<i>Cryptochironomus</i>	1	-	-	-	-	-	-	ü	-	3	ü	-	-
<i>Dicrotendipes</i>	0	ü	-	-	-	-	-	-	-	-	ü	-	-
<i>Micropsectra</i>	3	-	-	2	-	-	-	-	-	-	-	-	-
<i>Microtendipes</i>	2	ü	-	4	-	3	1	ü	48	4	ü	59	17
<i>Nilothauma</i>	1	-	-	-	-	-	-	-	-	-	-	1	-
<i>Paratanytarsus</i>	1	-	-	-	-	5	-	-	-	-	-	-	-
<i>Polypedilum flavum</i>	2	-	-	-	-	-	-	-	-	-	-	2	1

Location Station Replicate	Sen. Value	1996 D/S			1996 U/S			2015 D/S			2015 U/S		
		G8			G9			Site 1			Site 2		
		Q	1	2	Q	1	2	Q	1	2	Q	1	2
		Grand River			Grand River			Grand River			Grand River		
<i>Polypedilum scalaenum</i>	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polypedilum</i>	*	-	-	-	-	-	3	-	-	-	-	-	-
<i>Pseudochironomus</i>	1	-	1	4	ü	-	4	-	-	-	-	-	-
<i>Rheotanytarsus</i>	3	-	-	-	ü	-	-	-	1	-	-	-	-
<i>Stictochironomus</i>	2	-	-	13	-	-	-	ü	20	1	ü	5	1
<i>Tribelos</i>	1	-	-	-	-	-	-	-	2	-	-	-	-
S.F. Diamesinae													
<i>Diamesa</i>	3	-	-	-	ü	1	-	-	-	-	-	-	-
S.F. Orthoclaadiinae													
<i>Brillia</i>	2	-	-	-	-	-	-	-	-	-	ü	-	-
<i>Cricotopus</i>	2	-	-	-	-	-	-	-	-	-	ü	-	-
<i>Cricotopus bicinctus</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cricotopus/Orthocladus</i>	*	-	-	-	-	-	-	ü	-	-	ü	2	5
<i>Orthocladus</i>	*	ü	5	140	ü	54	-	-	-	-	-	-	-
S.F. Tanypodinae													
<i>Helopelopia</i>	3	-	1	3	-	4	-	ü	14	13	ü	17	11
<i>Natarsia</i>	3	-	-	-	-	-	-	ü	1	-	-	-	2
<i>Thienemannimyia</i> complex	*	-	-	-	-	-	-	ü	1	2	-	-	-
F. Empididae													
<i>Hemerodromia</i>	2	-	-	-	-	-	-	-	-	-	-	-	-
F. Psychodidae													
<i>Pericoma</i>	0	-	-	-	-	-	-	-	-	-	-	-	-
F. Simuliidae													
<i>Simulium</i>	2	ü	-	-	ü	-	-	-	-	-	-	-	-
pupae	2	-	-	-	-	-	-	-	-	-	-	-	1
F. Tabanidae													
<i>Chrysops</i>	2	-	-	-	-	-	-	-	-	-	-	1	-
F. Tipulidae													
<i>Antocha</i>	3	-	-	-	-	-	-	ü	-	-	ü	10	13
<i>Dicranota</i>	3	-	1	-	-	-	-	-	-	-	ü	9	9
<i>Hexatoma</i>	2	-	1	1	-	-	-	-	-	-	-	-	-
<i>Tipula</i>	*	ü	1	-	ü	-	2	-	-	-	-	-	-

MOLLUSCS

P. Mollusca

SNAILS

Cl. Gastropoda

F. Ancyliidae

Ferrissia rivularis

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F. Hydrobiidae

Amnicola

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F. Lymnaeidae

Fossaria

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Pseudosuccinea columella

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F. Physidae

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F. Planorbidae

Gyraulus circumstriatus

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CLAMS

Cl. Bivalvia

F. Sphaeriidae

Cyclocalyx

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Sphaerium sp.

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Sphaerium (Amesoda) simile

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Sphaerium (Amesoda) striatinum

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F. Unionidae

Elliptio immature

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Location Station Replicate	Sen. Value	1996 D/S			1996 U/S			2015 D/S			2015 U/S		
		G8			G9			Site 1			Site 2		
		Q	1	2	Q	1	2	Q	1	2	Q	1	2
		Grand River			Grand River			Grand River			Grand River		
TOTAL NUMBER OF ORGANISMS		-	389	471	-	923	59	-	151	129	-	392	346
TOTAL NUMBER OF TAXA ^a		34	28	41	33	21	21	28	23	18	30	27	25
BioMAP_(d)			12.3	12.4		15.2	10.6		9.3	8.9		12.1	13.0
Average BioMap_(d)				12.3			12.9			9.1			12.5
BioMAP_(q)				3.1			3.3			3.0			2.9

^a Bold entries excluded from taxa count

Appendix D - Natural Heritage Study – Existing Conditions Report

Dundalk Industrial Access Road & Wastewater Treatment Facility Expansion

Township of Southgate
Schedule B Municipal Class Environmental Assessment

Natural Heritage – Existing Conditions

Prepared for:
Township of Southgate
Triton Engineering Services Limited

Project Numbers:
AA13-140A & AA16-031A

Date:
March 09, 2017

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Glossary of Abbreviations and Terms

Adjacent Lands: Specified distance from a feature for considering potential negative impacts

Area of Interference: Specified distance from Conservation Authority Regulated Lands for considering potential negative impacts

BBS: Breeding Bird Survey

CC: Coefficient of Conservatism

COSSARO: Committee on the status of Species at Risk Ontario

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

CRFMP: The Grand River Fisheries Management Plan

DFO: Department of Fisheries and Oceans Canada

EA: Environmental Assessment

ELC: Ecological Land classification

END: Endangered Species

ESA: Endangered Species Act

G-Rank: Conservation Status of Species at the global Level

GRCA: Grand River Conservation Authority

LIO: Land Information Ontario

MMP: Marsh Monitoring Protocol

MNRF: Ministry of Natural Resources and Forestry

NHIC: Natural Heritage Information Center

NRVIS: Natural Resources and Values Information System

OBBA: Ontario Breeding Bird Atlas

OMA: Ontario Mammal Atlas

ORAA: Ontario Reptile and Amphibian Atlas

OP: Official Plan

OWES: Ontario Wetland Evaluation System

PPS: Provincial Policy Statement

PIF: Partners in Flight

PSW: Provincially Significant Wetland

SAR: Species at Risk

SARA: Species at Risk Act

SC: Special Concern Species

Species with conservation designation: All species listed under SARA, COSEWIC, ESA and/or an S1-S3 provincial designation.

S-Rank: Conservation Status of Species at the Provincial Level

SWH: Significant Wildlife Habitat

THR: Threatened Species

VASCAN: Database of Vascular Plants of Canada

1.0 Introduction

Aboud & Associates Incorporated (AA) was retained by Triton Engineering Services Limited (Triton) on behalf of the Township of Southgate to complete the natural heritage components of two Schedule B Municipal Class Environmental Assessments (EAs). The EAs are being completed in order to determine the feasibility and best alignment alternative for a proposed Industrial Access Road, and a proposed expansion of the wastewater treatment facility, with due consideration for the natural environment, transportation, socio-economic impacts, constructability and cost. The proposed Industrial Access Road is to connect Ida Street, west of the subject property to Highway 10 on the east side. The proposed expansion of the wastewater treatment plant is to accommodate growth and improve the existing facility, and is located within the study area for the municipal roads project. The natural heritage existing condition component of the EA focuses on characterizing the existing natural features within the study area and adjacent natural lands within 120m, determining and mapping significant natural features and identifying constraints.

1.1 Study Area

The subject property is located on the south side of the Village of Dundalk, in the Township of Southgate, Grey County, Part Lot 235 – Lot 240 Range 2 West of Toronto and Sydenham Road, and Part Lot 238 -240 Range 1 West of Toronto and Sydenham Road. The study area, which comprised all of the subject property, is 185 ha. Adjacent natural lands, up to 120m from the subject property were included in the study. However property access to adjacent lands was not available because permission was not available. Therefore adjacent lands were assessed to the extent possible from the boundary of the subject property and from the public rail trail. The study area is entirely within the jurisdiction of GRCA, and includes two regulated features: Provincially Significant Wetlands and watercourses. Natural and undeveloped lands identified within the study area are wetlands, meadows, watercourses, forests and perennial cover crop agricultural land.

1.2 Existing Land Use

In addition to natural lands, the subject property contains industrial lands, wastewater infrastructure, roads, a rail trail and row crop agricultural lands. Industrial uses include Gro-Bark Organics and Lystek International, located on Eco Parkway. The Dundalk Wastewater Treatment Plant is located within the subject property and consists of a four-cell waste stabilization system, associated access roads and buildings, and underground sewers. The Wastewater Treatment facility comprises approximately 28 ha of the subject property. These lands are partially maintained (e.g. mowed) and of lower ecological value than adjacent, less disturbed lands.

The Grey County CP Rail Trail crosses through the study area and is an access route from the north side of the subject property to the south side. The rail trail is used for recreational activities, including hiking, horseback riding, snowmobiles and all-terrain vehicles.

Annual row crop agricultural land exists in the eastern portion of the property, between the rail trail and Highway 10. Perennial cover crop agricultural land exists west of the rail trail in the southern portion of the property. Mixed Meadow communities exist on either side of the west end of Eco Parkway. These communities are former agricultural lands that have reverted to early successional meadow communities and experience some periodic cutting.

Adjacent lands to the north and south of the subject property are privately owned, and comprised of agricultural lands, residences and naturalized lands.

1.3 Existing Regulations

1.3.1 Provincial Policy Statement

The *Provincial Policy Statement* ([PPS] OMMHA 2014) provides policy direction on matters of provincial interest related to land use planning and development.

Under the PPS, activities that create or maintain *'infrastructure'* authorized under an environmental assessment process are not included under the Definition of Development, and are instead defined as *'infrastructure'*. Based on these definitions, the proposed transportation corridors of the Industrial Access Road, and the proposed expansion and improvements of the wastewater treatment facility are governed by the policies for infrastructure.

The PPS states that:

"Natural features and areas shall be protected for the long term."

And that:

"The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features."

The PPS (2014), Section 1.6: Infrastructure and Public Service Facilities, states that:

1.6.2 *Planning authorities should promote 'green infrastructure' to complement 'infrastructure'*

1.6.6.1 *Planning for sewage and water services shall:*

- a) *direct and accommodate expected growth or development in a manner that promotes the efficient use and optimization of existing: 1. municipal sewage services and municipal water services; and 2. private communal sewage services and private communal water services, where municipal sewage services and municipal water services are not available;*
- b) *ensure that these systems are provided in a manner that: 1. can be sustained by the water resources upon which such services rely; 2. is feasible,*

- financially viable and complies with all regulatory requirements; and 3. protects human health and the natural environment;*
- c) promote water conservation and water use efficiency;*
- d) integrate servicing and land use considerations at all stages of the planning process; and*
- e) be in accordance with the servicing hierarchy outlined through policies 1.6.6.2, 1.6.6.3, 1.6.6.4 and 1.6.6.5.*

1.6.6.2 Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas. Intensification and redevelopment within settlement areas on existing municipal sewage services and municipal water services should be promoted, wherever feasible.

1.6.8.4 The preservation and reuse of abandoned corridors for the purposes that maintain the corridor's integrity and continuous linear characteristics should be encouraged, wherever feasible.

1.6.8.5 When planning for corridors and right-of-way for significant transportation, electricity transmission, and 'infrastructure' facilities, consideration will be given to the significant resources in Section 2: Wise Use Management of Resources.

The PPS (2014), Section 2: Wise Use Management of Resources identifies the following as significant resources:

- a) significant wetlands;*
- b) significant woodlands;*
- c) significant valleylands;*
- d) significant wildlife habitat;*
- e) significant areas of natural and scientific interest; and*
- f) coastal wetlands,*

And states that:

2.1.6 Development and site alteration is not permitted in fish habitat, habitat of endangered species and threatened species except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration is not permitted on adjacent lands to the natural heritage features and areas identified above, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.2.2 Development and site alteration is restricted in or near sensitive surface water features and sensitive ground water features in order to protect the hydrologic functions of the feature. Mitigation and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.

Under *Section 1.6.8.5*, these significant resources shall be given consideration in the planning of significant transportation *infrastructure*.

1.3.2 Endangered Species Act, 2007

The provincial Endangered Species Act, 2007 (ESA) provides protection to species designated as Threatened or Endangered on the Species at Risk in Ontario list (MNRF 2015a). The habitat of species at risk is also generally protected under the ESA. Protected habitat is habitat identified as essential for life processes including: breeding, rearing, feeding, hibernation and migration.

The ESA (Subsection 9(1)) states that:

“No person shall,

- (a) kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species;*
- (b) possess, transport, collect, buy, sell, lease, trade or offer to buy, sell, lease or trade,*
 - (i) a living or dead member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species,*
 - (ii) any part of a living or dead member of a species referred to in subclause (i),*
 - (iii) anything derived from a living or dead member of a species referred to in subclause (i); or*
- (c) sell, lease, trade or offer to sell, lease or trade anything that the person represents to be a thing described in subclause (b) (i), (ii) or (iii).*

Clause 10(1) (a) of the ESA also states that:

“No person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario list as an endangered or threatened species.”

An authorization or permit between the proponent and the Minister of Natural Resources and Forestry is required to authorize activities that would otherwise be prohibited by Subsection 9(1) and 10(1) of the ESA.

1.3.3 Fisheries Act, 1985

The study area contains fish bearing waters in the form of agricultural drainage infrastructure and streams. These areas, and the fish within, are protected under the Federal Fisheries Act, 1985. The Fisheries Act provides protection for the sustainability and ongoing productivity of Canada’s recreational, commercial and Aboriginal fisheries.

Section 35 (1) of the Fisheries Act States that:

“No person shall carry on any work, undertake activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or fish that support such a fishery”

The Fisheries Act requires that projects and activities avoid causing serious harm to fish and fish habitat unless authorized to do so by the Department of Fisheries and Oceans Canada (DFO). This applies to work conducted in or near waterbodies that support recreational, commercial and Aboriginal fisheries. Within the context of the proposed Dundalk Industrial Access Road, any proposed actions that could impact fish or fish habitat would need to be assessed for compliance with the Fisheries Act. If it is determined that proposed actions will cause serious harm to fish that cannot be mitigated for, then a Fisheries Act Authorization would be required.

1.3.4 Grand River Conservation Authority

The Study Area is located within the jurisdiction of the GRCA and portions of the study area are in the GRCA Regulation Limit from two regulated features: Melancthon Wetland Complex #1 (PSW), and Foley's Drain.

Section 8.4 of the GRCA's *Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation* (Ontario Regulation 150/06, 2013) identifies the area of interference of a Provincially Significant Wetland as being 120m.

Interference or alteration within a Regulated Area may be permitted where it can be demonstrated that:

- a) the risk to public safety is not increased,*
- b) susceptibility to natural hazards is not increased or new hazards created,*
- c) there are no adverse hydraulic or fluvial impacts on rivers, creeks, streams, or watercourses,*
- d) there are no adverse impacts on the natural shoreline processes of Lake Erie,*
- e) grading (e.g. placing and removing fill) is minimized and maintains special policy areas and floodplain flow regimes for a range of rainfall events, including the Regional Storm,*
- f) there are no negative or adverse hydrologic impacts on wetlands,*
- g) pollution, sedimentation and erosion during construction and post construction is minimized using best management practices including site, landscape, infrastructure and/or facility design (whichever is applicable based on the scale and scope of the project), construction controls, and appropriate remedial measures,*
- h) intrusions on significant natural features or hydrologic or ecological functions are avoided, and no adverse impacts to significant natural features or hydrologic or ecological functions will occur,*
- i) groundwater discharge areas which support significant natural features or hydrologic or ecological functions on-site and adjacent to the site are avoided,*

j) groundwater recharge areas which support significant natural features or hydrologic or ecological functions on-site and adjacent to the site will be maintained or enhanced,

k) access for emergency works and maintenance of flood or erosion control works is available,

l) works are constructed, repaired and/or maintained according to accepted engineering principles and approved engineering standards or to the satisfactions of the GRCA, whichever is applicable based on the scale and scope of the project, and

m) the control of flooding, erosion, dynamic beaches, pollution or the conservation of land is not adversely affected during and post development, interference or alteration.

These must be demonstrated through appropriate technical studies and/or assessments, site plans and/or other plans as required by the GRCA.

Section 8.4.6 indicates that public Infrastructure, including but not limited to roads, sanitary sewers, utilities, water supply wells, well houses, and pipelines, within a wetland larger than 2ha may be permitted in accordance with the policies in Sections 7.1.2-7.1.3 - General Policies, provided that it can be demonstrated that:

a) An Environmental Assessment or other comprehensive plan supported by the GRCA, demonstrates that all alternatives to avoid wetland loss or interference have been considered and that the proposed alignment minimizes wetland loss or interference to the greatest extent possible, and

b) Where unavoidable, intrusions on significant natural features or hydrologic or ecological functions are minimized and it can be demonstrated that best management practices including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions.

1.3.5 Township of Southgate Official Plan (2006)

The *Township of Southgate Official Plan* (Township of Southgate 2006, Section 2.2.3) states that, “*Natural heritage features and areas including provincially significant wetlands, areas of natural and scientific interest (ANSI), fisheries and wildlife habitat and the connectivity of these natural features will be maintained, restored or where possible, improved.*”

Section 6 of the *Official Plan* (Section 6 – Natural Environment Area) outlines the specific land use designations, and permitted uses and policies of the Official Plan. Natural Environment areas identified in the study area, and their policies are outlined below.

In regards to wetlands, the OP states that:

“No development or site alteration is permitted within the Provincially Significant Wetland designation, except where such activity is associated with forestry (excluding logging) and uses connected with the conservation of water, soil, wildlife and other natural resources, provided the

integrity of the Wetland will not be negatively impacted. Buildings and/or structures are not permitted within lands designated Provincially Significant Wetlands.”

And that; “No development or site alteration shall be permitted on adjacent lands located within 120 metres of an identified Provincially Significant Wetland (PSW), unless the proposed method of avoiding or mitigating the potential impacts, of such development on the adjacent resource is satisfactory to the Township of Southgate and/or other responsible approval authority...”

In regards to hazard lands, the OP states that:

“The Hazard Lands designation identifies lands having inherent environmental hazards including: floodplains, steep slopes, organic or unstable soils, poorly drained areas, poorly drained areas with seasonal or permanent high groundwater table, evaluated non-provincially significant wetlands and any other physical conditions which are severe enough to pose a risk to property or potential loss of life if the lands were to be developed.”

And that; “Certain public or private works which, by their nature, must locate within Hazard Lands shall be permitted to do so. These works include flood and erosion control, drainage, water works, those directly required for the management or maintenance of the natural environment, and other necessary works of approved design.”

And; “Where new development and site alteration is permitted above, it shall only occur if the following can be addressed:

- i. The hazards can be safely addressed, including access to and from the site, and no new hazards are created or existing hazards aggravated.*
- ii. No environmental impacts will result. The Township, in consultation with the Conservation Authority, may require an Environmental Impact Study to be prepared at the proponent’s expense, in accordance with this Plan.*
- iii. The development does not include institutional uses or emergency services or involve hazardous substances.*
- iv. The approval of the County and appropriate Conservation Authority, who will consider the mitigation of effects on vegetation, wildlife and fishery resources, and the natural features of the site.*

In regards to Significant Wildlife Habitat (SWH), the OP states that:

“Development and site alteration within or adjacent to significant wildlife habitats will require the completion of an Environmental Impact Study to the satisfaction of the Township of Southgate and the County of Grey which demonstrates that no negative impacts on the natural features or ecological functions of the area will occur.” Adjacent lands to SWH for the purposes of the OP are 50 meters.

In regards to watercourses, the OP states that:

“New development or site alteration shall not be permitted within 30 metres of a cold water stream or 15 metres of a warm water stream, except for the restoration or minor expansion of buildings or structures legally existing at the date of adoption of this Plan, or site alteration in association with a legally established use.”

1.3.6 Grey County Official Plan

The Grey County Official Plan (1997; consolidation 2013) identifies Natural Environment Areas as Natural Hazard Lands, Significant Woodlands and Provincially Significant Wetlands; new development is generally directed outside of these areas. Natural Hazard lands include floodplains, steep and erosion prone slopes, organic or unstable soils, poorly drained areas, and lands impacted by flooding, erosion and/or dynamic beach hazards.

The OP *“attempts to maintain natural linkages so as to enhance ecological features, functions and processes. The diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored or where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features”.*

Natural Environment areas identified in the study area, and their policies are outlined below.

In regards to the hazard lands designation, the OP states that;

“Certain public or private works which, by their nature, must locate within Hazard Lands shall be permitted to do so. These works include flood and erosion control, drainage, water works, those directly required for the management or maintenance of the natural environment, and other necessary works of approved design.”

And that; *new development and site alterations will only be considered if all of the following can be satisfied:*

- (i) The hazards can be safely addressed and new hazards are not created or existing ones aggravated;*
- (ii) No adverse environmental impacts will result, The County, in consultation with the Conservation Authority, may require an Environmental Impact Study to be prepared at the proponent's expense, in accordance with this Plan;*
- (iii) Vehicles and people have a way of safely entering and exiting at all times;*
- (iv) The advice or approval where required, of the appropriate Conservation Authority shall be obtained. The County and the Conservation Authority will consider the mitigation of effects on vegetation, wildlife and fishery resources and the natural features of the site.*
- (v) There is no feasible location for the development outside of the Hazard Lands designation.*

In regards to the Provincially Significant Wetlands designation, the OP states that;

- (i) *“No development or site alteration is permitted within the Provincially Significant Wetlands designation. Except where such activity is associated with forestry and uses connected with the conservation of water, soil, wildlife and other natural resources but not including buildings and will not negatively impact of the integrity of the wetland.”*
- (ii) *“No development and site alteration may occur within the adjacent lands of the Provincially Significant Wetlands designation unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of this Plan, that there will be no negative impacts on the natural features or their ecological functions.*

Development and site alteration within the adjacent lands of the Provincially Significant Wetlands designation will require a permit from the appropriate conservation authority as per the conservation authority’s generic regulations.”

In regards to the Significant Woodlands designation, the OP states that;

“No development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of this Plan, that there will be no negative impacts on the natural features or their ecological functions. The adjacent lands are defined in Section 6.19 of this Plan.

Notwithstanding the above, projects undertaken by a Municipality or Conservation Authority may be exempt from the Environmental Impact Study requirements, provided said project is a public work or conservation project.”

In regards to the habitat of Threatened and Endangered Species, the OP States that:

“No development or site alteration shall be permitted within areas of significant threatened and endangered species as identified by the Ministry of Natural Resources. No development or site alteration may occur within the adjacent lands to areas of significant threatened and endangered species unless it has been demonstrated through an Environmental Impact Study that there will be no negative impacts on the natural features or their ecological functions.”

1.4 Grand River Fisheries Management Plan

The Grand River Fisheries Management Plan (GRFMP) (GRCA 1998) identifies the status of fisheries resources within the Grand River and provides direction on how these resources and the land based activities which affect them should be managed. The Management Plan covers the entire 6500 km² of the Grand River Watershed from the headwaters in Dundalk to Port Maitland on Lake Erie.

Within the Management Plan, the watershed is sub-divided into reaches, based on continuous areas with similar hydrological characteristics. The subject property is located with the headwaters of the Upper Grand River Reach. This is the upper most region of the Grand River.

The tributaries occurring on the subject property are first and second order tributaries. The geology of the area is largely clay to silty clay, and provides very poor infiltration. This leads to flash flood flows and low base flow. Much of the Upper Grand Reach was once wetland, which has been drained for agriculture and development purposes.

Constraints and impacts to Fisheries Management in the Upper Grand River Reach include:

- Low storage capacity of precipitation, resulting in flash floods and very low base flow.
- A high occurrence of intermittent streams, limiting total fish productivity.
- Drainage practices that have resulted in very wide channels, which provide poor fish habitat.
- Absence of major groundwater discharge areas limits watercourses to warm or cool water communities.

Opportunities for Fisheries Management in the Upper Grand River Reach include:

- Drainage in much of the reach is no longer needed for agriculture purposes and could be modified to create mini floodplains to increase storage, augment low flows, decrease the magnitude of flood flows, increase duration of flows and provide opportunities for cool water fish that utilize floodplain for spawning.
- Maintain sand, gravel and cobble substrate where they occur to provide appropriate habitat for forage fish and aquatic insects.
- Improve channel widths and depths.

The tributaries and drains that occur on the subject property are not identified within the GRFMP, but have been identified as warm water systems by GRCA (pers., comm. N. Garland). Management plans for these tributaries are provided in the Upper Grand River Reach, Main Stem section for the GRFMP. The management objective for warm water tributaries in this reach is to maintain a diverse warm water fish community dominated by top predators, (e.g. smallmouth bass and pike), and to provide a stable forage base. Water quality of the area is negatively impacted through rural land use practices (e.g. excess nutrients, sediment inputs, riparian zone destruction, increased water temperatures, land drainage with related effects on summer base flow). Relevant habitat management/rehabilitation recommendations from the Management Plan include, improving water quality, establishing stable flows, and restoring riparian vegetation.

1.5 Consultation and Comments

GRCA Consultation: Consultation was conducted with the GRCA to determine the requirements of the Municipal Class EA, through phone and e-mail communication. On June 19, 2014, Aboud & Associates contacted Nathan Garland at the GRCA for direction on the

requirements of the environmental studies. A phone conversation occurred on August 28, 2014 between Aboud & Associates and GRCA. As part of the conversation, the GRCA indicated that an Environmental Assessment would be required for the project and not just an EIS or permit application. A follow-up e-mail on August 29, 2014 from the GRCA provided detailed comments and recommendation for the studies required as part of the Municipal Class EA.

Further consultation with the GRCA occurred on March 10 2016, to discuss the inclusion of the Waste water Treatment EA, as part of the existing conditions being completed for the Industrial access road EA. The GRCA was agreeable to the existing conditions reports application to both projects.

MNRF Consultation: On June 19, 2014, Aboud & Associates contacted Kathy Dodge with the Ministry of Natural Resources and Forestry, Midhurst District to inquire about boundary verification for the Provincially Significant Wetland on the subject property. The MNRF advised that once the boundary is delineated by the proponent, the MNRF will confirm the delineation on site. On July 10, 2015, Kathy Dodge advised that it would be acceptable to complete Bobolink and Eastern Meadowlark Surveys through two surveys to confirm presence, instead of the recommended three, if Bobolink and Eastern Meadowlark had been confirmed in all suitable habitat during the first visit, as well as during previous studies completed by Stantec (Comments: July 10, 2015). On January 7, 2016 Aboud & Associates had a phone conversation with Kim Benner, District Planner with the Midhurst District Ministry of Natural Resources, regarding project background and future MNRF involvement. A follow-up email was sent later that day to request updated fish records, SAR records and wetland Evaluation file.

Relevant consultation and comments are provided in the Communications, Appendix 1.

1.6 Terms of Reference

Based on the above regulations and policies (Section 1.4), the Grand River Fisheries Management Plan (Section 1.5), and communication with regulatory authorities, a proposed Terms of Reference (ToR) for the EA was developed and submitted to the GRCA on January 21, 2015. Comments regarding the proposed ToR, and confirmation of the approval of the ToR were received from GRCA on March 6, 2015.

The Terms of Reference and comments from the GRCA are provided in Appendix 2.

2.0 Methods

2.1 Background Review

A background information review was conducted of both biological and physical features within and adjacent to the study area. The following resources were consulted as part of this review:

1. Fisheries and Oceans Canada (DFO), Online mapping (accessed: 2015)
2. Ministry of Natural Resources and Forestry (MNRF), Midhurst District
3. Natural Heritage Information Centre (NHIC) database (accessed: 2017)
4. Ontario Reptile and Amphibian Atlas (Ontario Nature 2017a)
5. Ontario Reptile and Amphibian Atlas Interactive map (Ontario Nature 2017b)
6. Ontario Mammal Atlas (1994)
7. Atlas of the Breeding Birds of Ontario, 2001-2005 (2007)
8. Distribution and Status of the Vascular Plants of Southwestern Ontario (draft, 1993)
9. GRCA Significant Species List (GRCA 2015)
10. Grand River Conservation Authority Regulation Mapping (GRCA 2017)
11. Township of Southgate Official Plan, 2006 (last amended June 10, 2008)
12. Grey County Official Plan, 1997 (Consolidated June 25, 2013)
13. Dundalk Industrial Park Lands Village of Dundalk Township of Southgate Scoped Environmental Impact Study, Stantec (2013)
14. Dundalk Industrial Park Environmental Impact Study, ESG International Inc. (2002)

2.2 Vegetation

2.2.1 Ecological Land Classification

A three-season Ecological Land Classification (ELC) evaluation was completed as part of the Stantec EIS (2013) report. Field work for the Stantec ELC evaluation occurred between August 18, 2010 and May 27, 2011.

To update and confirm work completed by Stantec, field investigations were undertaken by Aboud & Associates to verify ELC communities. Each community was evaluated on either June 16, 2015 or on June 23, 2015 to confirm the accuracy of boundaries and communities identified in the Stantec report. Additional ELC community and boundary information was collected concurrently with other field surveys and on October 20, 2015. Detailed survey dates and weather information are provided in Appendix 3.

Surveys were completed by qualified ecologists, Ryan Hamelin, OMNRF Certified in Ecological Land Classification and Cheryl-Anne Ross, OMNRF Certified in Ecological Land Classification.

Vegetation communities within the study area were characterized and delineated following the Ecological Land Classification (ELC) system for Southern Ontario 1st approximation; community codes used generally follow the 2nd approximation (Lee, et al., 1998, 2008). Boundaries of ELC communities were mapped using aerial images and field observations (Figure 2). Detailed descriptions of each ELC community are provided in Appendix 4.

Identified ELC communities were cross referenced with the NHIC Ontario Plant Community List (NHIC 2015) to determine the presence of rare plant communities (S1-Critically Imperiled, S2-Imperiled, or S3-Vulnerable). The Subnational, or Provincial, Ranks (S Rank) are assigned by the Ontario Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) in order to help assign protection priorities.

2.2.2 Botanical Inventory

A three-season botanical inventory was completed as part of the Stantec EIS report. Field work for the Stantec botanical inventory occurred between August 18, 2010 and May 27, 2011.

To update and confirm the Stantec botanical inventory, field investigations were undertaken by Aboud & Associates. Concurrent with the ELC evaluations, the subject lands were systematically searched in order to provide a one season botanical inventory. Detailed survey dates and weather information are provided in Appendix 3. Additional botanical specimens were identified and recorded as encountered during all other field evaluations.

Identified vascular plant species were compared to provincial and federal SAR lists (COSARO, SARA), provincial ranks (NHIC 2015), global ranks, and Distribution and Status of the Vascular Plants of Southwestern Ontario (Oldham 1993) in order to assess federal, provincial, regional and local conservation status of each species. English colloquial names and scientific binomials of plant species generally follow the Database of Vascular Plants of Canada (VASCAN 2016).

Identification of environmentally sensitive plant species was completed based on assignment of a coefficient of conservatism value (CC) for each native species (Oldham, et al., 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species' tolerance of disturbance and fidelity to specific natural habitat parameters. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters. These species may be more sensitive to environmental changes (Mortarello et. al., 2010).

A list of all identified plant species is provided in Appendix 5. The list provides botanical names, common names, provincial rarity rank (S-rank), global rarity rank (G-rank), provincial Species at Risk status (SARO), federal Species at Risk status (SARA), Local rarity/significance within Grey county (Oldham 1993), coefficient of conservatism (CC) and coefficient of wetness (CW). Plant species that could only be identified to genus (*Amelanchier sp.*, *Potamogeton sp.*) were not assigned the above information.

2.3 Provincially Significant Wetlands

The Provincially Significant Melancthon Wetland Complex #1 is partly within the study area and comprises a large portion of the natural features upstream and downstream of the subject lands. The wetland was evaluated in 1997 (Pers., Comm. Kathy Dodge 2016), with further evaluation under the Ontario Wetland Evaluation System (OWES) in 2003 by the MNRF (NRVIS 2006). A copy of the wetland evaluation data and scoring record was requested from the Midhurst District MNRF office, a copy of the evaluation map and vegetation community summary was provided and reviewed in order to determine the presence of potentially important biological and hydrological features.

The mapped wetland boundary was obtained from the Land Information Ontario (LIO) online database. Based on a desktop analysis of the LIO Provincially Significant Wetland boundary, it was evident that the boundary was incorrect or dated in areas. The LIO file identified areas as wetland that have since been developed or altered. The wetland boundary had previously been delineated by Stantec in 2010, but had not been flagged, surveyed or verified by the MNRF or GRCA. An updated wetland boundary delineation was conducted by Ryan Hamelin, OMNRF Certified in OWES, through a combination of desktop analysis and field survey. Detailed survey dates and weather information are provided in Appendix 3. The wetland boundary was established where vegetation was comprised of 50% wetland and 50% upland species, and where soils displayed hydric conditions (e.g. presence of mottles and/or gleys), per the *Ontario Wetland Evaluation System* (OWES 2013). Due to property access restrictions, it was not possible to confirm the accuracy of the entire wetland boundary on adjacent lands outside of the subject property.

The wetland boundary has not been reviewed or approved by either the GRCA or MNRF. Following selection of the preferred road alignment, through the EA process, the wetland area within 120m of the proposed road will be delineated, for approval by the GRCA and the MNRF.

2.4 Wildlife

2.4.1 Amphibians (Anurans)

Evening point count surveys to detect breeding calls of anurans (frog and toad) were conducted by Stantec in 2011. AA conducted two additional surveys during the early spring of 2015 and summer of 2014 during the recommended windows, to update observations that were incomplete or conducted at suboptimal temperatures during 2011 surveys. After reviewing the results and locations of past amphibian surveys, the addition of the waste water treatment plant within the study area, and the time that had passed since the completion of the first survey (>5 years) it was determined that a full, 3 round amphibian survey, targeting wetland areas based on the revised ELC and wetland boundaries was required in order to ensure the most recent and relevant information possible for the study area. This ensured detection of all potential species in accordance with the *Marsh Monitoring Program Participants Handbook for Surveying Amphibians* (Bird Studies Canada 2009). Surveys coincided with optimum weather conditions for anuran breeding activity and detection of calls, i.e. suitable temperature relative to each

survey window, humid or damp but not raining, and low wind. Call Level Codes were applied to each species detected per area of suitable habitat, and numbers of individuals were counted or estimated, where applicable. A full, three round amphibian survey to update the results was completed on April 20, May 25 and May 31 and, June 27 and July 4, 2016. The point count locations are illustrated on Figure 3; Survey Results and Call Level Code descriptions are provided in Appendix 6. Detailed survey dates and weather information are provided in Appendix 3.

2.4.2 Forest and Wetland Breeding Birds

Stantec completed Breeding Bird Surveys throughout the study area in 2011 (Stantec 2013). Final results of the 2011 surveys were provided in the report, however, data sheets, and species locations were not made available, consequently, locations for species which have recently been listed under the ESA, including Eastern Wood-pewee were not provided. In order to update the data, and provide location information for species, two rounds of breeding bird surveys, following the Ontario Breeding Bird Atlas protocols, were completed in 2016. The highest observed level of breeding evidence was used to assign breeding status (i.e. confirmed, possible, probable or observed) to each species, as per the *Ontario Breeding Bird Atlas: Guide for Participants* (Bird Studies Canada 2001). As per the OBBA Survey Protocol, surveys were performed during the peak breeding season for the bulk of species in Southern Ontario (last week of May through early July), and were spaced at least 10 days apart in order to determine presumed permanent territories through territorial singing males. The two surveys took place on the mornings of June 13 and July 7, 2016, between 30 minutes after dawn and 10:30am. The Point Count Locations are illustrated on Figure 3, breeding bird survey results and breeding evidence codes are provided in Appendix 7. Detailed survey dates and weather information are provided in Appendix 3.

2.4.3 Grassland Breeding Birds

Grassland Breeding Bird Surveys were conducted in 2015 by AA (Cheryl-Anne Ross, Wildlife Ecologist), to confirm grassland Species at Risk Breeding habitat identified by Stantec. Two surveys were conducted, and comprised 10 minute point counts positioned approximately 250m apart along pre-determined transects within candidate grassland habitat in the study area. Surveys followed the MNR – Guelph District Bobolink Survey Protocol (2012). The highest observed level of breeding evidence was used to assign breeding status (i.e. confirmed, possible, probable or observed) to each species, as per the *Ontario Breeding Bird Atlas: Guide for Participants* (Bird Studies Canada 2001). Bobolink observed or heard were recorded along with sex, approximate location, behaviour and interactions with other Bobolink or other species. On transit between point counts, all Bobolink observed or heard were also recorded, if they were not observed during the point counts.

As per the OBBA and MNR – Guelph District Survey Protocol, surveys were performed during the peak breeding season for the bulk of species in Southern Ontario (last week of May through early July), and were spaced at least 10 days apart in order to determine presumed permanent territories through territorial singing males. The two surveys took place on the mornings of June 16, 18 and July 14, 2015, between 30 minutes after dawn and 9am. The Point Count Locations

and transects are illustrated on Figure 3, breeding bird survey results and breeding evidence codes are provided in Appendix 7. Detailed survey dates and weather information are provided in Appendix 3.

2.4.4 Winter Wildlife

Winter Wildlife Surveys were completed on January 14 and February 20, 2015. Detailed survey dates and weather information are provided in Appendix 3. Wildlife sightings and evidence such as tracks, scat, vocalizations and markings were used to determine species presence. Notes and GPS points were taken for each observation.

The entire study area was surveyed on foot and with the aid of snowshoes and cross country skis. A road side survey of the study area was completed where possible. As part of the Winter Wildlife survey, particular effort was applied to locating and identifying raptors, mammal tracks, stick nests, raptor wintering areas, and deer congregation areas. The path traveled during the winter wildlife survey, including roadside driving route as shown on Figure 3. All winter wildlife observations are presented in Appendix 8.

2.4.5 Incidental Wildlife Observations

Incidental observations of insects, mammals and reptiles were recorded during all field visits and incidental observations of birds and amphibians made outside of the formal field surveys for these groups of fauna were recorded. Detailed survey dates and weather information are provided in Appendix 3. A complete list of all incidental wildlife is provided in Appendix 9.

2.5 Significant Wildlife Habitat

With guidance from the *Significant Wildlife Habitat Technical Guide* (MNRF 2000) and the SWH EcoRegion Criterion Schedule 6E (MNRF 2015), the study area and adjacent lands were considered for the presence of Significant Wildlife Habitat (e.g. specialized habitats for wildlife, habitat for species of conservation concern). Detailed survey dates and weather information are provided in Appendix 3. An assessment of the study area for all SWH is provided in Appendix 10.

2.6 SAR Habitat Assessment

A thorough review of all background documents was conducted to compile a master list of all Species at Risk, and species with conservation designation (Locally rare, S1-S3 species, significant in Grey County) that may occur in the study area. A review of the site, along with habitat requirements for each species was conducted; the site was then evaluated for potential habitat using Ecological Land Classification, guidance from MNRF documents, and on-site knowledge acquired through field surveys. Detailed survey dates and weather information are provided in Appendix 3. An assessment of the study area of candidate habitat for SAR is provided in Appendix 11.

2.7 Aquatic Habitat Assessment

On October 20, 2015 an Aquatic Habitat Assessment was completed by Ryan Hamelin, Terrestrial and Wetland Ecologist and Cheryl-Anne Ross, Wildlife Ecologist, for all sections of watercourses in the study area, as well as sections of the watercourse directly up-stream and down-stream of the study area. Detailed survey dates and weather information are provided in Appendix 12. The Aquatic Habitat Assessment was completed in order to determine the quality of fish habitat, barriers to fish movement, and general aquatic habitat characteristics. For the assessment, the watercourse was separated into 14 segments and each characterized with respect to the following criteria:

- Mean channel width;
- mean channel depth;
- mean water depth;
- percent stream shading;
- buffer width;
- substrate;
- flow pattern;
- channel morphology;
- instream cover;
- bank characteristics;
- general site notes;
- presence of specific site features.

In addition to the Aquatic Habitat Assessment, data provided by the MNRF and GRCA, such as, fish collection records and watercourse temperature regime were used to characterize the overall aquatic habitat.

2.8 Landscape Evaluation

A landscape level evaluation was completed for the study area and surrounding lands to identify ecologically significant features that extend beyond the boundaries of the study area, and that may be impacted by changes within the study area. The following background resources were reviewed in completing the Landscape Evaluation:

- Natural Heritage Information Center (NHIC);
- The Ecosystems of Ontario, Part 1 : Ecozones and Ecoregions (MNRF 2009);
- The Grand River Fisheries Management Plan (2002);
- Township of Southgate Official Plan (2006);
- Grey County Official Plan (1997)
- Forest Regions of Canada (Rowe 1977)
- Aerial photo interpretation.

3.0 Existing Conditions

Information that characterizes the existing conditions of the study area came from several sources, including but not limited to, background review of existing documents, public information sources, past field studies by others, and extensive field reconnaissance.

3.1 Background Review

3.1.1 Natural Heritage Information Centre - Species at Risk

Preliminary investigation through the Natural Heritage Information Centre (NHIC) identified two provincial Species at Risk (SAR) under the ESA, recorded within approximately 1km of the study area. These species and their habitat requirements are summarized in *Table 1*.

Table 1. NHIC Species at Risk Records

Scientific Name	Common Name	(COSEWIC) Status ¹	(SARO) Status ²	Last Observed (NHIC)	S-Rank ³	Habitat Requirements
<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened	Threatened	June 15, 2002	S4B	Nest in grassland habitats, including hayfields and meadows with a mixture of grasses and broad-leaved forbs with a high litter cover. Area Sensitive, with increased density in grasslands greater than 10ha (Renfrew et. al. 2015)
<i>Sturnella magna</i>	Eastern Meadowlark	Threatened	Threatened	June 15, 2002	S4B	Nest in grassland habitats, including hayfields, pasture, savannahs, and other open areas. Preferential habitat includes areas with good grass and thatch (litter) cover (Jaster et. al. 2012).

¹ COSEWIC – Committee on the status of endangered wildlife in Canada

² SARO – Species at Risk Act Ontario

³ S-Rank – Denotes the conservation status of a species at the provincial level

S4: Apparently Secure—Uncommon but not rare

S#B- Breeding status rank

3.1.2 Ontario Breeding Bird Atlas

A list of birds determined to be breeding (Possible, Probable or Confirmed) in the 10km x 10km square containing the study area during the 2001-2005 Ontario Breeding Bird Atlas (Cadman 2007) was compiled. This list includes 122 species; nine are considered Species at Risk under the ESA. Potential breeding habitat was identified in the study area for four of these species: Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (*Sturnella magna*), Eastern Wood-pewee (*Contopus virens*), and Wood Thrush (*Hylocichla mustelina*). One species, Wilson’s Phalarope is considered a rare breeder (S3B) in Ontario. 69 of the species identified in the square are considered conservation priorities by GRCA and 21 are considered Ontario PIF (Partners in Flight) priority species in Bird Conservation Region 13 (Environment Canada, 2008). The findings of this review are presented in Appendix 13. Species with conservation designation (ESA, SARA) identified in the background review and their habitat requirements are presented in Appendix 11.

3.1.3 Ontario Reptile and Amphibian Atlas

Review of the Ontario Reptile and Amphibian Atlas identified twelve species that are known to occur within the 10km x 10km square containing the study area. This list includes two species at risk under the ESA; Common Snapping Turtle (*Chelydra serpentina*) and Eastern Ribbonsnake (*Thamnophis sauritus*), both listed as Special Concern provincially and federally. One further species, Western Chorus frog – Great Lakes / St. Lawrence – Canadian Shield Population, is listed as Threatened federally. Potential habitat was identified in the study area for all three species. The findings of this review are presented in *Appendix 13*. Species with conservation designation identified in the background review and their habitat requirements are presented in Appendix 11.

3.1.4 Atlas of the Mammals of Ontario

Review of the Atlas of the Mammals of Ontario (Dobbyn 1994) identified twenty-four species that are known to occur within approximately 10km of the study area. This list includes one species at risk under the ESA; Little Brown Myotis (*Myotis lucifugus*) is listed as Endangered provincially and federally. Little Brown Myotis overwinter in humid hibernacula consisting of caves or mines. Females establish summer maternity colonies in large-diameter trees with peeling bark, crevasses and cavities (COSEWIC 2013). Potential maternal roosting habitat was identified in the study area for this species. The findings of this review are presented in Appendix 13. Species with conservation designation identified in the background review and their habitat requirements are discussed in Appendix 11.

3.1.5 Grand River Conservation Authority

3.1.5.1 Fish Records

GRCA provided fish habitat and information records for the study area and associated watercourse. GRCA records classify the watercourse on site as warm water fish habitat, with intermittent flow. The subject property and watercourses have been identified as Northern Pike spawning habitat, although specific spawning locations are unknown. The GRCA also noted that the watercourse is a DFO Drain Classification Class E, which indicates the presence of sensitive aquatic species.

GRCA fish records indicate the presence of 9 fish species identified during sampling in 1996 and 2000; specific sampling methods and locations were not provided by the GRCA. None of the identified fish species are considered provincial or federal SAR, all records are included in Appendix 14.

3.1.6 Ministry of Natural Resources and Forestry

3.1.6.1 Species at Risk

The MNRF has no additional information regarding provincial SAR within the study area. Nine SAR (Barn Swallow (*Hirundo rustica*), Eastern Wood-Pewee, Golden-Winged Warbler (*Vermivora chrysoptera*), Henslow's Sparrow (*Ammodramus henslowii*), Milksnake (*Lampropeltis triangulum*), Snapping Turtle, Northern Long Eared Bat (*Myotis septentrionalis*), Eastern Small Footed Bat (*Myotis leibii*), Butternut (*Juglans cinerea*)) were identified by the

MNRF to have the potential to occur within the region, and should be considered during site assessment and analysis.

3.1.6.2 Fish Records

Fish data collection records from within the study area were provided by the Midhurst District MNRF. The data was collected on September 6, 2000 from a single sampling point within the Foley Drain, at the intersection with Ida Street. Specific sampling methods were not provided. Six species were identified, none of which are listed as S1 – S3 or as provincial or federal SAR. The MNRF identifies the watercourse in this location as coolwater.

3.1.6.3 Wetlands

The full evaluation file for the provincially significant Melancthon Wetland Complex was not available for review. A copy of the site map and vegetation community summary from the evaluation was provided. The MNRF acknowledge that the current mapping of the PSW wetland complex is out of date and inaccurate, as the current wastewater treatment ponds are within areas previously mapped as wetland. The wetland file is currently in the process of revisions (Pers., Comm. Kathy Dodge 2016).

3.1.7 Previous Studies completed by Stantec (2013)

Stantec Consulting Ltd. (Stantec) completed a Scoped EIS for the Study area in 2013, with field studies completed in 2011. Since all observations are from within the same study area and there is an overlap of species between Stantec data and the AA field studies, a further analysis using the combined Stantec data and field data collected by AA was completed. These are discussed in Sections 3.2, 3.3 and 3.4.

3.1.7.1 Ecological Land Classification

Stantec completed a three season ELC evaluation during 2010 and 2011. The evaluation characterized and mapped the entire study area and provided descriptions of all communities. Twenty-three different community types were identified. ELC communities were described following the Ecological Land Classification (ELC) system for Southern Ontario 1st approximation (Lee, et al., 1998).

3.1.7.2 Botanical Surveys

Stantec completed a three season botanical inventory during 2010 and 2011. Results of the survey are shown on Appendix 5.

The Stantec survey identified one hundred and seventy-two species of vascular plants, 78% of which are native. No provincially or federally listed SAR was identified. Three species were identified as locally rare within Grey County; Grey Dogwood (*Cornus foemina ssp. racemose*), Prickly Cucumber (*Echinocystis lobata*), and Witch Hazel (*Hamamelis virginiana*).

Specific locations of plant species observations were not provided.

3.1.7.3 Amphibian Surveys

Two rounds of Amphibian Surveys were completed by Stantec in the Study area in 2011. A total of ten stations were established and surveys completed in April and May. Three species were identified in the study area, and one station was identified as significant habitat for breeding amphibians. Stantec surveys were combined with two additional AA surveys to provide three rounds completed in the appropriate weather conditions and timing windows for amphibian habitat in the study area.

3.1.7.4 Breeding Bird Surveys

Breeding Bird surveys were completed by Stantec in the study area in 2011, a list of birds determined to be breeding was compiled. This list includes 52 species; three of which are listed as Threatened under the ESA, Eastern Meadowlark, Bobolink and Barn Swallow; one further species has been listed as Special Concern since the writing of the report, Eastern Wood-pewee is listed as Special Concern under the ESA.

Specific locations of bird species observations were not provided.

3.1.7.5 Incidental Wildlife Observations

A list of all incidental observations made in the study area was compiled by Stantec in 2011. This list included 5 species observed in the study area outside of formal surveys; none of these species are listed as SAR. One candidate snake hibernacula (Coordinate UTM: Zone 17N 550310.82mE, 4889853.33mN) and one potential fox den (Coordinate UTM: Zone 17N 550045.79mE, 4889802.71011mN) were identified. The presence of these features was confirmed and shown on Figure 4 and images of the potential fox den and hibernacula are included in the photo log, Appendix 15.

3.2 Vegetation

3.2.1 Ecological Land Classification

A one season ELC evaluation was completed in 2015 by Aboud & Associates. 68 ELC polygons, comprised of 27 different ELC communities were identified and mapped. The community polygons identified during the ELC surveys are summarized in Table 2. Detailed ELC descriptions are provided in Appendix 4. Comparison with the NHIC Rare Plant Communities did not identify any provincially rare plant communities (S1 – S3) within the study area. ELC communities are shown on Figure 2.

Comparison with the three season ELC completed by Stantec (2013) revealed that the communities and boundaries identified were similar or the same as previously reported. No large discrepancies between the Stantec ELC evaluation and the updated confirmation survey were identified.

Table 2. Ecological Land Classification		
ELC Code ¹	Vegetation Type	Map ID (Fig. 2)
Mixed Meadow (MEM)		
MEMM3	Dry - Fresh Mixed Meadow Ecosite	1
MEMM4	Fresh - Moist Mixed Meadow Ecosite	2
Deciduous Woodland (WOD)		
WODM4-3	Sugar Maple Deciduous Woodland Type	3
WODM5-1	Fresh - Moist Poplar Deciduous Woodland Type	4
Coniferous Forest (FOC)		
FOCM6-1	Dry-fresh White Pine Naturalized Coniferous Plantation	5
FOCM6-4*	Dry - Fresh White Spruce Naturalized Coniferous Plantation	6
Mixed Forest (FOM)		
FOMM5-2	Dry- Fresh Poplar Mixed Forest	7
FOMM7-2	Fresh - Moist White Cedar - Hardwood Mixed Forest Type	8
FOMM8	Fresh - Moist Poplar - White Birch Mixed Forest Ecosite	9
FODM5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type	10
FODM6-1	Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type	11
Open Agriculture (OAG)		
OAGM1	Annual Row Crop	12
OAGM2	Perennial Cover Crop	13
Mixed Swamp (SWM)		
SWMM1-1	White Cedar - Hardwood Mineral Mixed Swamp Type	14
SWMM3	Birch - Poplar Mineral Mixed Swamp Ecosite	15
SWMM4-2	Black Ash - Conifer Mineral Mixed Swamp Type	16
SWMM5-1	Balsam Fir - Hardwood Mineral Mixed Swamp Type	17
Deciduous Swamp (SWD)		
SWDM2-2	Green Ash Mineral Deciduous Swamp Type	18
SWDM4-5	Poplar Mineral Deciduous Swamp Type	19
Thicket Swamp (SWT)		
SWTM2-1	Red-osier Dogwood Deciduous Thicket Swamp	20
SWTM3	Willow Mineral Deciduous Thicket Swamp Ecosite	21
Meadow Marsh (MAM)		
MAMM1-16	Mixed Graminoid Mineral Meadow Marsh Type	22
MAMM1-3	Reed-canary Grass Graminoid Mineral Meadow Marsh Type	23
Shallow Marsh (MAS)		
MASM1-1	Cattail Mineral Shallow Marsh Type	24
MASM1-5	Broad-leaved Sedge Mineral Shallow Marsh Type	25
MASO1-1	Cattail Organic Shallow Marsh	26
Floating-leaved Shallow Aquatic (SAF)		
SAF_1-3	Duckweed Floating-leaved shallow Aquatic	27

¹ ELC Codes generally follows the ELC Second Approximation (Lee 2008)
* Indicates ELC was not included in the First or Second ELC Approximation

3.2.2 Botanical Inventory

A detailed field inventory of accessible properties within the study area was completed during 2015. 131 species or distinct sub-species of vascular plants, from 48 families, were identified. All identified plant species are provided in Appendix 5. A further 4 species were identified only to the level of genus and have not been designated as native or non-native or included in the overall species count.

The three season botanical survey completed by Stantec (2013) during 2010 and 2011 was included in the analysis. The Stantec data includes a further 75 species or distinct sub-species from 14 additional plant families. The combined data provides a more complete inventory of the entire study area, for a total of 206 species or sub-species from 62 families. Of those, 160 species (78%) are native and 46 species (22%) are exotic.

3.2.2.1 Species at Risk, Regional and Local Significance

All native vascular plants observed in the study area, or identified in Stantec data are ranked as secure in Ontario (S5) or apparently secure (S4) and globally, very common (G5) or common (G4) (NHIC 2015).

Four identified species, including Stantec observations, are considered Rare in South Grey County (MNR 1993);

- Cow-parsnip (*Heracleum maximum*)
 - Observed near the road side ditch at the location where the Foley Drain passes under Ida Street.
- Wild Cucumber (*Echinocystis lobate*)
 - Observed occasionally in trees and shrubs directly south of Eco parkway, primarily in communities WODM5-1 and along the edge of SWDM2-2
- American Witch-hazel (*Hamamelis virginiana*)
 - Observed on the southern edge of the SWDM2-2 directly south of Eco-parkway
 - Stantec Observation only
- Grey Dogwood (*Cornus foemina*)
 - Observed infrequently along the edges of SWDM2-2 communities
 - Stantec Observation only

None of the species observed in the study area, or identified in Stantec data had a Co-efficient of conservatism of 9 or 10.

3.3 Provincially Significant Wetlands

3.3.1 Boundary Review

The mapped wetland boundary of the Melancthon Wetland Complex #1 was accessed through Land Information Ontario (LIO). The accuracy of the boundary within the study area was reviewed through field survey and ortho-photograph interpretation. Discrepancies in the mapped LIO wetland boundary compared to the actual wetland boundary were identified. As such, the wetland boundary was delineated by OWES Certified Ryan Hamelin on August 27 and 28, 2015. The delineated boundary is shown on *Figure 6*. This boundary has not been verified or approved by the MNRF. Portions of the boundary, within the limits of the waste water treatment facility study area, were reviewed with the GRCA in 2016, in order to facilitate site selection, and determine presence/absence of wetlands vs low-lying areas related to the creation of berms around the existing storm water ponds. The boundary as staked by AA (including those portions approved with the GRCA) will be used in the analysis of alternatives to select a road alignment

and in the selection of an alternative for the waste water treatment facility upgrades. Once a road alignment and waste water treatment site is selected, the MNRF will meet on-site to verify the accuracy of the boundary within 120m of the proposed road (Pers. Comm., Kathy Dodge, 2015). The GRCA has also requested being present for the wetland boundary delineation for the Municipal roads EA.

3.3.2 Wetland Characteristics

The LIO wetland file identifies the wetland complex within the study area as containing Swamp and Marsh. This is consistent, but less detailed than the ELC survey which identified, Coniferous Swamp, Mixed Swamp, Thicket Swamp, Meadow Marsh, and Floating-leaved Shallow Aquatic communities within the study area. Excerpts provided from the wetland evaluation file show the boundaries and communities of the complex prior to the development of eco-parkway and the expansion of the Wastewater Treatment Facility.

3.4 Wildlife

3.4.1 Amphibians (Anurans)

The results of the Anuran Point Count Surveys completed in 2016 are summarized in Table 3, and are discussed below. The Point Count Locations are illustrated on Figure 3.

Station	Visit	Species								analysis/ Significance
		American Toad	Gray Treefrog	Spring Peeper	Western Chorus Frog	Pickereel Frog	Green Frog	Northern Leopard Frog	Wood Frog	
A	20/04/2016			3A*					1-4*	all calls heard outside location
	25/05/2016		2-4*	3A*						
	27/06/2016	no calls								
	Totals		2-4*	3A*					1-4*	
B	20/04/2016			3A		1-2			2-4	four species, and greater than 20 individuals
	25/05/2016	2-8	1-2	3A						
	27/06/2016	no calls								
	Totals	2-8	1-2	3A		1-2			2-4	
C	20/04/2016			3A				1-5	1-3	four species, and greater than 20 individuals
	25/05/2016		1-3	3A			1-1	1-4		
	27/06/2016						1-9			
	Totals		1-3				1-10	1-9	1-3	
D	03/05/2016			3B	1-2				3A	four species, and greater than 20 individuals
	31/05/2016		1-3*	1-1*			1-2			
	04/07/2016						1-1			
	Totals			3B	1-2		1-3		3A	
E	03/05/2016			3A		1-3			3A	three species, and greater than 20 individuals
	31/05/2016		1-5*							
	04/07/2016		1-2*							
	Totals			3A		1-3			3A	

Table 3. Summary of Amphibian Observations (2016)

Station	Visit	Species								analysis/ Significance
		American Toad	Gray Treefrog	Spring Peeper	Western Chorus Frog	Pickereel Frog	Green Frog	Northern Leopard Frog	Wood Frog	
F	03/05/2016	1-1*		2-5*						only one species detected from location
	31/05/2016		2-4*	2-3						
	04/07/2016	no calls								
	Totals			2-3						
G	03/05/2016			1-2, 3A*					3A*	all calls heard outside location
	31/05/2016		1-2*	2-3*						
	04/07/2016		1-2*				1-1*			
	Totals									
H	03/05/2016	1-1*		2-8					1-1	2 species and only 10 individuals heard calling
	31/05/2016		1-2*	1-1						
	04/07/2016	no calls								
	Totals			2-9					1-1	
I	03/05/2016			2-2, 3A*						three species, and greater than 20 individuals
	25/05/2016		2-4	2-4			2-12	1-3		
	27/06/2016						1-3			
	Totals		2-4	2-6			2-15	1-3		
J	03/05/2016			3A*						all calls heard outside location
	31/05/2016	no calls								
	04/07/2016	no calls								
	Totals									

Amphibian Call Level codes:

- 1 - # :Calls not simultaneous, number of individuals can be accurately counted
- 2 - # :Some calls simultaneous, number of individuals can be reliably estimated
- 3 :Full chorus, calls continuous and overlapping, number of individuals cannot reliably be estimated

Significance:

- Y-Indicates Amphibian Habitat meets the criteria listed under the Ecoregion 6E SWH Criteria guide (MNRF 2015).
- N- Indicates Amphibian Habitat did not meet the criteria listed under the Ecoregion 6E SWH Criteria guide (MNRF 2015)
- * Denotes species heard calling outside 100m

Amphibian Habitat A

Three species of frog were detected calling from Amphibian Habitat A. This site targeted the cattail marsh at the south east corner of the study area. While Spring Peeper had greater than 20 individuals, all of the species were heard calling from beyond the 100m radius, outside of the study area. The cattail marsh does not meet the criteria for Significant Wildlife Habitat- Amphibian breeding (woodland). Surveys conducted in 2011, and supplemented in 2014 and 2015, also concluded that this habitat was not significant (habitat A, Appendix 6).

Amphibian Habitat B

Five species of frog were detected calling from within Amphibian Habitat B. This site targeted the large swamp thicket and open marsh habitat, located in the eastern portion of the study area, north of the Rail Trail. One species, Spring Peeper (*Pseudacris crucifer*), was estimated to have greater than 20 individuals, with a full chorus heard by AA during two separate surveys. All

frog species were heard calling from within the community. The thicket swamp community meets the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland), as there were greater than 2 species observed and greater than 20 individuals detected. Surveys conducted in 2011, and supplemented in 2014 and 2015, also concluded that this habitat was significant (habitat B, Appendix 6).

Amphibian Habitat C

Four species of frog was detected calling from within Amphibian Habitat C. This site targeted the large, open water marsh located on the north side of the rail trail, east of the study area. None of the individual species observed had greater than 20 individuals; however, there were greater than 20 total individuals of all species detected in the site. Amphibian habitat C meets the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland). This habitat was not evaluated in 2011.

Amphibian Habitat D

Four species of frog were detected calling during surveys at Amphibian Habitat D; all species were heard from within the 100m radius. This site targeted the treed/thicket swamp community, south of the rail trail, adjacent the northern most sewage treatment pond. Two species observed had greater than 20 individuals. The treed swamp community meets the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland). Surveys conducted in 2011, and supplemented in 2014 and 2015, also concluded that this habitat was significant (habitat I, Appendix 6).

Amphibian Habitat E

Three species of frog were detected calling from within Amphibian Habitat E. This site targeted a second thicket swamp community, directly north of the waste water treatment ponds, south of the coniferous plantation community. Two of the species observed had greater than 20 individuals. The thicket swamp community meets the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland). Surveys conducted in 2011, and supplemented in 2014 and 2015, concluded that this habitat was not significant, likely as a result of the multi-year nature of the surveys (habitat J, Appendix 6).

Amphibian Habitat F

One species of frog was detected during surveys at Amphibian Habitat F; two further species were detected calling from outside the 100m radius. All species detected were in low numbers, with 2-4 individuals. This site targeted the small meadow marsh located south of the sewage lagoons. The meadow marsh does not meet the criteria for Significant Wildlife habitat-Amphibian breeding (woodland). This habitat was not evaluated in 2011.

Amphibian Habitat G

Four species of frogs were detected during surveys at Amphibian Habitat G; all four species were detected calling from outside the 100m radius, from the adjacent property. This site targeted the mixed swamp adjacent to the south east sewage lagoon. The mixed swamp does not meet the criteria for Significant Wildlife habitat-Amphibian breeding (woodland), as no individuals were detected calling from within the survey limits. Surveys conducted in 2011, and

supplemented in 2014 and 2015, also concluded that this habitat was not significant (habitat G, Appendix 6).

Amphibian Habitat H

Four species of frog were detected during surveys at Amphibian Habitat H; two of the species were detected calling from outside the 100m radius. This site targeted the deciduous swamp and meadow marsh habitat adjacent to the Foley drain, south of Eco Parkway. The feature does not meet the criteria for Significant Wildlife habitat-Amphibian breeding (woodland), as there were less than 20 individuals detected. This habitat was not evaluated in 2011.

Amphibian Habitat I

Four species of frogs were detected calling from within Amphibian Habitat I. This site targeted the deciduous swamp adjacent to the Foley drain on the north side of the rail trail. All frog species were heard calling from within the community. The swamp community meets the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland), as there were greater than 2 species observed and greater than 20 individuals detected. Surveys conducted in 2011, and supplemented in 2014 and 2015, concluded that this habitat was not significant, likely as a result of the multi-year nature of the surveys (habitat G, Appendix 6).

Amphibian Habitat J

One species of frog was detected calling at Amphibian Habitat J; this species was heard calling from outside the 100m radius. This site targeted the meadow marsh community directly north of the end of Eco Parkway. The meadow marsh does not meet the criteria for Significant Wildlife Habitat-Amphibian breeding (woodland), as there were less than 2 species, and less than 20 individuals detected from within the 100m radius. This habitat was not evaluated in 2011.

3.4.1.1 Amphibian SAR, Regional and Local Significance

No amphibian species observed are considered federal or provincial species at risk. All species detected calling within the study area are ranked S5 (Very Common) in Ontario (NHIC, 2015).

3.4.2 Forest and Wetland Breeding Birds

The results of the Breeding Bird Survey (BBS) are presented in Appendix 17. Locations of significant observations are provided in *Figure 2*, and are approximate. They are designed to give a general indication of the area in which the species may be nesting. During BBS visits, a total of 57 species were detected over 11 point count locations and area searches. Species breeding evidence observed during point count surveys included 21 assigned 'Probable', 23 assigned 'possible', one assigned 'confirmed' and three showed no sign of breeding evidence. All were detected within the study area. During area search transects a total of 38 species were detected, eight of which were not identified during point counts (Canada Goose (*Branta canadensis*), Field Sparrow (*Spizella pusilla*), Great Blue Heron (*Ardea herodias*), Lesser Yellowlegs (*Tringa flavipes*), Ruffed Grouse (*Bonasa umbellus*), Solitary Sandpiper (*Tringa solitaria*), Spotted Sandpiper (*Actitis macularius*) and Wood Duck (*Aix sponsa*)) of these, only Canada Goose and Ruffed Grouse showed probable or confirmed evidence of breeding.

Due to the contiguity with natural lands surrounding the study area, it is important to note that, despite high levels of breeding evidence, a given species may not have been breeding specifically in the area in which it was observed. This is particularly true where species were only detected during one of the Breeding Bird Surveys. These species may have been foraging in these areas or, may have been wandering during post-breeding dispersal. Therefore the following 26 species are those that can be presumed to have been breeding in, or within 120m of the study area and were detected with probable or confirmed breeding evidence:

American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Blue Jay (*Cyanocitta cristata*), Canada Goose, Chipping Sparrow (*Passerculus sandwichensis*), Common Grackle (*Quiscalus quiscula*), Common Yellowthroat (*Geothlypis trichas*), Downy Woodpecker (*Picoides pubescens*), Eastern Meadowlark (*Sturnella magna*), Eastern Wood-pewee (*Contopus virens*), Hairy Woodpecker (*Picoides villosus*), House Wren (*Troglodytes aedon*), Indigo Bunting (*Passerina cyanea*), Killdeer (*Charadrius vociferus*), Mourning Warbler (*Oporornis philadelphia*), Northern Flicker (*Colaptes auratus*), Pileated Woodpecker (*Dryocopus pileatus*), Red-eyed Vireo (*Vireo olivaceus*), Red-winged Blackbird (*Agelaius phoeniceus*), Ruffed Grouse, Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow (*Melospiza melodia*), Swamp Sparrow (*Melospiza georgiana*), White-breasted Nuthatch (*Sitta carolinensis*), White-throated Sparrow (*Zonotrichia albicollis*), and Yellow Warbler (*Dendroica petechia*).

Most of the species presumed to be breeding in the study area, are considered common and abundant species (S-Rank 4-5).

3.4.3.1 Breeding Bird Species at Risk

Four species observed during breeding bird surveys are considered species at risk under the ESA. Eastern Meadowlark, Barn Swallow and Bobolink are listed as Threatened provincially and federally, Eastern Wood-pewee is listed as Special Concern provincially and federally, locations of observations are shown on Figure 4. All four species were also observed during Breeding Bird Surveys completed by Stantec (2013).

Barn Swallow occurs in farmlands, along lake/river shorelines, in wooded clearings and in urban populated areas. Nesting may occur inside or outside buildings; under bridges and in road culverts (COSEWIC 2011a). Two Barn Swallows were observed foraging over the open shallow marsh community, at point count G during the second survey (Figure 3 & Figure 4) no evidence of breeding was observed for this species, no suitable habitat for nesting was observed in the study area.

Eastern Meadowlark is an area sensitive, grassland species, often nesting in hay fields and pastures, as well as occasionally occurring in other types of grassed areas such as golf courses, and airfields. The grassland habitat requires a moderate thatch cover, low shrub and tree density, and moderate or limited forbs cover. Large tracts of grassland are typically preferred over smaller patches (McCracken et. al. 2013). Eastern Meadowlark was observed singing at point count K in the study area during breeding bird surveys (Figure 4), in habitat that

is of sufficient size, and matches criteria described above. Eastern Meadowlark was identified as probable breeding at point count K (Figure 3).

Bobolink nest in grassland habitats, including hayfields and meadows with a mixture of grasses and broad-leaved forbs with a high litter cover. They are considered area sensitive, with increased density in grasslands greater than 10ha (Renfrew et. al. 2015). Bobolink were observed singing and displaying during the first breeding bird surveys at point count A, and outside of the 100m radius at point count E. Habitat that is of sufficient size, and matches criteria was identified to the south at point count A, and to the east of point count E. Bobolink were identified as breeding in each features during grassland breeding bird surveys in each feature in 2015 (Figure 5).

Eastern Wood-pewee are associated with mid-age mixed and deciduous forest stands, often dominated by Maple (*Acer*), Elm (*Ulmus*) or Oak (*Quercus*), and include areas with clear-cuts, openings or forest edges. Eastern Wood-pewee also prefers forest stands with little to no understory vegetation (COSEWIC 2012). Eastern Wood-pewee was observed singing during the second breeding bird survey at point counts C, D and E, and during the first survey at point count A, and is a possible breeder at these locations. Eastern Wood-pewee was heard singing during both rounds of surveys at point count H and I, and is a probable breeder at these locations. All of these communities provide suitable breeding habitat for Eastern Wood-pewee (Figure 3).

3.4.3.2 Breeding Bird Regional and Local Significance

All species detected in the study area are ranked as either S5 (Very Common) or S4 (Common) in Ontario. The rank qualifier 'B' denotes the status of a migratory species during the breeding season.

The GRCA has identified a number of species considered Conservation Priorities in the watershed, based on data from Bird Studies Canada. Twenty-three species identified as Conservation Priorities were observed in the study area, eight of which showed probable or confirmed breeding evidence, locations of species showing probable or confirmed breeding evidence are described in Table 4.

Common Name	Scientific Name	GRCA ¹	Location(s) In Study Area
Canada Goose	<i>Branta canadensis</i>	✓	Observed in vicinity of sewage treatment ponds, adults with young
Eastern Meadowlark	<i>Sturnella magna</i>	✓	Observed in meadow habitat west of point count K, adjacent to sewage treatment ponds
Mourning Warbler	<i>Oporornis philadelphia</i>	✓	Observed in the young deciduous swamp at point count A, adjacent the Foley Drain
Pileated Woodpecker	<i>Dryocopus pileatus</i>	✓	Heard from point count B and K, greater than 100m away
Ruffed Grouse	<i>Bonasa umbellus</i>	✓	Observed in mixed woodland, adjacent to trail, and within woodland near treatment ponds

Table 4. Regionally Significant Breeding Bird Species

Common Name	Scientific Name	GRCA ¹	Location(s) In Study Area
Savannah Sparrow	<i>Passerculus sandwichensis</i>	✓	Observed calling from hay field, east of point count E, and open habitat west of point count K
Swamp Sparrow	<i>Melospiza georgiana</i>	✓	Observed at point count A, F, G, and H, calling within wetland habitats.
White-throated Sparrow	<i>Zonotrichia albicollis</i>	✓	Observed at Point count A, B, C, D and H, within wetland habitats.

¹ GRCA Species with Conservation Priority (GRCA, 2015)

3.4.3.3 Breeding Bird Regional Priority Species

The Ontario Landbird Conservation Plan (OLCP): Lower Great Lakes/St. Lawrence Plan, North American Bird Conservation Region 13 (Ontario Partners in Flight 2008) has identified a number of species that are considered conservation priorities for the region. Seven priority species were observed in the study area, including Eastern Wood-pewee, Northern Flicker, Field Sparrow, Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Savannah Sparrow, Eastern Meadowlark, and Bobolink. The OLCP does not provide legislative protection of species or their habitat, but rather identifies species that should be conservation priorities on a regional level that were not designated Species at Risk at the time of writing.

3.4.3 Grassland Breeding Birds

The results of the Grassland Breeding Bird Survey (BBS) are presented in Appendix 7. Locations of significant observations are provided in Figure 5, and are approximate. They are designed to give a general indication of the area in which the species may be nesting. During Grassland BBS visits, a total of 36 species were detected, of which three were assigned 'confirmed' breeding evidence, sixteen were assigned 'Probable', twelve were assigned 'possible' and nine were 'observed' showing no sign of breeding evidence. All species observed were detected within the study area.

It is important to note that, despite high levels of breeding evidence, a given species may not have been breeding specifically in the area in which it was observed. This is particularly true where species were only detected during one of the two Grassland Breeding Bird Surveys. These species may have been foraging in these areas or, may have been wandering during post-breeding dispersal. Therefore, the following 19 species are those that can be presumed to have been breeding in, or within 30m of, the study area, and exhibited confirmed or probable breeding evidence: Killdeer (*Charadrius vociferus*), Northern Flicker (*Colaptes auratus*), Pileated Woodpecker (*Dryocopus pileatus*), Eastern Kingbird (*Tyrannus tyrannus*), Blue Jay (*Cyanocitta cristata*), American Crow (*Corvus brachyrhynchos*), House Wren (*Troglodytes aedon*), European Starling (*Sturnus vulgaris*), Common Yellowthroat (*Geothlypis trichas*), Chipping Sparrow (*Spizella passerina*), Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow (*Melospiza melodia*), Bobolink, Red-winged Blackbird (*Agelaius phoeniceus*), and Eastern Meadowlark.

Most of the species presumed to be breeding in the study area, are considered common and abundant species (S-Rank 4-5).

3.4.3.1 Grassland Breeding Bird Species at Risk

Three species observed during grassland breeding bird surveys are considered species at risk under the ESA. Eastern Meadowlark, Barn Swallow and Bobolink are listed as Threatened provincially and federally, locations of observations are shown on Figure 5. All three species were also observed during Breeding Bird Surveys completed by Stantec (2013).

Barn Swallow occur in farmlands, along lake/river shorelines, in wooded clearings and in urban populated areas. Nesting may occur inside or outside buildings; under bridges and in road culverts (COSEWIC 2011a). Two Barn Swallow were observed foraging over grassland habitat, at Point count 1 and 4 during both surveys (Figure 5) no evidence of breeding was observed for this species, no suitable habitat for nesting was observed in the study area.

Eastern Meadowlark is an area sensitive, grassland species, often nesting in hay fields and pastures, as well as occasionally occurring in other types of grassed areas such as golf courses, and airfields. The grassland habitat requires a moderate thatch cover, low shrub and tree density, and moderate or limited forbs cover. Large tracts of grassland are typically preferred over smaller patches (McCracken et. al. 2013). Eastern Meadowlark were observed singing at point counts 1, 2, 3, 4 and 7 in the study area during breeding bird surveys (Figure 5), in habitat that is of sufficient size, and matches criteria described above. Eastern Meadowlark was identified as probable breeding in Grassland Bird feature 1, 2, 3 and 5 (Figure 5).

Bobolink nest in grassland habitats, including hayfields and meadows with a mixture of grasses and broad-leaved forbs with a high litter cover. They are considered area sensitive, with increased density in grasslands greater than 10ha (Renfrew et. al. 2015). Bobolink were observed singing and displaying during both breeding bird surveys at all point count locations in the study area in habitat that is of sufficient size, and matches criteria. Bobolink was identified as a confirmed breeder in Grassland feature 1 and 2, and a probable breeder in grassland features 3, 4 and 5 (Figure 5).

3.4.3.2 Breeding Bird Regional and Local Significance

All species detected in the study area are ranked as either S5 (Very Common) or S4 (Common) in Ontario. The rank qualifier 'B' denotes the status of a migratory species during the breeding season.

The GRCA has identified a number of species considered Conservation Priorities in the watershed, based on data from Bird Studies Canada. Thirteen species identified as Conservation Priorities were observed in the study area, five of which showed probable or confirmed breeding evidence, locations of species showing probable or confirmed breeding evidence are described in Table 5.

Table 5. Regionally Significant Breeding Bird Species

Common Name	Scientific Name	GRCA ¹	Location(S) In Study Area
Pileated Woodpecker	<i>Dryocopus pileatus</i>	✓	Heard calling from adjacent woodlands at point count 6.
Eastern Kingbird	<i>Tyrannus tyrannus</i>	✓	Territorial fighting observed over field at point count 4.
Savannah Sparrow	<i>Passerculus sandwichensis</i>	✓	Observed signing in grassland habitat throughout the study area.
Bobolink	<i>Dolichonyx oryzivorus</i>	✓	Observed signing and performing territorial displays throughout the study area, females also observed in all grassland habitats.
Eastern Meadowlark	<i>Sturnella magna</i>	✓	Observed signing in grassland habitat throughout the study area.

¹GRCA Species with Conservation Priority (GRCA, 2015)

3.4.3.3 Breeding Bird Regional Priority Species

The Ontario Landbird Conservation Plan (OLCP): Lower Great Lakes/St. Lawrence Plan, North American Bird Conservation Region 13 (Ontario Partners in Flight 2008) has identified a number of species that are considered conservation priorities for the region. Seven priority species were observed in the study area, including Belted Kingfisher (*Megaceryle alcyon*), Northern Flicker, Eastern Kingbird, Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Savannah Sparrow, Eastern Meadowlark, and Bobolink. The OLCP does not provide legislative protection of species or their habitat, but rather identifies species that should be conservation priorities on a regional level that were not designated Species at Risk at the time of writing.

3.4.4 Winter Wildlife

A total of 11 species were identified during the Winter Wildlife Survey, including five bird species and six mammal species. Figure 3 illustrates the Winter Wildlife Survey route. All species identified during the survey are listed in Appendix 8. All species identified during the winter wildlife survey are considered provincially Secure (S5) or Apparently Secure (S4). No Significant Wildlife Habitat was identified during the Winter Wildlife Survey.

Snow depth in the study area during the January 14 surveys was approximately 0.20m up to 0.6m in snow drifts. There was no precipitation during the survey or in the proceeding 24 hours. Approximately 3-6 cm of fresh snow cover fell in the 48 hours prior to the survey. During the February 20th survey, snow depth in the study area was approximately 0.30m, and up to 0.9m in snow drifts. There was no precipitation during the survey or proceeding 24 hours. Approximately 3-6 cm of fresh snow cover fell in the 48 hours prior to the survey.

3.4.5 Incidental Wildlife Observations

All Incidental wildlife observations made outside of the above formal field surveys are presented in Appendix 9. All observations were of single individuals unless otherwise stated. Species with conservation designation are described in Table 6, and identified on Figure 4. One candidate snake hibernaculum was observed at coordinates: 549094.44154mE, 4889672.14286mN. Its location is shown on *Figure 4* and pictures are provided in the photo log, Appendix 15.

Table 6. Incidental Species with Conservation Designation Observations

Common Name	Scientific Name	Taxa	Date -Observation	Significance
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Table 6. Incidental Species with Conservation Designation Observations

Common Name	Scientific Name	Taxa	Date -Observation	Significance
Common Snapping Turtle	<i>Chelydra serpentina</i>	Reptile	June 14 - Adult observed crossing Eco Parkway road, moving from north to south, adjacent the Foley Drain.	<ul style="list-style-type: none"> Species of Special Concern, provincially and federally
Eastern Wood-pewee	<i>Contopus virens</i>	Bird	June 14 - Observed singing from woodland west of grassland feature 4	<ul style="list-style-type: none"> Species of Special Concern provincially and federally

3.4.6 Species Listed under the Endangered Species Act

Observations, habitat requirements, breeding evidence and a habitat assessment of four species at risk, Bobolink, Eastern Wood-pewee, Eastern Meadowlark and Common Snapping Turtle, observed in the study area, are discussed below. No other federal or provincially listed plant or fish species were identified within the study area through background research, provided data, or field observations.

3.4.5.1 Bobolink

Bobolink is listed as Threatened provincially (ESA 2007) and federally (Species at Risk Public Registry 2014). Bobolink and their general habitat are afforded protection under the ESA. The species typically nests in open grasslands and hay fields. Bobolink are an area-sensitive species, preferring grassland habitat >10ha in area. Bobolink was observed singing in a number of grassland communities in the study area. This species is a confirmed breeder in the study area, and locations identified as significant habitat for breeding Bobolink are identified on Figure 5.

3.4.5.2 Eastern Wood-pewee

Eastern Wood-pewee is listed as Special Concern provincially (ESA 2007) and federally (Species at Risk Public Registry 2014); general habitat protection is not afforded to Special Concern species under the ESA. However, species listed as Special Concern and their habitat is protected under the PPS (2014), through the protection of Significant Wildlife Habitat. The species typically nests in forest clearings and edges of deciduous and mixed forests with an open understory (MNR 2014b). Nests are built on top of the horizontal limbs of mature deciduous trees (COSEWIC 2012). Eastern Wood-pewee was observed singing in the woodland adjacent to grassland feature 4, the observation occurred after grassland breeding bird surveys. Since it was observed within the regular breeding bird window, this species is considered a possible breeder within the deciduous and mixed forests of the study area.

3.4.5.2 Eastern Meadowlark

Eastern Meadowlark is listed as Threatened provincially (ESA 2007) and federally (COSEWIC 2011b). Eastern Meadowlark and their general habitat are afforded protection under the ESA. The species typically nests in open grasslands and hay fields. Eastern meadowlark are an area-sensitive species, preferring grassland habitat >10ha in area. Eastern meadowlark was observed singing in a number of grassland communities in the study area. This species is a

probable breeder in the study area, and locations identified as significant habitat for breeding Eastern Meadowlark are identified on Figure 5.

3.4.5.3 Common Snapping Turtle

Common Snapping Turtle is listed as Special Concern provincially (ESA 2007) and federally (Species at Risk Public Registry 2014), general habitat protection is not afforded to Special Concern species. However, species listed as Special Concern and their habitat is protected under the PPS (2014), through the protection of Significant Wildlife Habitat. Snapping Turtle is generally found in shallow waters with soft mud bottoms and leaf litter (COSEWIC 2008a). Nesting occurs on gravely or sandy areas along streams, roadsides or embankments. The observation of one Snapping Turtle was made as the turtle traversed Eco parkway; no habitat in the vicinity of where the turtle was observed would provide suitable nesting or overwintering habitat. Candidate suitable habitat is found outside the study area, including to the south on the east side of the rail trail, and to the north, on the west side of the rail trail (CSWH 23 & 24, Figure 4). This species is unlikely to be overwintering or nesting in the study area, as suitable habitat was not identified.

3.5 Significant Wildlife Habitat

With guidance from the *Significant Wildlife Habitat Technical Guide* (MNRF 2000) and the SWH EcoRegion Criterion Schedule 6E (MNRF 2015), two types of Significant Wildlife Habitat (SWH) were confirmed as present within the study area (Appendix 10). Confirmed and unknown candidate habitat and their locations and assessment are presented in Table 7. Studies to confirm Bat Maternity Habitat, Reptile Hibernacula or Waterfowl stopover and Staging Areas (terrestrial) have not been completed in the study area. Following the MNRF Guelph District Protocol (MNRF 2014), all Candidate Bat Maternity Habitat will be assumed significant. In the event that site activities will impact Wildlife Habitat of unknown significance, it is recommended that detailed studies occur pre-construction.

Table 7. Confirmed (SWH) and Candidate (CSWH) Significant Wildlife Habitat

SIGNIFICANT WILDLIFE HABITAT TYPE	RATIONALE	LOCATION (FIGURE 4)
Waterfowl Stopover and Staging (Terrestrial)	<ul style="list-style-type: none"> Large flooded field feature, with abundant waste grain in the spring. No surveys were completed to determine significance. 	CSWH 12
Habitat for Special Concern and Rare Wildlife Species (Eastern Wood-pewee)	<ul style="list-style-type: none"> Stantec Confirmed Breeding of Eastern Wood-pewee during Breeding Bird surveys, location of the observation was unavailable. The deciduous woodland feature had probable breeding evidence of Eastern Wood-pewee during grassland breeding bird surveys conducted by AA. 	SWH 3,5,6,7,8

Table 7. Confirmed (SWH) and Candidate (CSWH) Significant Wildlife Habitat

SIGNIFICANT WILDLIFE HABITAT TYPE	RATIONALE	LOCATION (FIGURE 4)
Bat Maternity Habitat	<ul style="list-style-type: none"> All ELC communities meeting the criteria for bat habitat (with the exception of those already determined to be SWH for Eastern Wood-pewee), as listed in the MNRF Guelph District guidelines, including FOD, FOM, FOC, SWD, SWM, SWC with trees >25cm DBH. 	CSWH 11-8, 13-17
Amphibian Breeding Habitat (Woodland)	<ul style="list-style-type: none"> Six areas identified as candidate habitat in the study area met the criteria for significance. Each feature included at least two of the listed species and greater than 20 individuals. 	SWH 1,2,9,10,11,12
Reptile Hibernaculum	<ul style="list-style-type: none"> Two areas of candidate hibernacula habitat were identified in the study area (Figure 4). These areas included numerous piled stones, pieces of foundation and rubble. One was identified by Stantec in the hay field adjacent the trail, no snakes were observed in the vicinity of this candidate hibernaculum during any surveys; A second was identified by Aboud & Associates in the old field adjacent the cultural woodland north of Eco Parkway road. Two Eastern Garter Snakes were observed in the vicinity during grassland breeding bird surveys. 	CSWH 9-10

3.6 SAR Habitat Assessment

An assessment of all Species at Risk, and species with conservation designation, that have the potential to occur in the study area based on lists provided by GRCA, MNRF and the NHIC was completed, and is provided in Appendix 11. Species assessed include all species with Provincial SARO status, Federal SARA status, or an S-rank of S1-S3. Species assessed with the potential to occur in the study area, but that were not observed during field studies are discussed in detail below.

3.6.1 Vegetation

3.6.1.1 Butternut

Butternut is listed as Endangered provincially (ESA 2007) and federally (Species at Risk Public Registry 2014). Butternuts primarily occur in rich, moist, well drained soils, often along streams (MNRF 2015a). Habitat for Butternut is present along the streams throughout the study area. Butternut was not identified in these communities during field surveys or through background resources. MNRF Butternut records in Ontario mapping showed no known butternut populations in the general proximity of the subject property.

3.6.2 Wildlife

3.6.2.1 Western Chorus Frog - Great Lakes / St. Lawrence - Canadian Shield Population

Western Chorus frog (*Pseudacris triseriata pop. 2*) is listed as Threatened provincially (ESA 2007) and federally (Species at Risk Public Registry 2014). Generally found in lowland

communities, such as swamps, inhabiting lowland shrubs and grasses in the community, near breeding habitat. Breeding occurs in lowland, ephemeral ponds, devoid of predatory fish species (COSEWIC 2008a). Candidate habitat for this species occurs in the study area, thicket swamps and meadow marshes may provide suitable breeding habitat. Western Chorus Frog was not observed during amphibian surveys or incidentally in the study area.

3.6.2.2 *Monarch Butterfly*

Monarch (*Danaus plexippus*) is listed as Special Concern provincially (ESA 2007) and federally (Species at Risk Public Registry 2014). Monarch butterflies require milkweed for larval feeding, and other wildflower species are also important for adult feeding when milkweed is not in flower; often found in abandoned farmland, along roadsides, and other open spaces (COSEWIC 2010b). Habitat (including host plants) occurs regularly in meadow communities in the study area. Monarch was not observed incidentally within potential habitat during any surveys completed by AA or previous studies in the study area.

3.6.2.3 *Canada Warbler*

Canada Warbler is listed as Special Concern provincially (ESA 2007) and Threatened federally (Species at Risk Public Registry, 2014). Canada Warbler prefers wet, coniferous, deciduous and mixed forest types, with a dense shrub layer (COSEWIC 2008b). Habitat for Canada Warbler may occur in the wet mixed forest occurring throughout the study area (SWCM3-2, SWCM1-2). Canada warbler was not observed during breeding bird surveys, incidentally in the study area, or during studies completed by Stantec.

3.6.2.4 *Grasshopper Sparrow*

Grasshopper sparrow is listed as Special Concern federally (Species at Risk Public Registry, 2014). Grasshopper sparrow prefers moderately open grasslands and prairies with patchy bare ground; and avoids grasslands with extensive shrub cover (Vickery 1996). Habitat for this species may occur in the study area. Meadow and hay communities may provide suitable breeding habitat. Grasshopper Sparrow was not observed during breeding bird surveys, incidentally in the study area, or during studies completed by Stantec.

3.6.2.5 *Wood Thrush*

Wood Thrush is listed as Special Concern provincially (ESA 2007) and Threatened federally (Species at Risk Public Registry, 2014). Wood Thrush generally prefer second growth moist deciduous forests, with tall trees, and a dense understory of low saplings and an open forest floor with decaying leaf litter. Often nests in saplings, shrubs or occasionally dead stumps (COSEWIC 2012a). Habitat for this species may occur in the study area. Deciduous Sugar Maple forests may provide suitable breeding habitat. Wood Thrush was not observed during breeding bird surveys, incidentally in the study area or during studies completed by Stantec.

3.6.2.6 *Eastern Small-footed Myotis*

Eastern Small-footed Myotis is listed as Endangered provincially (ESA 2007). This species is associated with hilly or mountainous terrain, in or near coniferous or deciduous forest habitat.

Maternity roosts located in cracks and crevices of talus slopes and rocky outcrops, or, occasionally, in bridges, old buildings, hollow trees (or loose bark) and caves and mines, during the maternity season. Hibernate singly or in small clusters in mines and caves (NatureServe, 2015). Habitat for this species may occur in the study area. Coniferous and deciduous forest occurs in the study area and may provide suitable maternity habitat. No surveys for bats or bat habitat were conducted in the study area; this species was not observed incidentally or by Stantec.

3.6.2.7 Little Brown Myotis

Little Brown Myotis is listed as Endangered provincially (ESA 2007) and federally (Species at Risk Public Registry, 2014). Little Brown Myotis hibernate in Caves. Maternity colonies are located in warm sites, often associated with human habitation, including attics, old buildings, under bridges, rock crevices and cavities in canopy trees in wooded areas (COSEWIC, 2013c). Habitat for this species may occur in the study area. Coniferous and deciduous forest occurs in the study area and may provide suitable maternity habitat. No surveys for bats or bat habitat were conducted in the study area; this species was not observed incidentally or by Stantec.

3.6.2.8 Northern Myotis

Northern Myotis is listed as Endangered provincially (ESA 2007) and federally (Species at Risk Public Registry, 2014). Northern Myotis Hibernate in Caves; and maternity colonies are usually located in trees, which are closely associated with specific tree characteristics and density of suitable trees. Woodlands characterized by tall, large diameter trees in early stages of decay, located in openings in mature forest canopies are preferred (COSEWIC, 2013c). Deciduous forest occurs in the study area and may provide suitable maternity habitat. No surveys for bats or bat habitat were conducted in the study area; this species was not observed incidentally or by Stantec.

3.6.2.9 Blanding's Turtle

Blanding's Turtle is listed as Threatened provincially (ESA 2007) and federally (Species at Risk Public Registry, 2014). Blanding's Turtles use a variety of eutrophic wetland habitat types, including lakes, ponds, watercourses, marshes, man-made channels, farm fields, coastal areas and bays. Seasonal overland terrestrial movements up to 2.5 km occur to reach nesting and overwintering areas, generally through wooded coniferous or mixed forest habitat. Nests are usually laid in loose sand or organic soil (COSEWIC 2005b). Swamps, wetlands, coniferous and mixed woodlands, may all provide habitat in the study area for seasonal overland movements. No surveys were conducted for Blanding's Turtle in the study area. Blanding's Turtle was not observed during any surveys incidentally or during surveys completed by Stantec.

3.6.2.10 Eastern Ribbonsnake

Eastern Ribbonsnake is listed as Special Concern provincially (ESA 2007) and federally (Species at Risk Public Registry, 2014). Eastern Ribbonsnake is a semi-aquatic species that inhabits dense, low- vegetation, edges of ponds, streams, marshes, fens and bogs, with open sunlit areas for basking (COSEWIC 2002c). Suitable habitat for this species exists in the study

area. No surveys for snakes were conducted in the study area. Eastern Ribbonsnake was not observed during any surveys incidentally, or during surveys completed by Stantec.

3.6.2.11 Milksnake

Milksnake is listed as Special Concern provincially (ESA 2007) and federally (Species at Risk Public Registry, 2014). Milksnake are habitat generalists often associated with edge habitat, meadows, prairies, pastures, rocky outcrops and human disturbances such as hydro corridors and railway embankments. Habitat is usually close to a water source. Hibernation occurs in a variety of natural and man-made features, including rotting logs, old foundations, basements and burrows (COSEWIC 2014). Suitable habitat for this species exists in the study area. No surveys for snakes were conducted in the study area. Milksnake was not observed during any surveys incidentally or during surveys completed by Stantec.

3.6.3 Fish

3.6.3.1 Redside Dace

Redside Dace (*Clinostomus elongatus*) is listed as Endangered provincially (ESA 2007) and, is Under Consideration for listing federally (SARA 2014) and listed as Endangered under COSEWIC (2007). Redside Dace inhabit cool to cold water tributaries. The stream segments within the study area are identified as warm water and would not likely be suitable for Redside Dace. MNR, Redside Dace records in Ontario mapping has shown no known Redside Dace populations in the upper tributaries of the Grand River.

3.6.3.2 Northern Brook Lamprey

Northern Brook Lamprey (*Ichthyomyzon fossor*) is listed as Special Concern (EAS 2007). The Northern Brook Lamprey lives in cool water, slow moving streams with soft substrate such as silt or sand. Spawning occurs in fast flowing riffle areas comprised of rock or gravel. Appropriate habitat is present within the study area, although the water may be too warm as it is classified as warm water.

3.7 Aquatic Habitat Assessment

Background GRCA records indicate that the watercourse averages 1.5m wide and 9-10cm in depth within the downstream portion of the study area, and 4-5m wide and 3m depth within the upstream reach of Green Ash Mineral Deciduous Swamp and Birch – Poplar Mineral Mixed Swamp. Aquatic habitat records from the GRCA indicate that the watercourse on site is classified as warmwater fish habitat. The MNR identifies the watercourse as being coolwater. This difference in classification of thermal regime between the two agencies could be the result of different classification methodology and reliance on limited data sets.

GRCA fish data confirms the presence of a mixed water community (i. e. warmwater and coolwater species), consisting of common, and tolerant to moderately intolerant, species. The GRCA has identified the watercourse within the subject property as Northern Pike spawning habitat. MNR fish and watercourse records were available for a single fish collection event that

occurred in 2000. The collection occurred just downstream of the study area, where the Foley drain passes under Ida Street; six fish species were identified. No aquatic SAR has been identified in watercourses near the subject property. A list of all identified fish species within the watercourse in the vicinity of the subject property is provided in Appendix 14.

GRCA indicated that the watercourse is classified as a DFO Class E Drain. This means the flow is considered permanent, the spawning period is in the spring, and sensitive species are known to be present.

During the aquatic habitat assessment and through incidental observations, fish were observed in multiple stream segments. Most notably, approximately 30 fish between 15cm to 30cm in length of an unidentified species were observed in the downstream section of stream Reach 7, near Ida Street. Large numbers of smaller fish, 3-5cm in length, were observed throughout the watercourse.

The stream reaches within the study area generally showed historic evidence of channelization, and drain construction, although many areas have re-naturalized. Banks were generally vegetated, although steep in many reaches, and often showed evidence of undercutting and erosion. Potential fish habitat occurred throughout the system. Northern Pike spawning has previously been identified in the tributary, exact locations are unknown. Potential pike spawning habitat, consisting of heavily vegetated stream banks and floodplains exists throughout the study area.

Images of the watercourse and aquatic habitat are included in the report photo log, Appendix 15.

3.8 Landscape Evaluation

3.8.1 Ecoregion

The study area is located within Ecoregion 6E. This is the second most densely populated ecoregion in Ontario (MNR 2009), containing a number of large urban centers. The climate of the ecoregion is mild and moist with mean annual precipitation between 759 to 1,087 mm. The underlying geology of the ecoregion is dolomite and limestone, with deep glacially deposited surface soils covering the bedrock in most areas.

Forest cover of the ecoregion is approximately 30.1% and composed of a diverse mixture of hardwood forests, lowlands and flood plain forest. Common tree species within the Ecoregion include; Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga canadensis*), Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Red Maple (*Acer rubrum*), Eastern White Cedar (*Thuja occidentalis*), Yellow Birch (*Betula alleghaniensis*), Balsam Fir (*Abies balsamea*), and Black Ash (*Fraxinus nigra*) (MNR 2009).

3.8.2 Surficial Geology and Groundwater

The bedrock geology identified in the study area is the Middle and Lower Silurian formation, consisting of dolostone and shale and the Guelph formation (dolostone). This is overlaid with Dundalk Till Plan, which consists of a poorly drumlinized till plan (Waterloo Hydrogeologic Inc. 2003). The till plan is rich in fine-grained clay and silt material, leading to low permeability and high rates of surface flow and runoff; Soil erosion is prevalent in the area due to these conditions as well as land use patterns that have reduced the extent of wetlands and natural areas.

3.8.3 Connectivity and Existing Natural Features

Natural features of the study area such as the Significant Woodland, the headwater tributaries of the Upper Grand River Reach and the Provincially Significant Melancthon Wetland Complex #1 serve as linkage corridors within the broader landscape. The subject property provides a direct corridor to the Provincially Significant Riverview Swamp Wetland and associated large forest to the southeast. To the north and west, the study area is connected with the other wetland units of the Melancthon Wetland Complex #1. A large number of smaller unevaluated wetlands exist around the subject property (Figure 7).

The watercourse within the study area is connected to the larger Upper Grand River Reach and provides fish habitat and spawning areas. The wetlands on the subject property positively impact the flow regime within the watercourse through moderating flow during high and low periods, reducing flash flows and low water levels.

3.8.4 Significant Features

The Melancthon Wetland Complex #1 on the subject property is a Significant Feature provincially and in the Official Plans of Township of Southgate (2006) and Grey County (1997). Portions of the forest on the Subject property are considered Significant Woodlands in the Grey County Official Plan (1997). No other identified Significant Landscape Features are present on the subject property.

4.0 Summary and Conclusion

The following is a summary of the existing natural heritage conditions assessed and identified within the study area of the Dundalk Industrial Access Road and Wastewater Treatment Facility Expansion, Schedule B Municipal Class Environmental Assessments. A summary of significant features is provided in Table 7.

4.1 Summary of Existing Conditions

4.1.1 Vegetation

An ELC evaluation and botanical inventory was completed throughout the subject lands. No offsite adjacent lands were investigated due to access restrictions. Previous studies were completed by Stantec, and included ELC; three season botanical inventory and wetland boundary delineation.

1. 27 natural or naturalized vegetation communities were identified, characterised and mapped. None of the ELC communities are considered provincially rare.
2. 206 species or distinct sub-species of plants were identified within the study area through field inventory and background sources. 78% of identified species are native to Ontario, with the remaining 22% of identified species exotic to Ontario.
3. No provincial or federal species at risk were identified within the study area. 4 species identified are considered rare in Grey County.

4.1.2 Wetlands

1. The Provincially Significant Melancthon Wetland Complex #1 is a core natural feature within the study area and surrounding landscape.
2. The wetland was evaluated under the Ontario Wetland Evaluation System (OWES) by the MNRF in 1997 and is currently in the process of MNRF revisions.
3. The mapped wetland boundary provided by LIO was determined to be outdated and inaccurate through air photo interpretation and field evaluations. Updated boundary delineation was completed in 2015 to accurately map the wetland boundary (*Figure 6*). The new boundary has not been approved by the MNRF or GRCA.
4. Within the study area wetland consists of Mixed Swamp, Deciduous Swamp, Thicket Swamp, Meadow Marsh, Shallow Marsh, and Floating-leaved Shallow Aquatic communities.
5. The Grand River Fisheries Management Plan identified the headwater wetland of the Upper Grand reach as an important feature in moderating flow regime and improving habitat quality.

4.1.3 Wildlife

1. Where access was permitted, surveys for Amphibians, Grassland Breeding Birds, Winter Wildlife and a site assessment for Significant Wildlife Habitat, and Habitat for SAR were completed in appropriate habitats in the study area. Previous studies were completed by Stantec, and included Amphibians, Breeding Birds, Winter Wildlife and an assessment of Wildlife Habitat.
 - a. AA completed two rounds of calling amphibian surveys at ten candidate locations in June 2014 and April 2015. This updated and completed surveys conducted by Stantec in 2011.
 - b. AA completed three full rounds of amphibian surveys in 2016, in order to update the results from 2011, and provide a more accurate and updated round of surveys completed in the same calendar year, to account for fluctuations in temperature and timing windows from year to year.
 - c. Grassland Breeding Bird Surveys were conducted twice, once in June and once in early July; to assess and confirm grassland Species at Risk habitat identified by Stantec. A total of 6 point counts and three transect surveys were completed.
 - d. Forest and Wetland Breeding Bird surveys were completed in 2016, in order to update surveys completed in 2011 which did not include location information for species observed.
 - e. An assessment of the study area for candidate Significant Wildlife Habitat was conducted during all surveys completed in 2015.
2. Eight frog, 63 bird, one snake, one turtle and seven mammal species were observed in the study area over the course of all field investigations.
3. Five species listed under the ESA were identified during field investigations: Eastern Meadowlark (THR), Bobolink (THR), Barn Swallow (THR) Eastern Wood-pewee (SC), and Common Snapping Turtle (SC).
 - a. Eastern Meadowlark was observed, with evidence of probable breeding within the study area. Seven individuals were observed in four out of five grassland features (Figure 5) during two rounds of grassland breeding bird surveys.
 - b. Bobolink was observed, with evidence of confirmed breeding in the study area. Twenty-seven individuals were observed; Bobolink was present in all grassland features (Figure 5), where the habitat continued to occur, during grassland breeding bird surveys.
 - c. Eastern Wood-pewee was observed in the study area, occurring in a number of the woodland communities in the study area, (Figure 4).
 - d. Barn Swallow was observed foraging over grassland feature 1 and the shallow marsh feature to the east of the study area, no breeding evidence or potential nesting structures were observed in the study area.
 - e. Common Snapping Turtle was observed crossing the Eco Parkway road, no evidence of overwintering or nesting was observed.

4. Thirteen species identified, are considered Area Sensitive.
5. Eight species identified are Partners in Flight (PIF) Priority species.
6. Twenty-six species of birds identified in the study area are considered Conservation Priorities by the GRCA.

4.1.4 Significant Wildlife Habitat (SWH)

1. A review of the study area using a combination of methods presented in the Ecoregion 6E criteria guide, air photo interpretation and field investigations assessed the study area for Significant Wildlife Habitat that may occur in ecoregion 6E.
2. A total of six types of SWH were identified as candidate in the study area, three were confirmed significant using the results of all surveys completed in the study area and background resources. Three are unconfirmed, pending further surveys pre-construction.
3. Open-country Grassland Bird Breeding Habitat, Habitat for Special Concern and Rare Wildlife Species, and Amphibian Breeding Habitat (Woodland) were identified as candidate, confirmed through field studies and delineated in the study area.
4. Candidate Bat Maternity Habitat, Waterfowl Stopover and Staging (Terrestrial), and Reptile Hibernaculum were identified as candidate in the study area, assumed significant and delineated in the study area. Further surveys are proposed where pre-construction impacts to candidate habitat may occur.

4.1.5 Species at Risk Habitat Assessment

1. A review of the study area was completed, using habitat requirements from reference documents, air photo interpretation and field investigations, to assess for habitat that may be suitable for Species at Risk. This list included all species identified through background review as occurring in Grey County (Pers. Comm., Kathy Dodge, 2015), identified in Wildlife Atlases or identified through NHIC (2015) that may occur in the study area.
2. Potential habitat for 17 species was identified in the study area. Surveys were conducted that targeted habitat that may be suitable for these species through the completion of grassland breeding bird surveys, amphibian surveys and vegetation surveys.
3. During all surveys completed in the study area by AA and Stantec, five of the wildlife species with candidate habitat were identified in the study area. Of those, three (Eastern Meadowlark, Bobolink and Eastern Wood-pewee) were completing important life stages in the vicinity of the study area, and two were observed incidentally, outside the breeding season, or showing no signs of breeding evidence or nesting (Barn Swallow and Common Snapping Turtle).

4.1.6 Aquatic Habitat Assessment

1. An Aquatic Habitat Assessment was completed for all open water communities and stream reaches within the study area. The Aquatic Habitat Assessment is based on a field survey completed on October 20, 2015 and background resources provided by MNRF and GRCA.
2. Field surveys characterised stream reaches with respect to bank stability, substrate type, flow pattern and vegetation cover. All fish observations were recorded.
3. The Foley Drain watercourse is classified as a Warmwater / Coolwater headwater tributary by the MNRF and GRCA.
4. Tributaries of the Foley Drain have been identified as Northern Pike spawning habitat, a managed fish species in the Grand River Fisheries Management Plan.
5. Twelve species of fish have been identified within the Foley drain through sampling conducted by the MNRF and GRCA in 1996 and 2000.

4.2 Summary of Significant Features

A summary of existing conditions of natural heritage features are provided in Section 4.1. Several natural heritage features are considered significant, including but not limited to, Species at Risk listed under Ontario’s Endangered Species Act and Significant Wildlife Habitat under the Provincial Policy Statement. In addition to the natural heritage features present within the study area, features identified as significant are provided varying levels of protection and management. A summary of significant features is provided in Table 7.

Table 7. Summary of Significant Features

Significance /Type	Site Assessment and Observations	Legislation, Policy and Management Considerations	Figure
Species at Risk	<ul style="list-style-type: none"> •Barn Swallow (THR) observed foraging in the study area, no nesting habitat or breeding evidence. •Bobolink (THR), observed in the study area, confirmed breeding in study area. •Eastern Meadowlark (THR), observed in the study area, probable breeding in study area. •Eastern Wood-pewee (SC), probable Breeding in the study area. •Common Snapping Turtle (SC), observed in the study area. 	<p><i>Endangered Species Act, 2007</i></p> <ul style="list-style-type: none"> •Species listed as Special Concern (SC) are not afforded general habitat protection under the ESA. •Threatened (THR) and Endangered (END) species are afforded General Habitat Protection under the ESA. <p><i>Provincial Policy Statement, 2014</i></p> <ul style="list-style-type: none"> •The habitat of Species listed as Special concern is protected under the PPS as Significant Wildlife Habitat. 	4 & 5
Fish Habitat	<ul style="list-style-type: none"> • All watercourse and open water communities provide fish habitat, with known fish communities. •All watercourses and bodies of water within the study area have been identified and Warmwater/coolwater habitat 	<p><i>Fisheries Act, 1985</i></p> <ul style="list-style-type: none"> •Protects the productivity of recreational, commercial and Aboriginal fisheries. Fish communities and habitat within the study area are afforded protection. • Construction must respect the Warmwater/coolwater fisheries timing window of no in-water work from March 15 – July 15. 	6

Table 7. Summary of Significant Features

Significance /Type	Site Assessment and Observations	Legislation, Policy and Management Considerations	Figure
<p>Significant Wildlife Habitat (SWH)</p>	<ul style="list-style-type: none"> •Waterfowl Stopover and Staging (Terrestrial). •Habitat for Special Concern and Rare Wildlife Species. •Bat Maternity Habitat. •Amphibian Breeding Habitat (Woodland). <p>Reptile Hibernacula</p>	<p><i>Provincial Policy Statement, 2014</i></p> <ul style="list-style-type: none"> •Under the PPS, “<i>Public Infrastructure including but not limited to roads, sanitary sewers, utilities, water supply wells, well house, and pipeline ...may be permitted in accordance with the policies in Section 7.1.2 - 7.1.3 – General Policies, provided that it can be demonstrated that:</i> <p><i>a) an Environmental Assessment or other comprehensive plan supported by the GRCA, demonstrates that all alternatives to avoid wetland loss or interference have been considered and that the proposed alignment minimizes wetland loss or interference to the greatest extent possible, and</i></p> <p><i>b)where unavoidable, intrusions on significant natural features or hydrologic or ecological functions are minimized and it can be demonstrated that best management practices including site and infrastructure design and appropriate remedial measures will adequately and enhance features and functions.</i></p>	<p>4</p>
<p>Landscape Features</p>	<ul style="list-style-type: none"> • The natural lands within the study area are contiguous with surrounding natural features such as Provincially Significant Wetlands, fish spawning habitat and Significant Woodlands. 	<p><i>Grey County Official Plan (1997)</i></p> <ul style="list-style-type: none"> • Requires that EIS's include: “<i>recommendations on the connectivity or linkages of the natural heritage feature or features being assessed to other natural heritage features or systems</i>”. <p><i>Provincial Policy Statement, 2014</i></p> <ul style="list-style-type: none"> •Under the PPS, “<i>The diversity and connectivity of natural features in an area, and long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.</i> 	<p>7</p>

Table 7. Summary of Significant Features

Significance /Type	Site Assessment and Observations	Legislation, Policy and Management Considerations	Figure
Provincially Significant Wetlands	<ul style="list-style-type: none"> The Provincially Significant Melancthon Wetland Complex #1 comprises approximately 71 ha of the subject property. The width of Adjacent Lands to PSWs (i.e. the width of lands where development or site alteration would have a negative impact on the feature) is 120m 	<p><i>Grey County Official Plan (1997)</i></p> <ul style="list-style-type: none"> No Development or site alteration is permitted within the Provincially Significant Wetlands designation. <p><i>Provincial Policy Statement, 2014</i></p> <ul style="list-style-type: none"> Under the PPS, "Public Infrastructure including but not limited to roads, sanitary sewers, utilities, water supply wells, well house, and pipeline, within a wetland... may be permitted in accordance with the policies in Section 7.1.2 - 7.1.3 – General Policies, provided that it can be demonstrated that: <ul style="list-style-type: none"> a) an Environmental Assessment or other comprehensive plan supported by the GRCA, demonstrates that all alternatives to avoid wetland loss or interference have been considered and that the proposed alignment minimizes wetland loss or interference to the greatest extent possible, and b) where unavoidable, intrusions on significant natural features or hydrologic or ecological functions are minimized and it can be demonstrated that best management practices including site and infrastructure design and appropriate remedial measures will adequately and enhance features and functions. 	6

4.3 Conclusion

The Natural Heritage – Existing Conditions report was completed as part of Municipal Class Environmental Assessment’s for two proposed projects. The EA’s are being completed in order to determine the most suitable route option for the proposed Dundalk Industrial Access Road and the most suitable site location for the expansion of the waste water treatment facility.

The proposed Municipal Road would connect Highway 10 to Ida Street and have consideration for the natural environment, transportation, socio-economic impacts and construction costs. The proposed expansion of the waste water treatment facility would increase capacity to meet expected needs for the town of Dundalk.

The Natural Heritage - Existing Conditions Report has identified significant species, features and ecological functions within the study area, all of which should be considered in ranking potential options and the selection of the preferred options.

An Analysis of Options Report for each project will follow the Existing Conditions Report as part of the EA process. It will assess the impacts of each proposed road option and each proposed

waste water treatment facility expansion option to the existing natural heritage features within the study area and surrounding landscape. The analysis will also include mitigation guidelines for the proposed options to protect and enhance, where feasible, the natural heritage features identified in the study area.

Prepared By:

ABOUD & ASSOCIATES INC.

Cheryl-Anne Ross, B.Sc.
Ecology Lead & Wildlife Ecologist

Ryan Hamelin, M.Sc.
Terrestrial and Wetland Ecologist

Reviewed By:

Steven Aboud, B.Sc. Principal.
ISA Certified Arborist No. ON-0323A
ISA Tree Risk Assessment Qualified
Butternut Health Assessor No. 497
Senior Ecologist

5.0 References

- Bird Studies Canada. 2001. Ontario Breeding Bird Atlas: Guide for Participants. Bird Studies Canada in cooperation with Environmental Canada (Canadian Wildlife Service), Federation of Ontario Field Naturalists, Ontario Field Ornithologists, Ontario Ministry of Natural Resources.
- Bird Studies Canada. 2009. Marsh Monitoring Program Participant's Handbook: Getting Started. 2009 Edition. 13 pages. Published by Bird Studies Canada in cooperation with Environment Canada and the U.S. Environmental Protection Agency. February 2009.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The Atlas of the Breeding Birds Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706pp.
- COSEWIC 2007. COSEWIC assessment and update status report on the redbreasted dace *Clinostomus Elongates* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 59 pp. Available at: www.sararegistry.gc.ca/status/status_e.cfm
- COSEWIC. 2008a. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp. Available at: (www.sararegistry.gc.ca/status/status_e.cfm).
- COSEWIC. 2011a. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp. Available at: www.sararegistry.gc.ca/status/status_e.cfm
- COSEWIC. 2011b. COSEWIC assessment and status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp. Available at: www.sararegistry.gc.ca/status/status_e.cfm
- COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp. Available at: www.registrelep-sararegistry.gc.ca/default_e.cfm
- COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
- Dobbyn, John. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, viii + 120pp.
- Endangered Species Act, 2007, S.O. 2007, c. 6
- Fisheries Act, 2014. R.S.C., 1985, c. F-14
- GRCA. 1998. Grand River Conservation Authority. Grand River Fisheries Management Plan.

- GRCA. 2015. Grand River Conservation Authority. An Annotated Checklist of Birds Observed within the Grand River Watershed. Last updated November 13, 2015. Available at: https://www.grandriver.ca/en/outdoor-recreation/resources/Documents/Birding_document/Birding_checklist.pdf
- GRCA. 2016. Grand River Conservation Authority. *Grand River Information Network*. Available at: <https://maps.grandriver.ca/>
- Grey County. 1997. Grey County Official Plan. Adopted by Grey County Council May 6, 1997. Approved by the OMB 2012. Office Consolidation – June 25, 2013.
- Lee, H.T., W.D. Bakowsky, J.L. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurry. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section. Science Development and Transfer Branch. SCSS Field Guide FG-02
- Lee H.T. 2008. Southern Ontario Ecological Land Classification – Vegetation Type List Ontario Ministry of Natural Resources.
- McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 88 pp.
- MNR. 1993. Ontario Ministry of Natural Resources. Distribution and Status of the Vascular Plants of Southwestern Ontario. Compiled by: M.J. Oldham. Aylmer District Office.
- MNRF. 2000. Ontario Ministry of Natural Resources. *Significant Wildlife Habitat Technical Guide*. October 2000.
- MNRF. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. Science and Information Branch. Inventory, Monitoring and Assessment Section. Technical Report SIB TER IMA TR-01. Ministry of Natural Resources and Forestry. 2009
- MNRF. 2014. Bat and Bat Habitat Surveys of Treed Habitats – MNRF Guelph District, August 2014.
- MNRF. 2015a. Ontario Ministry of Natural Resources. Ontario Species at Risk website. Available at: <http://www.mnr.gov.on.ca/en/Business/Species/index.html>
- MNRF. 2015b. Significant Wildlife Habitat Ecoregion 6E Criteria Guide. Ministry of Natural Resources and Forestry. Regional Operations Division, Peterborough Ontario, January, 2015.
- Mortarello, S., Mike Barry, M., Gann G., Zahina, J., Channon, S., Hilsenbeck, C., Scofield, D., Wilder, G., and Wilhelm, G. 2012. Coefficients of Conservatism Values and the Floristic Quality Index for the Vascular Plants of South Florida. *Southeastern Naturalist*. Volume 11(Monograph 3):1–62.

- NHIC. 2017. Natural Heritage Information Centre. *NHIC online database and mapping*. Ontario Ministry of Natural Resources. Available at: <https://www.ontario.ca/environment-and-energy/natural-heritage-information-centre>
- NRVIS. 2006. Natural Resource Values Information System. Ministry of Natural Resources. Accessed through GRCA Online Mapping. Available at: <http://www.grandriver.ca/index/document.cfm?Sec=17&Sub1=80>
- OMMHA. 2014. Ontario Ministry of Municipal Affairs and Housing. *Ontario Provincial Policy Statement*. April 30, 2014.
- Ontario Nature. 2017a. Ontario *Reptile and Amphibian Atlas*. Available at: http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php
- Ontario Nature. 2017b. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. Available: <http://www.ontarionature.org/atlas>; Accessed April 29, 2015].
- Ontario Partners in Flight. 2008. *Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain, North American Bird Conservation Region 13*. Ontario Ministry of Natural Resources, Bird Studies Canada, Environment Canada. Draft Version 2.0
- OWES. 2013. Ontario Ministry of Natural Resources. *Ontario Wetland Evaluation System: Southern Manual*. 3rd Edition.
- Renfrew, Rosalind, Allan M. Strong, Noah G. Perlut, Stephen G. Martin and Thomas A. Gavin. 2015. Bobolink (*Dolichonyx oryzivorus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Available at: <http://bna.birds.cornell.edu/bna/species/176>
- SARA. 2014. Federal Species at Risk Registry. Government of Canada. Available at http://www.registrelep-sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=110
- Township of Southgate. 2006. The Corporation of the Township of Southgate. Township of Southgate Official Plan. Adopted by council August 10, 2006. Last amended June 10, 2008.
- Waterloo Hydrogeological Inc. 2003. Grey and Bruce County Groundwater Study, Final Report. Prepared for County of Bruce and County of Grey and Ontario Ministry of the Environment, WHI Project # 3020227
- VASCAN. 2016. Database of Vascular Plants of Canada (VASCAN). Université de Montréal Biodiversity Centre. Version 36. Published September 24, 2015.

Personal Communications:

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Garland, Nathan. Acting Policy Planner. Grand River Conservation Authority, E-mail and phone correspondence.

Dodge, Kathy. Management Biologist. Ministry of Natural Resources and Forestry, Midhurst District. Email Correspondence.

Benner, Kim. District Planner. Ministry of Ministry of Natural Resources and Forestry, Midhurst District. Email and Phone Correspondence.

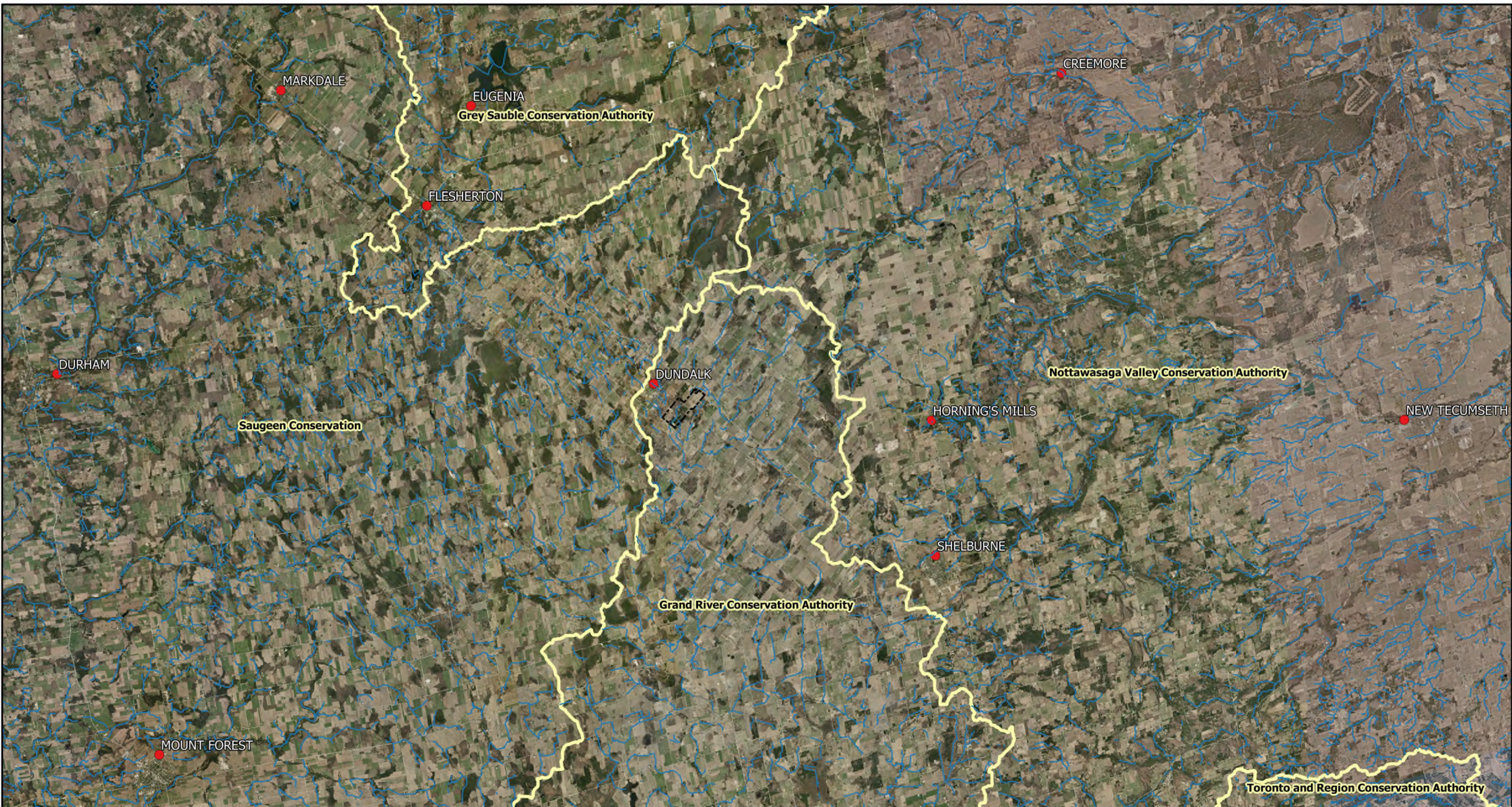
- Urban Forestry
- Ecological Restoration
- Landscape Architecture
- Environmental Studies
- Expert Opinion

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


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LEGEND

-  STUDY AREA
-  CONSERVATION AUTHORITY BOUNDARY
-  WATERCOURSES

- Information Sources:
1. Conservation Authority Boundary: Provided by Land Information Ontario (LIO). Accessed 2015.
 2. Watercourses: Provided by Land Information Ontario (LIO) Accessed 2015.
 3. Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
 4. Town Locations and Names: Based on Google Maps Accessed 2016.
 5. Ortho Image: Ontario 2010. First Base Solutions Web Mapping Service. Accessed 2016.



Title: SITE LOCATION

Project:
**DUNDALK INDUSTRIAL
 ACCESS ROAD & WASTE WATER
 TREATMENT FACILITY EXPANSION
 MUNICIPAL CLASS EA**

Date:	March, 2017
Project:	AA13-140A AA16-031A
Scale:	1 : 200000




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Figure No: **1**



ECOLOGICAL LAND CLASSIFICATION		
Map ID	ELC	Community
1	MEMM3	Dry - Fresh Mixed Meadow Ecosite
3	WODM4-3	Sugar Maple Deciduous Woodland Type
18	SWDM2-2	Green Ash Mineral Deciduous Swamp Type
19	SWDM4-5	Poplar Mineral Deciduous Swamp Type
15	SWMM3	Birch - Poplar Mineral Mixed Swamp Ecosite
2	MEMM4	Fresh - Moist Mixed Meadow Ecosite
21	SWTM3	Willow Mineral Deciduous Thicket Swamp Ecosite
4	WODM5-1	Fresh - Moist Poplar Deciduous Woodland Type
23	MAMM1-3	Reed-canary Grass Graminoid Mineral Meadow Marsh Type
22	MAMM1-16	Mixed Graminoid Mineral Meadow Marsh Type
20	SWTM2-1	Red-osier Dogwood Deciduous Thicket Swamp
25	MASM1-5	Broad-leaved Sedge Mineral Shallow Marsh Type
11	FODM6-1	Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type
9	FOMM8	Fresh - Moist Poplar - White Birch Mixed Forest Ecosite
16	SWMM4-2	Black Ash - Conifer Mineral Mixed Swamp Type
5	FOCM6-1	Dry-fresh White Pine Naturalized Coniferous Plantation
12	OAGM1	Annual Row Crop
6	FOCM6-4*	Dry - Fresh White Spruce Naturalized Coniferous Plantation
24	MASM1-1	Cattail Mineral Shallow Marsh Type
14	SWMM1-1	White Cedar - Hardwood Mineral Mixed Swamp Type
7	FOMM5-2	Dry- Fresh Poplar Mixed Forest
27	SAF_1-3	Duckweed Floating-leaved shallow Aquatic
26	MASO1-1	Cattail Organic Shallow Marsh
31	Development	Development
28	Road	Road
30	Lagoon	Lagoon
29	Residence	Residence
17	SWMM5-1	Balsam Fir - Hardwood Mineral Mixed Swamp Type
10	FODM5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type
13	OAGM2	Perennial Cover Crop
8	FOMM7-2	Fresh - Moist White Cedar - Hardwood Mixed Forest Type

LEGEND

	STUDY AREA
	ECOLOGICAL LAND CLASSIFICATION
	WATERCOURSE (Foley Drain)
	EXISTING DEVELOPMENT

Information Sources:
 1. Ecological Land Classification Evaluations by Aboud & Associates Inc. Surveyed 2015. Based on Stantec ELC Survey 2013
 2. Watercourse mapped by Aboud & Associates Inc. Mapped 2015.
 3. Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
 4. Ortho Image: First Base Solutions, 2010, Grey County Web Mapping Service. Accessed 2015.



Title: **ECOLOGICAL LAND CLASSIFICATION**

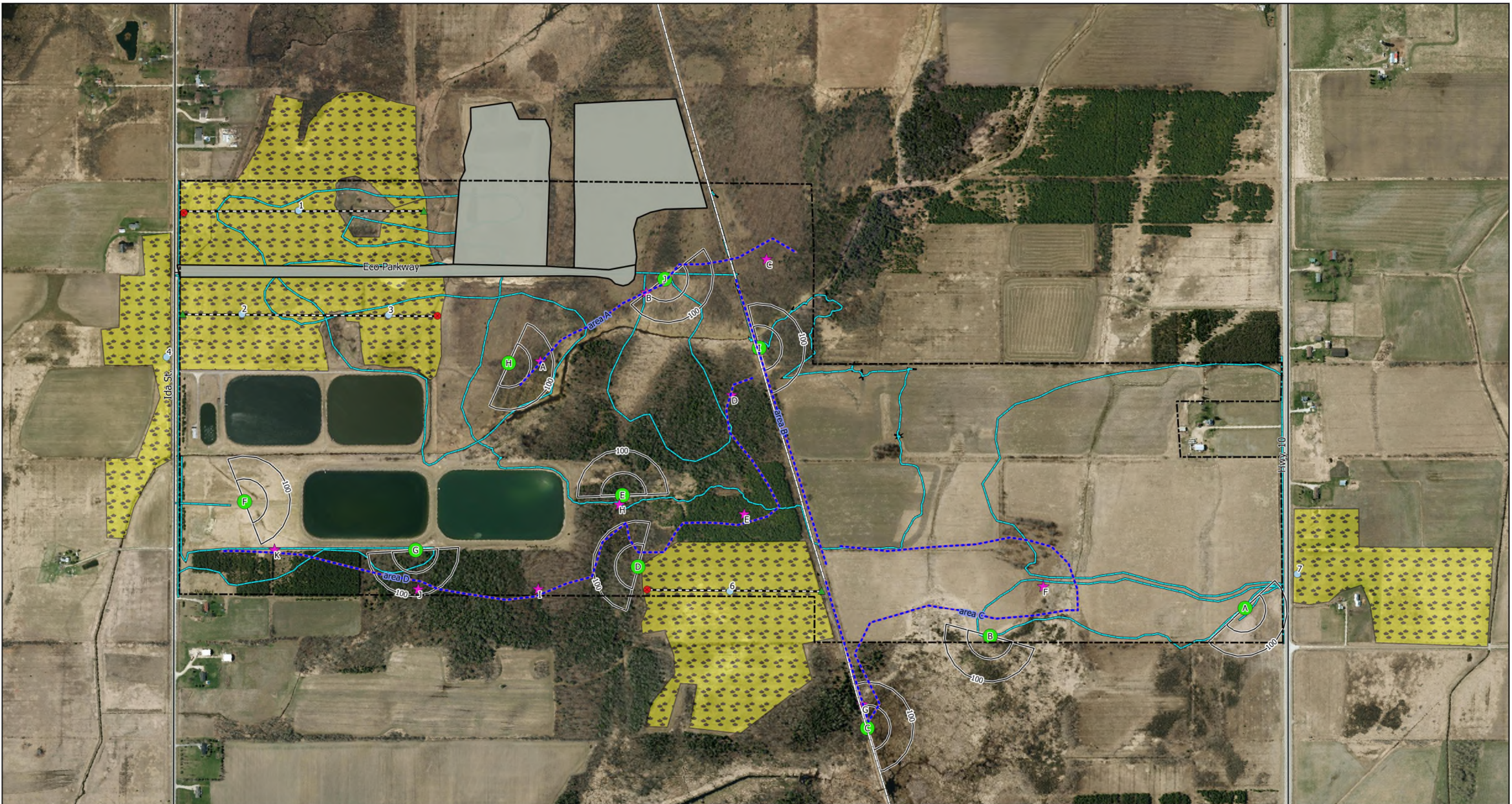
Project: **DUNDALK INDUSTRIAL ACCESS ROAD & WASTE WATER TREATMENT FACILITY EXPANSION MUNICIPAL CLASS EA**

Date: March, 2017
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 AA16-031A
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Figure No: **2**



LEGEND

- STUDY AREA
- EXISTING DEVELOPMENT
- AMPHIBIAN SURVEY (A-J)
- BREEDING BIRD (A-K)
- WINTER WILDLIFE SURVEY
- CANDIDATE GRASSLAND BIRD HABITAT
- GRASSLAND BIRD SURVEY
Transect Start
- Transect End
- Point Count (1-4, 6-7)
- GRASSLAND BIRD SURVEY TRANSECT
- BREEDING BIRD AREA SEARCH TRANSECTS

Information Sources:
 1. Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
 2. Amphibian survey locations: Provided by Stantec Consulting Ltd. 2013.
 3. Ortho Image: First Base Solutions WMTS, 2010, Grey County Accessed 2016.



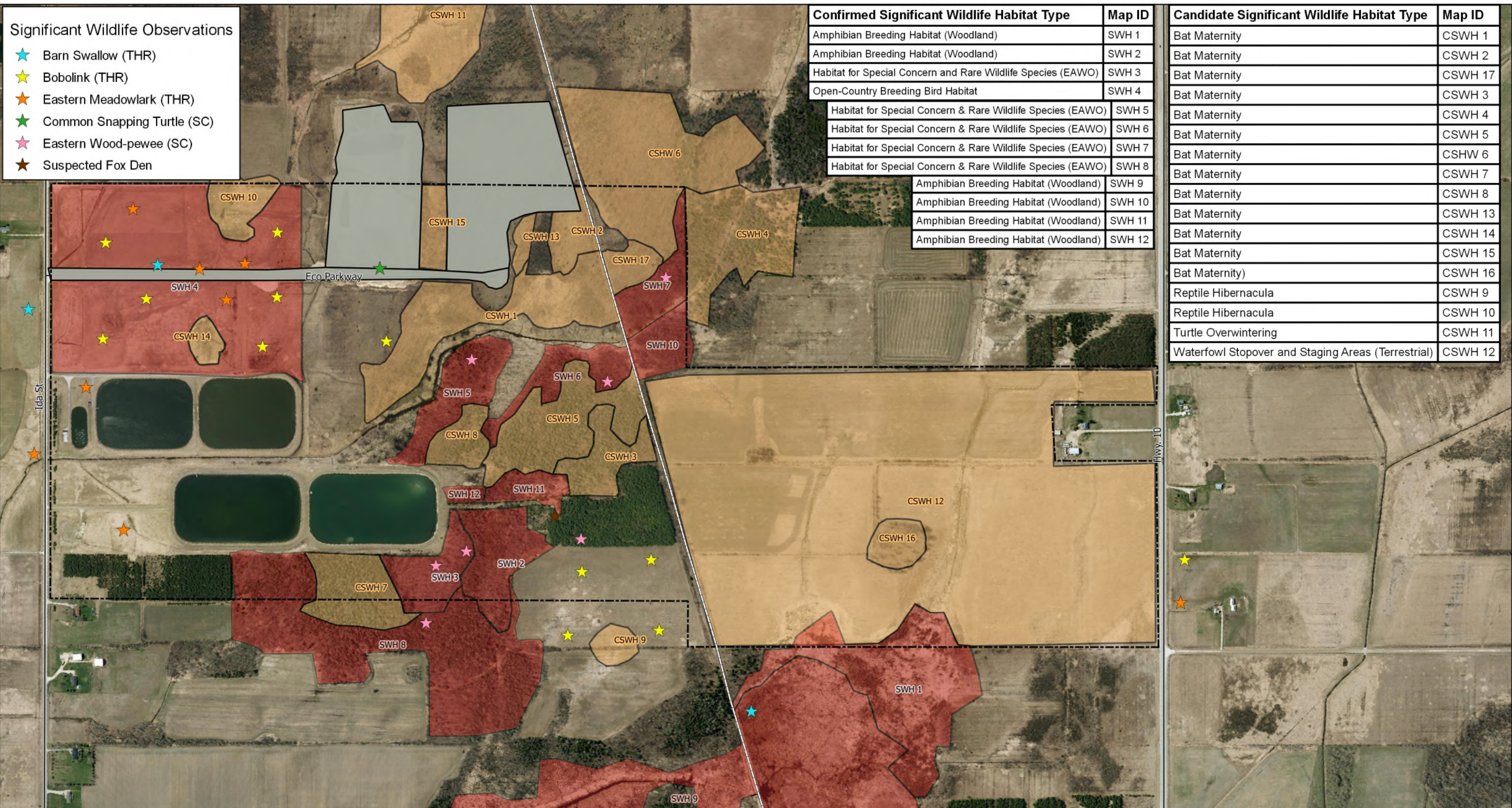
Title:
WILDLIFE HABITAT TARGETS & SURVEY LOCATIONS
 Project:
 DUNDALK INDUSTRIAL ACCESS ROAD & WASTE WATER TREATMENT FACILITY EXPANSION MUNICIPAL CLASS EA

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Figure No: **3**



- Significant Wildlife Observations**
- ★ Barn Swallow (THR)
 - ★ Bobolink (THR)
 - ★ Eastern Meadowlark (THR)
 - ★ Common Snapping Turtle (SC)
 - ★ Eastern Wood-pewee (SC)
 - ★ Suspected Fox Den

Confirmed Significant Wildlife Habitat Type	Map ID
Amphibian Breeding Habitat (Woodland)	SWH 1
Amphibian Breeding Habitat (Woodland)	SWH 2
Habitat for Special Concern and Rare Wildlife Species (EAWO)	SWH 3
Open-Country Breeding Bird Habitat	SWH 4
Habitat for Special Concern & Rare Wildlife Species (EAWO)	SWH 5
Habitat for Special Concern & Rare Wildlife Species (EAWO)	SWH 6
Habitat for Special Concern & Rare Wildlife Species (EAWO)	SWH 7
Habitat for Special Concern & Rare Wildlife Species (EAWO)	SWH 8
Amphibian Breeding Habitat (Woodland)	SWH 9
Amphibian Breeding Habitat (Woodland)	SWH 10
Amphibian Breeding Habitat (Woodland)	SWH 11
Amphibian Breeding Habitat (Woodland)	SWH 12

Candidate Significant Wildlife Habitat Type	Map ID
Bat Maternity	CSWH 1
Bat Maternity	CSWH 2
Bat Maternity	CSWH 17
Bat Maternity	CSWH 3
Bat Maternity	CSWH 4
Bat Maternity	CSWH 5
Bat Maternity	CSHW 6
Bat Maternity	CSWH 7
Bat Maternity	CSWH 8
Bat Maternity	CSWH 13
Bat Maternity	CSWH 14
Bat Maternity	CSWH 15
Bat Maternity	CSWH 16
Reptile Hibernacula	CSWH 9
Reptile Hibernacula	CSWH 10
Turtle Overwintering	CSWH 11
Waterfowl Stopover and Staging Areas (Terrestrial)	CSWH 12

- LEGEND**
- STUDY AREA
 - CONFIRMED SIGNIFICANT WILDLIFE HABITAT
 - CANDIDATE SIGNIFICANT WILDLIFE HABITAT
 - EXISTING DEVELOPMENT

Information Sources:

- Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
- Ortho Image: First Base Solutions WMTS, 2010, Grey County Accessed 2016.
- Significant Wildlife Habitat delineated by Aboud & Associates, 2016.



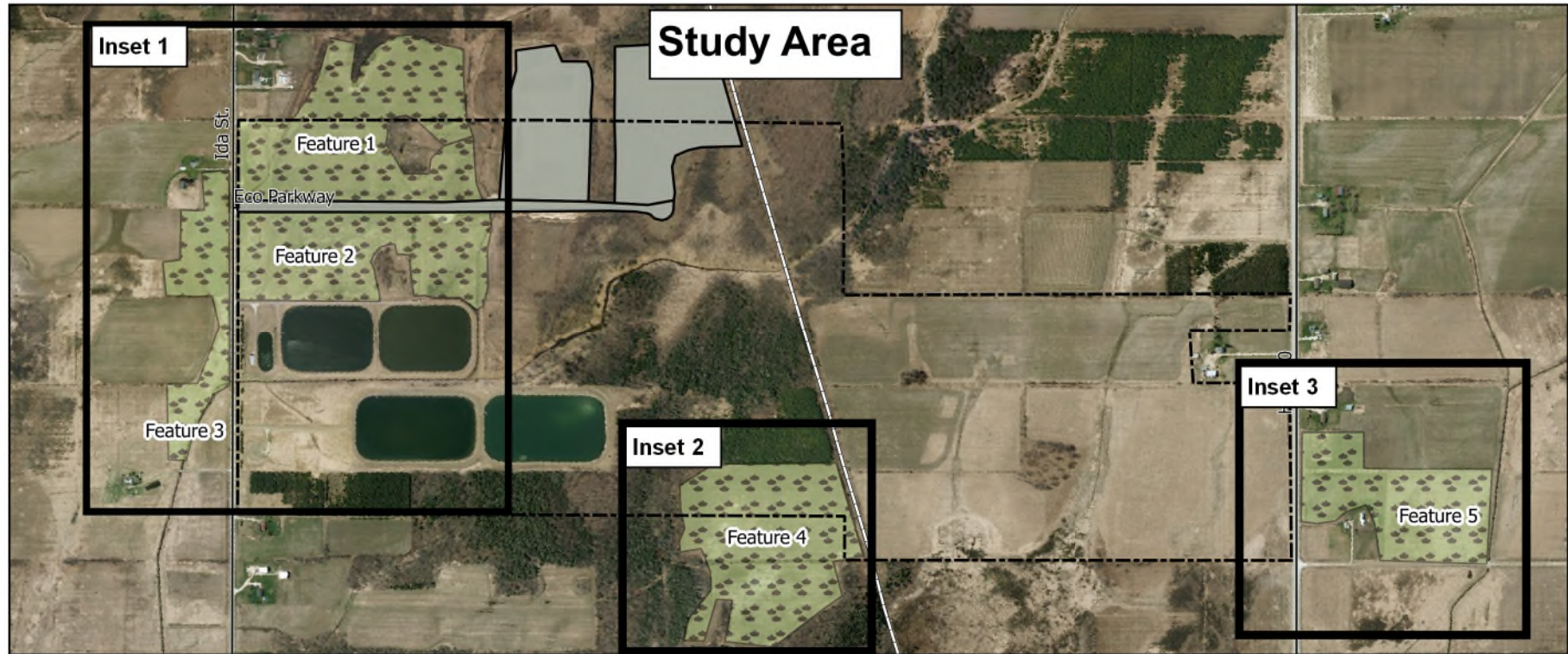
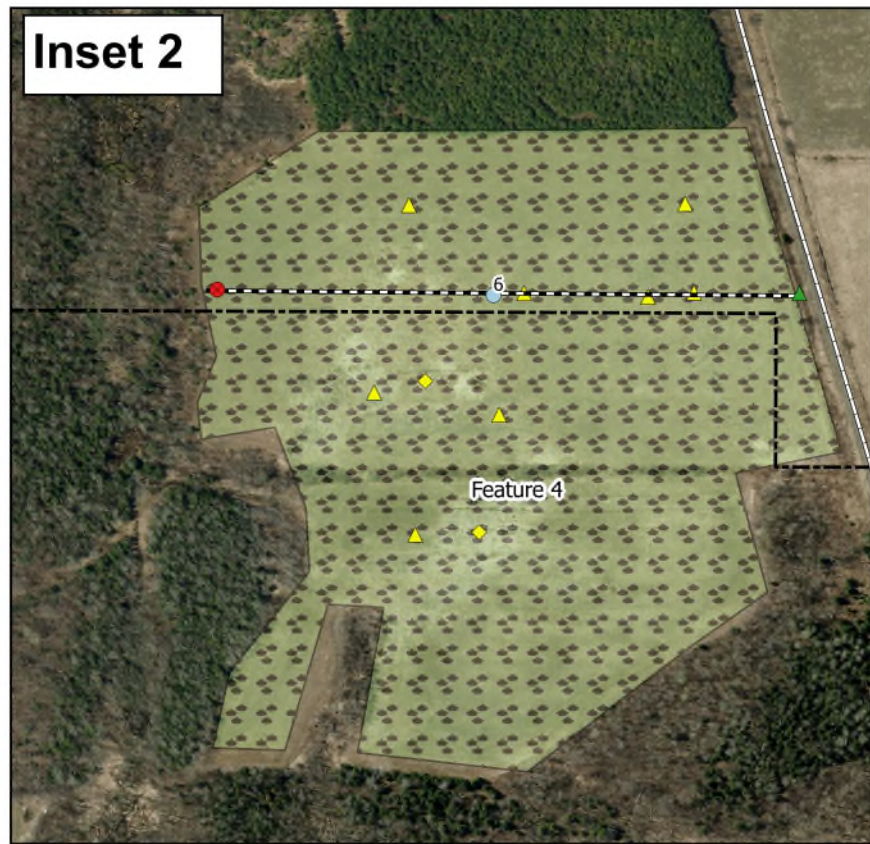
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Project: DUNDALK INDUSTRIAL ACCESS ROAD & WASTE WATER TREATMENT FACILITY EXPANSION MUNICIPAL CLASS EA

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 Project: AA13-140A
 Scale: 1 : 8000



Figure No: 4



LEGEND

- Study Area
- EXISTING DEVELOPMENT
- GRASSLAND FEATURE

- TRANSECT**
- Point Count (1-4, 6-7)
 - Transect Start
 - Transect End

- BOBOLINK**
- Female
 - Male
- EASTERN MEADOWLARK**
- Female
 - Male

Information Sources:
 1. Roads: Provided by Land Information Ontario (LIO) accessed 2015.
 2. Ortho Image: First Base Solution, WMTS, Grey County, 2010. Accessed, 2016.



Title: GRASSLAND BREEDING BIRD SPECIES AT RISK
 Project: DUNDALK INDUSTRIAL ACCESS ROAD & WASTE WATER TREATMENT FACILITY EXPANSION MUNICIPAL CLASS EA

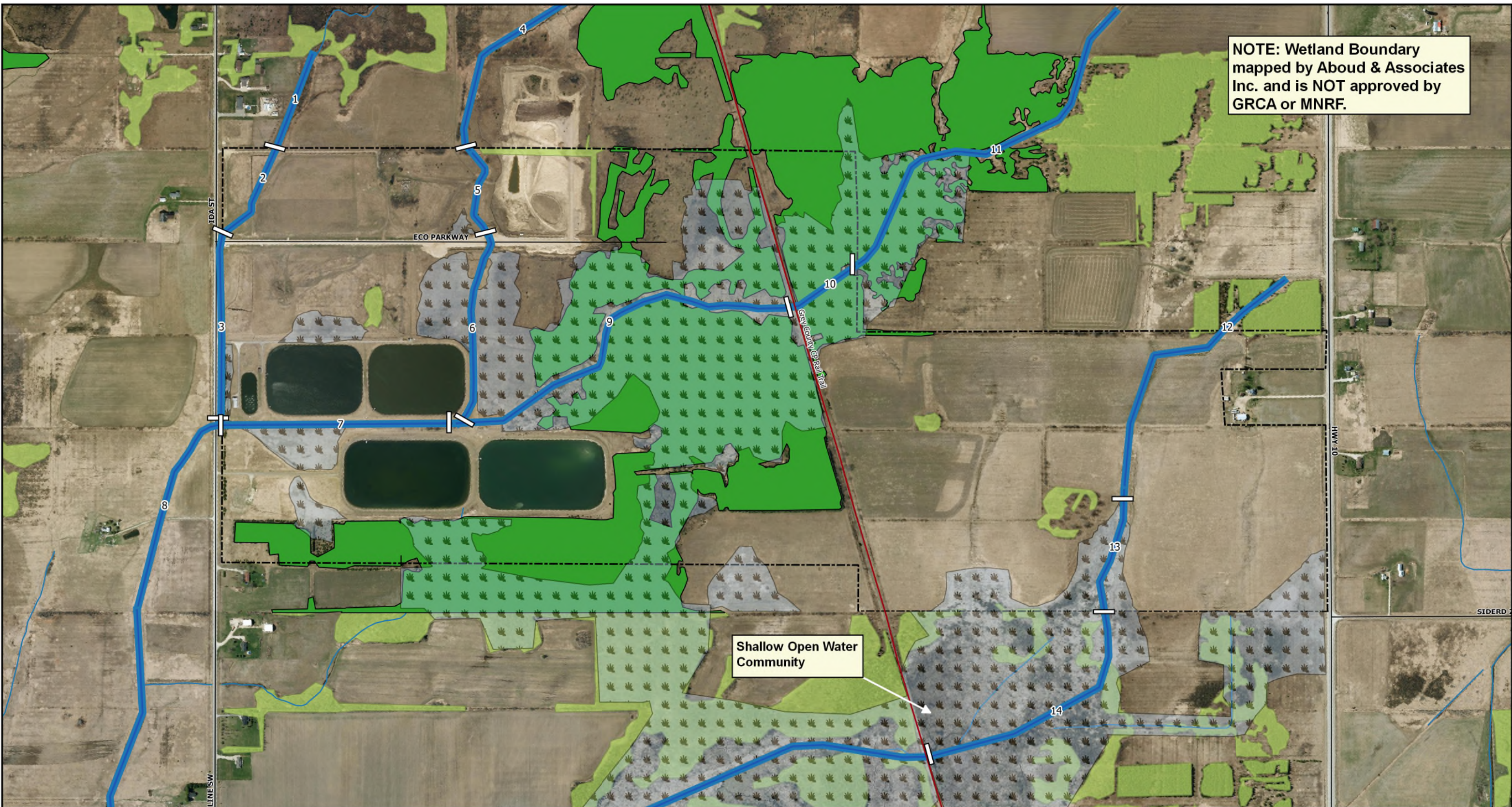
Date: February, 2016
 Project: AA13-140A
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 Scale: 1 : 15000
 1 : 5000 (insets)



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Figure No: **5**

NOTE: Wetland Boundary mapped by Aboud & Associates Inc. and is NOT approved by GRCA or MNR.



LEGEND

- STUDY AREA
- GREY COUNTY SIGNIFICANT WOODLAND
- WOODLANDS
- GREY COUNTY CP RAIL TRAIL
- EXISTING DEVELOPMENT
- WATERCOURSE
- PSW WETLAND BOUNDARY (AA)
- AQUATIC HABITAT SEGMENTS

- Information Sources:
1. Provincially Significant Wetland Delineated by Aboud & Associates Inc. Surveyed 2015.
 2. Aquatic Habitat Assessment. Aboud & Associates Inc. Surveyed 2015. Accessed 2015.
 3. Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
 4. Woodlands: Provided by Land Information Ontario (LIO). Accessed 2015.
 5. Significant Woodlands: Provided by Grey County Accessed 2015.
 6. Ortho Image: First Base Solution, Grey County 2010 Web Mapping Service. Accessed 2015.



Title:
SIGNIFICANT FEATURES

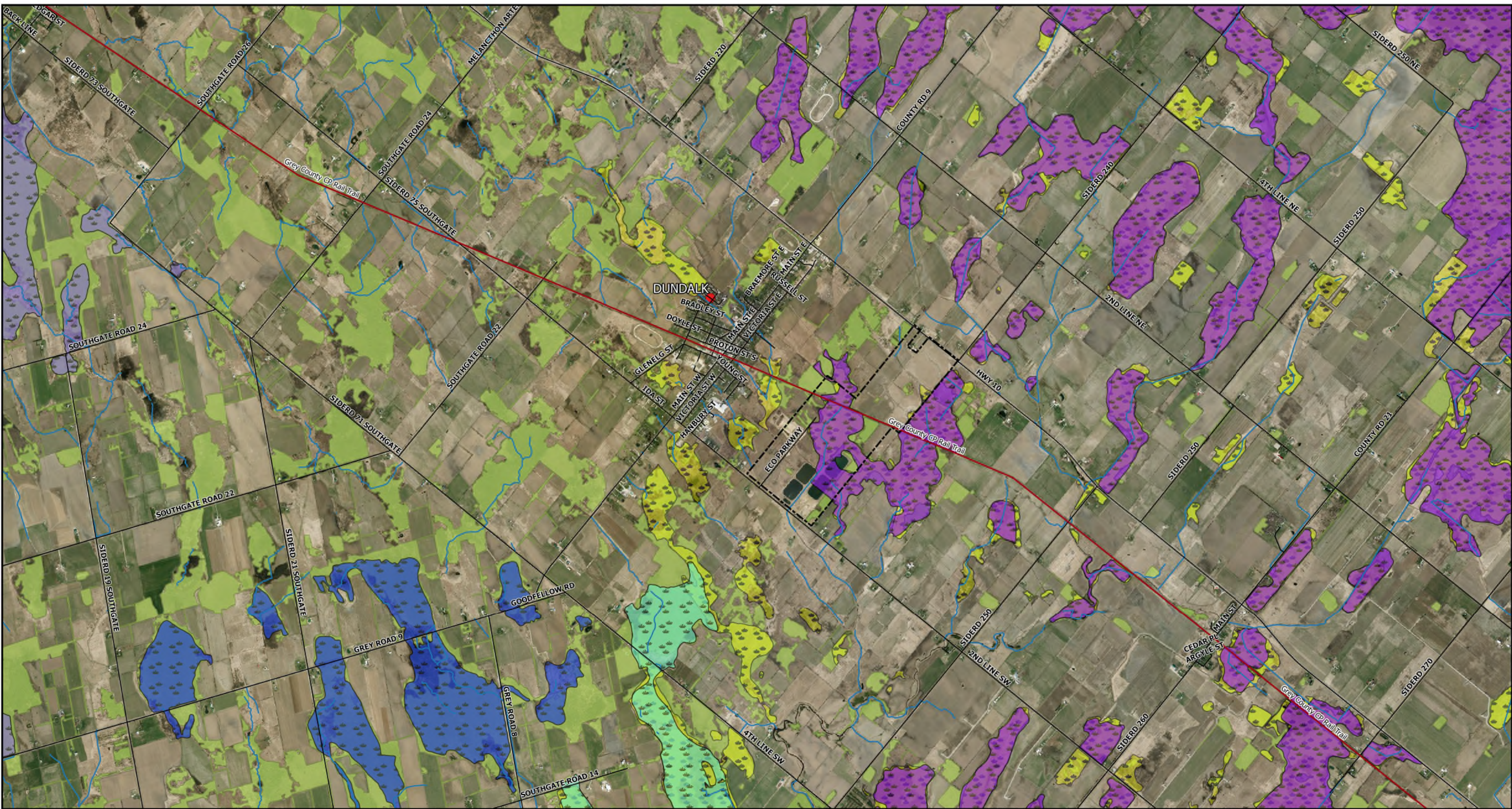
Project:
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Date: March, 2017
 Project: AA13-140A
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Figure No: **6**



LEGEND

- STUDY AREA
- WOODLANDS
- WATERCOURSES
- GREY COUNTY CP RAIL TRAIL

PSW WETLANDS

- Melancthon Wetland Complex #1 (MN1)
- Proton Station
- Riverview Swamp
- Ventry Swamp
- unevaluated wetlands

Information Sources:
 1. Wetland Boundary: Provided by Land Information Ontario (LIO). Accessed 2015.
 2. Watercourses: Provided by Land Information Ontario (LIO) Accessed 2015.
 3. Roads: Provided by Land Information Ontario (LIO). Accessed 2015.
 4. Ortho Image: First Base Solutions, 2010 Web Mapping Service. Accessed 2016.



Title:
LANDSCAPE EVALUATION

Project:
DUNDALK INDUSTRIAL ACCESS ROAD & WASTE WATER TREATMENT FACILITY EXPANSION MUNICIPAL CLASS EA

Date: March, 2017
 Project: AA13-140A
 AA16-031A
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Figure No: **7**

**Appendix 1
Communications**

Ryan Hamelin

From: Steven Aboud
Sent: June-19-14 2:36 PM
To: Nathan Garland
Subject: Dundalk Industrial Lands EIS (AA13-140A)
Attachments: Dundalk Designated Natural Features (Fig 2, Stantec EIS) 2013.pdf

Hi Nathan,

We are working on the process of an EIS for a new road south of Dundalk. An EIS (more of existing conditions assessment) was prepared by another firm which from what I gather may not have been submitted to agencies including GRCA. From that study and others a recommendation was prepared for a preferred road option – shown on the attached. Robert M. advised me yesterday that this is part of your subwatershed.

I am at the beginning stages to gather all requirements (Grey County, MNR, GRCA, Town of Southgate) necessary to prepare such study. I suspect that GRCA will play the biggest role here (as well as act as the agency reviewer for the County?, others?).

I've given you a small introduction to this project and would like to follow through with a call to discuss further the process to date and with the intention of getting direction on the requirements to move to a detailed EIS. Please let me know when it is convenient to call.

Steven

Steven Aboud, B.S.c. . Principal . Senior Ecologist
ISA Certified Arborist ON-0323A . ISA Tree Risk Assessment Qualified
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T:519.822.6839 x1 . F:519.822.4052 www.aboudtng.com . steven@aboudtng.com

Ryan Hamelin

From: Steven Aboud
Sent: June-19-14 2:19 PM
To: Dodge, Kathy (MNR)
Subject: RE: Dundalk Industrial Lands (AA13-140A)

Thanks Kathy,

Yes there are 2 more sewage lagoons than shows on the NHIC LIO mapping.

I will be speaking to Nathan Garland, the GRCA resource planner for this area of their watershed for advisement, too.
Steven

Steven Aboud, B.S.c. . Principal . Senior Ecologist
ISA Certified Arborist ON-0323A . ISA Tree Risk Assessment Qualified
ABOUD & ASSOCIATES INC. 591 Woolwich Street . Guelph . Ontario . N1H 3Y5
T:519.822.6839 x1 . F:519.822.4052 www.aboudtng.com . steven@aboudtng.com

From: Dodge, Kathy (MNR) [<mailto:kathy.dodge@ontario.ca>]
Sent: June-19-14 1:59 PM
To: Steven Aboud
Cc: Benner, Kim (MNR)
Subject: RE: Dundalk Industrial Lands (AA13-140A)

I just pulled our mapping of the PSW, and obviously the sewage lagoons (at least 2 of them) were added after we did the evaluation and PSW mapping. So a portion of the mapped PSW will likely be removed. From a natural heritage features component, it would appear that alternative 2 might have fewer features which could be impacted? Just a quick thought.

Kathy

From: Dodge, Kathy (MNR)
Sent: Thursday, June 19, 2014 1:35 PM
To: 'steven@aboudtng.com'
Cc: Benner, Kim (MNR)
Subject: FW: Dundalk Industrial Lands (AA13-140A)

Hi Steve-

As we discussed, once the wetland boundary has been determined by your consultants, then MNR will meet on site and confirm the boundary as delineated. This delineation can be done by anyone who has been trained in the Ontario Wetland Evaluation System. The GRCA may attend as well, but must be ultimately confirmed by MNR to be accepted as PSW.

I am not sure what permits will be required for this work. I have cc'd our planner, Kim Benner who may be able to better direct you. As a minimum I would suspect that there would be an EIS required by the County to identify any potential impacts and proposed mitigation to the PSW and Significant Woodland on the site. But if I remember, that has been done. So I am unclear other than staking the PSW boundaries what the next steps would be.

Kathy

From: Steven Aboud [<mailto:steven@aboudtng.com>]

Sent: Thursday, June 19, 2014 12:42 PM

To: Dodge, Kathy (MNR)

Subject: Dundalk Industrial Lands (AA13-140A)

Hi Kathy,

I spoke briefly with Robert Messier (GRCA) about wetland delineations for this project. As a point of understanding at my he advised both GRCA as well as MNR would be directly involved in field staking the relevant boundaries of the Melancthon Complex PSW.

The attached sketch highlights the preferred road alternative from 2nd Line to Highway 10. It crosses much of the PSW. I would like your advice on the requirements to proceed with studies, permits, etc. to advance this, e.g. what are the steps? Perhaps you can direct me to the proper literature, etc.

Thank you

Steven

Steven Aboud, B.S.c. . Principal . Senior Ecologist

ISA Certified Arborist ON-0323A . ISA Tree Risk Assessment Qualified

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Ryan Hamelin

From: Steven Aboud
Sent: August-28-14 1:23 PM
To: Ray Kirtz
Cc: Ryan Hamelin
Subject: Dundalk Industrial Lands

Hi Ray,

We had a 90 minute conference call with Nathan Garland this am. He is adamant that an EA is needed rather than only a permit to put in the road. The former he would not approve and the latter would go to the GRCA board for review and decision.

Tony Zammit and Nathan have briefly looked through the Golder and Stantec reports. Nathan will be forwarding an email to you, Dave Milner and ourselves regarding our conversation and general guidance on moving ahead.

Ryan and I will be meeting (9-10:30) at your office tomorrow morning with Paul et al about the Station Street Dam. After that meeting we could touch base with you (Dale?) about Dundalk – your call.

Steven

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Ryan Hamelin

From: Nathan Garland <ngarland@grandriver.ca>
Sent: August-29-14 3:06 PM
To: Dale Murray (dmurray@tritoneng.on.ca); 'dmilliner@town.southgate.on.ca'; Steven Aboud
Cc: jellis@southgate.ca; Kopp,Doug (DKopp@southgate.ca)
Subject: Southgate Bypass - Follow up Discussion

Hello All,

Thank-you to all parties in discussion with our office and bring myself to bring us up to speed on the proposed project. This is a follow up to the conversation we've had regarding the proposed Dundalk Bypass Road. I have attached GRCA Mapping to this email, along with some of our preliminary discussion comments. It is our understanding that the proposed project will be initiated through a Municipal Class EA process. GRCA will review and comment on the EA once formal notice has been provided. Please find our comments below in relation to the information submitted to date. It is anticipated that an Addendum to the EIS submitted by Stantec will be supplied by Aboud and Associates looking at and considering all options as explored in the Stantec EIS. It is our understanding that options under review are being considered, but that a preferred alternative will be explored through the Municipal Class EA process. I have included a portion of the GRCA policies for reference. At the time a preferred alternative has been evaluated through the EA process a permit will be required from the GRCA, and staff can only support an application which meets the GRCA Policies.

Based on the discussion with Steven and the meeting with Dale, Dave and Jim I am forwarding review comments from the Stantec EIS, which has done a lot of background review and survey work to provide a list of alternatives. The information below is intended to assist in provided an EIS Addendum to capture some missing information as well as provide some guidance to assessing detailed design. Please note, these comments are to be used to assist and reference and not to be used in the sole evaluation of detailed design and mitigation of impacts as it would be our understand that a supplementary EIS (or Environmental Implementation Report (EIR)) document will be provided to assess and mitigate detail design consideration at such time as the EA has moved to detailed design.

General Comments

- Portions of the Melancthon Provincially Significant Wetland Complex #1 are present on the subject lands. Wetland mapping contained in this draft report is not consistent with the GRCA's and OMNR's wetland mapping, and requires verification by the GRCA and MNR.
- Foley Drain is the principal watercourse on the site. This drain was classified as warm water fish habitat by the GRCA in 2000. Local topographic relief has resulted in a low channel gradient, a deeply incised channel bed, and steep banks. Surface water averaged 1.5 m wide and 9 to 10 cm deep. Shallow pools containing patches of watercress and water speedwell, and bank slumping, and areas of aggradation were observed. The reach within the deciduous swamp area varied between 4 to 5 m in width and up to 30 cm in depth. This reach was found to be less incised than upstream portions. Background data confirms the presence of a mixed water community consisting of common and tolerant to moderately intolerant species, including common shiner, blacknose shiner, bluntnose minnow, brown bullhead, brook stickleback, smallmouth bass and rock bass. Flow is considered to be intermittent within the main Foley Drain and its tributaries.

EIS Addendum (supplementary to the Stantec EIS)

Section 3.2.1 – Botanical Surveys and ELC

1. This section suggests that the NHIC database was consulted in 2001. Is this a typographical error? Please confirm that the provincial status of plants has been based in part on the subnational ranks (SRANKs) assigned by the NHIC as of 2013. It is also recommended that the following publication be consulted for additional information on the presence of provincially rare plant species within local municipalities: M.J. Oldham & S.R. Brinker 2009. Rare

Section 3.2.3 Breeding Bird Survey

2. If applicable large concentrations of migratory and over-wintering species should be noted, as this information is necessary to confirm the presence of significant wildlife habitat such as Waterfowl Stopover and Staging Areas, Shorebird Migratory Stopover Areas, Songbird Migratory Stopover Areas, and Raptor Winter Areas.
3. Were stick nests surveyed? Please confirm.

Sections 3.2.4 and 4.6.6 - Winter Wildlife Survey

4. The author notes on page 4.7 that a single survey was undertaken on February 27, and that there was between 20 and 40 cm of snow on the ground. Given the presence of suitable coniferous woodland habitat, did the surveyor assess the presence of Winter Deer Yards and Deer Movement Corridors specifically? Please confirm.

Section 3.2.5 – Anuran Call Count Survey

5. The absence of Mink Frog is somewhat surprising given the presence of 4 large lagoons (constructed wetlands) and nearby meadow marsh habitat. Weather conditions were not appropriate during the first survey conducted on April 19, 2011 (0° C and rain turning to snow). Please provide the survey work completed during the 2014 year.

Section 3.3 – Analysis of Significance and Sensitivity

6. Similar to the comment above, this section suggests that the NHIC database was accessed in 2008. Please confirm that the global and provincial ranks (GRANKs and SRANKs), as well as the federal and provincial status of species at risk is based on current information posted on the MNR's website. It is also important to make a distinction between the status assigned by COSEWIC/COSARRO and the protected status of a species, which is afforded legal protection under provincial Endangered Species Act only. Lastly, we note that the OMNR's Significant Wildlife Habitat Ecoregion 6E Criterion Schedule was employed to determine the significance of amphibian breeding areas. It is expected that the appropriate screening criteria will be applied to all vegetation types and wildlife species identified in this study. Please confirm.

Section 4.6.1 – Landscape Ecology

7. A course scale map depicting the core natural areas both on and off the site and habitat linkages between these areas would be helpful when assessing direct and indirect impacts associated with the route alternatives.

Section 4.6.3 Vascular Plant Species

8. What source was used to identify locally rare species? Please include a reference and citation.

Section 4.6.8 – Wildlife Habitat and Incidental Wildlife Observations

9. The location of the potential snake hibernaculum and potential fox den should be mapped. Additional survey work may be required confirm the presence or absence of candidate significant wildlife habitat features, subject to review by the OMNR.

Section 5.5 – Significant Wildlife Habitat

10. Discussions should be had with the Ministry of Natural Resources with respect to the SWH through the EA process.

Section 6.2 - Route Alternatives Compared

11. The wetlands on the subject property have been mapped by the MNR, GRCA, and most recently by Stantec. Therefore, there are 3 “wetland delineations” to consider when assessing direct impacts. It is requested that Stantec's wetland boundaries be verified in the field by the MNR and the GRCA. The assessment of impacts summarized in Table 6.1 will be considered preliminary until wetland boundaries have been verified in the field by the GRCA.
12. Please use the Full EA methodology when ranking preferred alternatives.

Section 7.0 – Future Development of the Industrial Park Constraints and Opportunities

13. Paragraph 2 indicates that “woodlands and fish habitats may be developed, subject to a no net impact test or compensation.” This statement seems to contradict information on page 7.2 of the report, which generally outlines conditions that must be met to ensure compliance with the Provincial Policy Statement. Section 2.1.4 of the PPS states: “Development and site alteration shall not be permitted in...b) significant woodlands...unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*.” Section 2.1.5 states “Development and site alteration shall not be permitted in fish habitat except in accordance *with provincial and federal requirements*. Consequently, a more detailed assessment of impacts associated with the preferred alternative shall be required during the detailed design stage to ensure that both policies are addressed to the satisfaction of the GRCA and the local municipality. This may wish to be considered as part of an Official Plan Amendment or future zone change applications.

Detailed Design

14. Additional information on fluvial geomorphology, hydrogeology, and slope stability (geotechnical) is required to support mitigation measures and the preferred alternative within this area.
15. The current EIS does not include any recommendations for future study or impact assessment. As noted above, a scoped EIS will be required in order to assess site-specific impacts in greater detail and to recommend site-specific impact avoidance and mitigation measures.
16. Potential impacts on the form and function of regulated wetlands and watercourses, predicted changes in water quality quantity, and recommendations for impact avoidance and mitigation shall be addressed in greater detail and to the satisfaction of the GRCA. Please see comment 14.

Sections 3.2.2 and 4.6.4 – Wetland Delineation

17. Wetland boundaries delineated during this study differ from the GRCA's and MNR's wetland mapping in several areas. According to the author of this report, wetlands were delineated in accordance with the Ontario Wetland Evaluation System (OWES), 3rd Edition (OMNR 2002). Please be advised that the GRCA will employ the more recent OWES, Southern Manual, Version 3.2 (OMNR 2013) when verifying wetland boundaries on this site. Staff request that wetland boundaries be verified during the appropriate season, and preferably during the wet growing season if possible to allow for the detection of hydrophytic vegetation (i.e. wetland indicator species) and hydrologic conditions that support wetland communities. With respect to any significant changes to the PSW boundary, separate approval must be granted by the OMNR, Midhurst District Office.

Should you have any further questions or comments, please feel free to call or email.

Regards,

Nathan Garland

Resource Planner
Grand River Conservation Authority
400 Clyde Road
PO Box 729
Cambridge, ON N1R 5W6

Toll Free: 1-866-900-4722
Phone: 519-621-2763 EXT. 2236
Fax: 519-621-4844

Ryan Hamelin

From: Dodge, Kathy (MNR) <kathy.dodge@ontario.ca>
Sent: October-28-14 8:59 AM
To: Ryan Hamelin
Subject: RE: Significant Wildlife Habitat

Hi Ryan-

I would think that relying on background sources, anecdotal sources should provide you with the information you need. But it is your call and what you are comfortable with to provide you with sufficient information to make an informed decision. Lack of information may require some survey work.

Kathy

From: Ryan Hamelin [<mailto:ryan@aboudtng.com>]
Sent: Monday, October 27, 2014 11:13 AM
To: Dodge, Kathy (MNR)
Subject: RE: Significant Wildlife Habitat

Hi Kathy,

The material you sent helped a lot with understanding the SWH criteria and evaluation. One questions I still have is regarding the actual field survey and assessment of habitat to determine SWH status. For something like Waterfowl stopover and staging areas the criteria requires annual staging of 100 or more waterfowl for 7 days. To collect this data would we need to conduct up to seven surveys, or could we rely on background sources, extrapolation and more anecdotal sources such as ebird website?

Thanks,

Ryan Hamelin

Ryan Hamelin, B.S.c (Env). M.Sc. Terrestrial and Wetland Ecologist
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From: Dodge, Kathy (MNR) [<mailto:kathy.dodge@ontario.ca>]
Sent: October-21-14 3:44 PM
To: Ryan Hamelin
Subject: RE: Significant Wildlife Habitat

Hi Ryan

Attached is the SWH Ecoregion 6E Criterion Schedule. This is currently in draft, but we have been using them for assessing potential Significant Wildlife Habitat. In conjunction with this document, the Significant Wildlife Habitat Technical Guides can also help in supporting your decisions re habitat studies etc.

Have a look at these and it should help with your questions. If not, let me know.

Kathy

From: Ryan Hamelin [<mailto:ryan@aboudtng.com>]
Sent: Friday, October 17, 2014 12:13 PM
To: Dodge, Kathy (MNR)
Cc: Matthew Iles
Subject: Significant Wildlife Habitat

Hello Kathy,

I hope this e-mail finds you well.

We are in the process of developing a draft work plan and Terms of Reference for the proposed road by-pass in the Town of South Gate. We received some comments and direction from yourself regarding the project back in June of this year.

While we are still in the process of putting together a proposed work plan, we also want to make sure that we don't miss any timing windows for potential field studies. The appropriate timing for conducting waterfowl stopover and staging area surveys is approaching and we would like your advice on the need to conduct this survey in order to confirm the absence or presence of Significant Wildlife Habitat. The main features on site that are used for waterfowl staging are four constructed lagoons with a total area of approximately 12 hectares. Can this type of constructed features be a candidate for SWH, and should they be evaluated as part of an EIS ?

Other Significant Wildlife Habitat that may need to be assessed for are Songbird Migratory Stopover Areas and Raptor Wintering Areas. Would MNRF require surveys for these habitats as well ?

Also, could you advise us on criteria for evaluating SWH? Is there a threshold regarding the number of individuals or species that need to be present before its classified as SWH?

Please let me know if you have any questions or require any additional information.

Thanks,
Ryan Hamelin

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Ryan Hamelin

From: Dodge, Kathy (MNRF) <kathy.dodge@ontario.ca>
Sent: January-07-15 4:22 PM
To: Ryan Hamelin; Benner, Kim (MNRF)
Cc: Howard Wray; Steven Aboud
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Hi Ryan-

As we discussed before- MNRF is responsible for PSW's and we must make the final decision with respect to any boundary changes to the PSW. Once the boundary has been delineated and staked, we will be more than willing to meet you on site and have a look at the proposed boundary. Once we are in agreement, this will need to be GPS'd and we can then make the necessary changes to our wetland mapping.

Hope that clears things up for you.

Kathy

From: Ryan Hamelin [mailto:ryan@aboudtng.com]
Sent: Wednesday, January 07, 2015 4:14 PM
To: Benner, Kim (MNRF)
Cc: Howard Wray; Steven Aboud; Dodge, Kathy (MNRF)
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Hi Kim,

Thanks for taking the time to discuss the Dundalk Municipal Class EA with me this afternoon. I wanted to follow up with a quick e-mail to document the conversation. If I miss anything or if there are any errors please feel free to let me know.

Also, I wanted to give you a little more background on the PSW that is on site. The Melanchthon Wetland was evaluated in 2000, but the boundaries are outdated and visibly inaccurate in sections. We are planning on internally re-delineating the boundaries for the EA analysis of the preferred options. Once a preferred option has been identified the wetland will be staked within 120m of the preferred option for approval by MNRF and GRCA. In earlier communications, Kathy Dodge had indicated that the MNRF would need to be involved in approving any changes to PSW boundaries. Could you please comment on if this approach to dealing with an outdated wetland boundary would be satisfactory to the MNRF ?

Conversation: Jan 7, 2014

Kim Benner (MNRF) and Ryan Hamelin (Aboud & Associates)

Project History:

- The project proponent is the Township of Southgate, the lead consultant is Triton Engineering, and Aboud & Associates are completing the Natural Heritage component of the Municipal Class EA.
- There has been an EIS already completed for the subject property. The EIS was initially started in 2001 with the majority of the field work completed in 2011.
- There have been documented past communication between MNRF and Stantec on the project (2002 and 2010). If these communications are still available could they be forwarded?

MNRF roll in Municipal Class EA's

- MNRF will provide data and resources on Species at Risk and Provincially Significant natural heritage features as requested.
- MNRF may review and comment on a Terms of Reference (ToR), but will not approve a ToR or provide a list of studies to be completed.
- Development of a ToR should be completed by the consultant.
- MNRF has received the previously completed EIS (Stantec) and will not be providing further comments on the report or additional work required for the Municipal Class EA.

Next Steps

- MNRF will be informed of the commencement of the EA through the official Notice of Commencement.
- MNRF will receive a copy of the ToR and may review and comment at their own discretion.

Thanks again Kim for taking the time to talk about the project, it was helpful for clarifying MNRF expectations regarding Municipal Class EA's

Ryan Hamelin

Ryan Hamelin, B.S.c (Env). M.Sc. Terrestrial and Wetland Ecologist
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From: Benner, Kim (MNRF) [<mailto:kim.benner@ontario.ca>]
Sent: January-07-15 11:45 AM
To: Ryan Hamelin
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Hi Ryan,

Please give me a call and we can discuss the project.

Thanks!

Kim

Kim Benner
District Planner
Midhurst District
Ministry of Natural Resources and Forestry
Telephone: 705.725.7534

Email: kim.benner@ontario.ca

From: Ryan Hamelin [<mailto:ryan@aboudtng.com>]
Sent: January 7, 2015 11:23 AM
To: Benner, Kim (MNRF)
Cc: Howard Wray
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Scoped EIS attachment for subject lands.

Ryan Hamelin

From: Ryan Hamelin
Sent: January-07-15 11:21 AM
To: 'Benner, Kim (MNRF)'
Cc: 'Howard Wray'
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Hi Kim Benner,

We are in the process of developing a work plan and proposed Terms of Reference (ToR) for the natural heritage component of a Municipal Class EA, in the Township of Southgate. The project is still in the early stages and doesn't yet have a Problem Statement or Notice of Study Commencement. Nonetheless, we are trying to identify the natural heritage studies that will need to be completed. We have had some preliminary discussions with the GRCA on the project, but would also like to have a conversation with the MNRF before the project gets started.

I have attached a map showing the subject property, just outside the community of Dundalk. There was a fairly detailed EIS completed for the project a few years back that I will send as a separate attachment due to the combined file size.

Please let me know if there is a time that I could call to discuss the project start up. At this point we are just trying to identify the MNRF's requirements for Municipal Class EA's and preferred methods and timelines of communication.

Thanks,

Ryan Hamelin
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From: Dodge, Kathy (MNRF) [<mailto:kathy.dodge@ontario.ca>]
Sent: January-07-15 10:20 AM
To: Ryan Hamelin
Cc: Benner, Kim (MNRF)
Subject: RE: Dundalk Industrial Lands - Municipal Class EA

Hi Ryan-

I would suggest contacting our District Planner, Kim Benner in our Midhurst office. She has a better understanding of the Municipal Class EA process than I do. She can be reached at 705-725- 7534 or via email at kim.benner@ontario.ca

Thanks,

Kathy

From: Ryan Hamelin [<mailto:ryan@aboudtng.com>]
Sent: Tuesday, January 06, 2015 4:35 PM
To: Dodge, Kathy (MNRF)
Subject: Dundalk Industrial Lands - Municipal Class EA

Hello Kathy,

I hope you are doing well.

We are in the process of developing a work plan and proposed Terms of Reference (ToR) for the natural heritage component of a Municipal Class EA, for the Dundalk Industrial Lands Access Road Project, in the Township of Southgate. The project is still in the early stages and doesn't yet have a Problem Statement or Notice of Study Commencement. Nonetheless, we are trying to identify the natural heritage studies that will need to be completed. We have had some preliminary discussions with the GRCA on the project, but would also like to have a conversation with the MNRF before the project gets started. Would you have some time in the coming week to discuss MNRF requirements and priorities of the Municipal Class EA.

Please let me know if there is a time that I could call to discuss the project start up. At this point we are just trying to understand the MNRF's requirements for Municipal Class EA's and preferred methods and timelines of communication.

Thanks,

Ryan Hamelin

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Ryan Hamelin

From: Ryan Hamelin
Sent: March-13-15 3:30 PM
To: Nathan Garland
Subject: RE: Southgate Bypass - Terms of Reference

Hi Nathan,

This is a follow up e-mail to document our earlier phone conversation regarding point #2 in the Dundalk Industrial Access Road ToR Comments, provided on March 6th, 2015.

In regards to studying Species at Risk within the study area our approach will be to assess and identify specialized or potentially suitable habitat for SAR known to occur in the area (MNR Owen Sound District List and MNR website). Habitat potentially suitable for SAR will be documented and mapped. A larger landscape context analysis will look at potential SAR habitat on adjacent properties and possible ecological linkages. Additionally, incidental wildlife observation will be recorded during all field surveys (approximated field 14 days). The SAR habitat assessment will inform the development of appropriate mitigation measures for SAR.

We will continue to communicate with MNR Owen Sound District regarding what species to include in the SAR habitat assessment.

Thank you for your feedback,

Sincerely,
Ryan Hamelin

Ryan Hamelin, B.S.c (Env). M.Sc. Terrestrial and Wetland Ecologist
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T:519.822.6839 x 2 . F:519.822.4052 www.aboudtng.com . ryan@aboudtng.com

From: Nathan Garland [mailto:ngarland@grandriver.ca]
Sent: March-06-15 4:06 PM
To: Ryan Hamelin
Cc: Howard Wray
Subject: RE: Southgate Bypass - Terms of Reference

Hello Ryan,

I'm sorry this has taken so long to get back to you.

The terms of reference are fine, I've attached some comments. The previous EIS submitted by Stantec was OK as well, and the comments are meant as supplemental information in both supporting the Stantec EIS and also when considering detailed design.

If there are any follow up comments or clarification let me know.

Regards,



March 6th, 2015

Ryan Hamelin, Terrestrial and Wetland Ecologist
About and Associates Inc.
591 Woolwich Street
Guelph, ON N1H 3Y5

Dear Mr. Hamelin:

Re: Dundalk Industrial Access Road, Terms of Reference for Existing Conditions Report as part of the Municipal Class Environmental Assessment (EA)

We have now had an opportunity to review the Terms of Reference for the Township of Southgate proposed EA in evaluating road locations. We find the Terms of Reference satisfactory subject to inclusion of the following comments. Additional comments have been provided should the EA process select a preferred alternative for one of the road options.

Terms of Reference

1. The terms of reference indicate that a “single season ELC community validation survey” will be conducted in the field but no dates are provided. Similarly, a “single season botanical survey” is proposed but no dates are provided. Surveys should be completed during appropriate seasons.
2. The terms of reference suggest that the wetland evaluation file will be reviewed “to determine the presence of potentially significant features”. This background review should be supplemented with empirical data collected through field observation. For example, the NHIC database indicates that snapping turtle (special concern in Ontario) are potentially present within the vicinity of the study area. The MNRF also identifies Eastern Ribbonsnake as being potentially present within suitable habitat in Grey County. Therefore depending on site features and habitat targeted searches and appropriate mitigation measures for these species may be warranted.
3. The presence of breeding waterfowl and shorebirds could trigger the need for construction timing windows and related mitigation measures to ensure compliance with provincial and federal legislation. Should vegetation removal within the work corridor not be able to occur outside the May 1st – July 31st timing window. It is recommended that a minimum of 2 breeding bird surveys be conducted between May 15th and July 31st in accordance with Ontario Breeding Bird Atlas protocols.

Detailed Design

4. It is requested that wetland vegetation communities be inventoried and assessed during the wet growing season to facilitate detection of hydrophytic vegetation and the proper flagging and/or staking of wetland boundaries in the field. It is requested that a site visit be arranged with the GRCA during the wet growing season.
5. Design should maintain both groundwater and surface water features and connections.

Should you have any further questions or comments, please do not hesitate to contact me at 519-621-2763 x2247.

Yours truly,

A handwritten signature in black ink, appearing to read 'Nathan Garland', written in a cursive style.

Nathan Garland
Acting Policy Planner
Grand River Conservation Authority

Ryan Hamelin

From: Nathan Garland <ngarland@grandriver.ca>
Sent: June-23-15 11:18 AM
To: Ryan Hamelin
Cc: Howard Wray; Cheryl-Anne Ross
Subject: RE: Southgate Bypass - Grassland Birds

Hello Ryan,

Thanks for the email and a good question. I can provide some supporting comments for the survey works, but I can't provide clearance or a justifiable opinion from the GRCA on an MNRF Guideline as MNRF is author and creator of the document.

That being said, historically at the GRCA (in review of planning applications) we have reviewed alternative approaches to collection of data where the site has been relatively well documented and data collected previously had been interrupted (time delays, change of ownership, transfer of consulting firms, etc.) we have considered where the works were previously undertaken and then combined it with the scoped works currently being undertaken. In addition, if there is anticipation or a targeted survey is completed and the species is found, then the survey produced a result which is noted and combined with the previous reports findings.

Additionally, since the previous surveys were completed several years ago (but still within a 5 year timeframe), and generally, multiyear surveys produce a more robust report.

If there is a concern with respect to the GRCA flagging the issues in our review, I would suggest that the combination of the previous survey along with yours all within or less than 5 years creates a more robust survey and has historically been accepted by the GRCA. If there is a concern with MNRF reviewing and accepting I would recommend talking with Kathy Dodge at MNRF in Owen Sound. Also, if MNRF accepts it, our office would accept it as it relies on MNRF's document.

If there is anything else feel free to contact me.

Regards,

Nathan Garland

Acting Policy Planner
Grand River Conservation Authority
(519) 621-2763 EXT. 2247

From: Ryan Hamelin [mailto:ryan@aboudtng.com]
Sent: June-22-15 10:17 AM
To: Nathan Garland
Cc: Howard Wray; Cheryl-Anne Ross
Subject: FW: Southgate Bypass - Grassland Birds

Hi Nathan,

I hope you are doing well.

As part of the Natural Heritage Component of the Southgate Bypass EA, we have completed a single targeted survey to identify and map specific breeding areas for eastern meadow lark and bobolink. This was done in accordance with Terms of Reference requirement 5.a. Through the single survey completed so far, we have identified three parcels of confirmed habitat, with a total of 4 singing male eastern meadow lark, and approximately 25 bobolink exhibiting both singing and display behaviour(both male and female). We also surveyed two additional offsite habitat areas where a single bobolink was observed.

As part of the initial Scoped Environmental Impact Study (Stantec), a full breeding bird survey was completed (June 9 & 23, 2011) that identified eastern meadow lark and bobolink in the same areas we have observed them.

We have a question regarding the need to conduct additional surveys to further identify and map breeding areas for eastern meadow lark and bobolink. Our approved Terms of Reference stated that we would “ Conduct up to three surveys to identify and map specific breeding areas of eastern meadowlark and bobolink.” Since we were able to observe and map both eastern meadowlark and bobolink exhibiting singing and display behaviour during the initial survey, we feel that we are adequately able to fulfil the above stated ToR requirement of identifying and mapping breeding areas. However, we are aware that the MNRF Bobolink Survey Methodology calls for at least three sets of point count surveys.

In your opinion is the single targeted survey completed this year, along with the initial breeding bird survey completed in 2011 adequate to confirm the breeding areas, or do you recommend that an additional two point count surveys be completed in accordance with the MNRF Bobolink Survey Methodology ?

Any guidance regarding the GRCA’s position on this matter would be helpful. If you could get back to us at your earliest convenience it would be greatly appreciated, as that will allow us to fit in two more site visits before July 10th, if required.

Thanks and Take Care,

Ryan Hamelin

Ryan Hamelin, B.S.c (Env). M.Sc. Terrestrial and Wetland Ecologist
ABOUD & ASSOCIATES INC. 591 Woolwich Street . Guelph . Ontario . N1H 3Y5
T:519.822.6839 x 2 . F:519.822.4052 www.aboudtng.com . ryan@aboudtng.com

From: Nathan Garland [<mailto:ngarland@grandriver.ca>]
Sent: March-06-15 4:06 PM
To: Ryan Hamelin
Cc: Howard Wray
Subject: RE: Southgate Bypass - Terms of Reference

Hello Ryan,

I’m sorry this has taken so long to get back to you.

The terms of reference are fine, I’ve attached some comments. The previous EIS submitted by Stantec was OK as well, and the comments are meant as supplemental information in both supporting the Stantec EIS and also when considering detailed design.

From: Dodge, Kathy (MNR) [<mailto:kathy.dodge@ontario.ca>]
Sent: July-10-15 9:26 AM
To: Cheryl-Anne Ross
Subject: RE: dundalk municipal roads project

Hi Cheryl-

As long as all the suitable habitat has been surveyed on the property and you have confirmed presence, then 2 surveys will be sufficient.

If you have not surveyed all the potential habitat, then a 3rd would be required.

Any questions, please give me a call.

Kathy

Kathy Dodge
Management Biologist
Ministry of Natural Resources and Forestry
Owen Sound Field Office
519-371-8422

From: Cheryl-Anne Ross [<mailto:Cheryl@aboudtng.com>]
Sent: Tuesday, June 23, 2015 1:25 PM
To: Dodge, Kathy (MNR)
Cc: Ryan Hamelin
Subject: dundalk municipal roads project

Hi Kathy,

Just following up on the phone message I've left you with further details.

Bobolink and Eastern Meadowlark were identified during breeding bird surveys on the property in two locations in 2011 by the previous consultant. I've now completed one round of grassland bird surveys following the MNR Bobolink protocol, and have confirmed the presence of breeding bobolink and eastern meadowlark in the property, located in the same features as they were identified in 2011.

We would like to know if one survey, with consideration that presence has been confirmed both in 2015 and 2011 is satisfactory for this project?

If you could get back to me at your earliest convenience, it would be greatly appreciated.

Thank you,

Cheryl-Anne Ross B.Sc. . Wildlife Ecologist
ABOUD & ASSOCIATES INC. 591 Woolwich Street . Guelph . Ontario . N1H 3Y5
T:519.822.6839 . F:519.822.4052 www.aboudtng.com cheryl@aboudtng.com

Ryan Hamelin

From: Dodge, Kathy (MNRF) <kathy.dodge@ontario.ca>
Sent: February-26-16 4:26 PM
To: Ryan Hamelin
Cc: Benner, Kim (MNRF)
Subject: RE: Dundalk Industrial Lands - Municipal Class EA
Attachments: fisheries_map.jpg; stream fisheries data.pdf; Melancthon1_part4_WetlandPSW.pdf

Hi Ryan,

I have compiled the information you have requested regarding the Dundalk Industrial Lands.

Species at Risk- I have reviewed our information and I do not have any additional information specific to the study area to provide. You have already identified the presence of Bobolink and Eastern Meadowlark in the study area.

Other potential SAR speices to be aware of during site assessments include (but are not limited to):

- Barn swallow
- Eastern Wood-Pewee
- Golden-Winged Warbler
- Henslow's Sparrow
- Milksnake
- Snapping Turtle
- Northern Long Eared Bat
- Eastern Small footed Bat
- Butternut

Fisheries Information- Attached is a map with corresponding fisheries information. There is limited information on the streams in the area. In general, the headwater streams in this area are considered to be coolwater.

Wetland Mapping and Evaluation- We do not have a Melancthon #1 evaluation record to share for this PSW. It is in the process of revisions. However, attached please find a scanned copy of the map and vegetation community summary from the original evaluation record for that part of the Melancthon #1 record (originally called Melancthon 4). Obviously it is out of date since treatments ponds are now in an area previously mapped as PSW.

I previously exchanged a series of emails with Steven Auod at your office (June 2014) regarding this wetland and the procedure to delineate the boundaries of this wetland should it be necessary.

If you need to discuss any of the above information, please feel free to give me a call.

Kathy

Kathy Dodge

Management Biologist
Ministry of Natural Resources and Forestry

**Appendix 2
Communications**



591 Woolwich Street
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URBAN FORESTRY
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HABITAT RESTORATION
EDGE MANAGEMENT PLANS
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NATURALIZATION PLANS
INTERPRETIVE DESIGN
MONITORING
CONTRACT ADMINISTRATION

ENVIRONMENTAL STUDIES
SUBWATERSHED STUDIES
ENVIRONMENTAL IMPACT
STATEMENTS
ECOLOGICAL LAND
CLASSIFICATION
WETLAND EVALUATION
VEGETATION ASSESSMENT
BOTANICAL INVENTORIES
WILDLIFE SURVEYS
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LANDSCAPE ARCHITECTURE
MASTER PLANNING
RESIDENTIAL COMMUNITIES
COMMERCIAL/INDUSTRIAL
HEALTHCARE AND EDUCATION
STREETSCAPES
PARKS AND OPEN SPACES
TRAIL SYSTEMS
GREEN ROOFS
CONTRACT ADMINISTRATION

EXPERT OPINION
OMB TESTIMONY
LEGAL PROCEEDINGS
PEER REVIEW
RESEARCH
EDUCATION

January 21, 2015

Our Project No: AA13-140A
Sent by email: ryan@aboudtng.com

Nathan Garland, Resource Planner
Grand River Conservation Authority
400 Clyde Road,
Cambridge, Ontario
N1R 5W6

c/o:

Ryan Hamelin, Terrestrial and Wetland Ecologist
About & Associates INC.
591 Woolwich Street
Guelph, Ontario
N1H 3Y5

**Re: Dundalk Industrial Access Road
Existing Conditions Report as part of the Municipal Class
Environmental Assessment
*Terms of Reference***

Dear Nathan,

This letter outlines the Terms of Reference (ToR) for the Dundalk Industrial Access Road, Natural Heritage Existing Conditions Report. This report will be part of the Municipal Class Environmental Assessment (EA), led by Triton Engineering Services Limited that is being undertaken to study a proposed road from Hwy 10 to Ida Street, through the Dundalk Industrial Lands. All subject lands are owned by the Township of Southgate.

Background and Context

The property size and proposed study area for the project is a total 182 hectares. The study will also consider additional 120 meter buffers into select natural features on adjacent properties. The study property is located south of downtown Dundalk, in the Township of Southgate, Grey County and extends from Ida Street to the west and Hwy 10 to the east (see Natural Heritage Study Area Map). A larger landscape level context of the area will also be examined in order to evaluate the significance of the natural heritage features within the broader region.

The study area is contained entirely within the Township of Southgate's municipal boundaries and the Grand River Conservation Authorities (GRCA) jurisdiction. Large sections of the study area contain naturalized environments and host a wide variety of flora and fauna. Sections of the study area contain part of the Provincially Significant Melanchthon Wetland, as well as Significant Woodlands as designated in the Grey County Official Plan.

Proposed Terms of Reference

The ToR, provided below will be based on background natural heritage information (where available) and site visits by Aboud & Associates to collect detailed natural heritage information related to Ecological Land Classification (ELC) communities, species of flora and fauna, wildlife habitat and watercourses. A Scoped Environmental Impact Study (EIS) (Stantec 2013) has already been completed for the property and will be used as the main supporting document for characterizing existing conditions and natural heritage features; field work for report was completed between 2002 and 2011. Preliminary comments on this earlier report have already been received from the GRCA (Nathan Garland, August 29, 2014). These comments have been considered in the development of the current ToR.

As part of the EA study, a description of existing natural heritage features will be detailed, along with a preliminary assessment of potential impacts and opportunities to natural heritage features from proposed road options through the subject lands.

ToR for the Natural Heritage Existing Conditions Report are listed below.

1. Conduct background screening of relevant documents, material and online mapping sources (e.g. Stantec EIS report, NHIC, GRCA, MNR/Midhurst District, and Grey County Official Plan).
2. A full ELC inventory was completed for the subject property as part of the EIS report (Stantec 2013). To update and confirm this earlier work Aboud & Associates Inc. will conduct a single season ELC community validation survey through field investigation. Prepare and update ELC community mapping using a combination of field survey and available background resources.
3. Complete a single season botanical inventory to confirm and add to the existing three season inventory completed by Stantec. Review and update the status of all species identified through field surveys and background resources (SRank; GRank; Species at Risk (Federal); Species at Risk (Provincial); Rare Vascular Plants of Ontario, Fourth Edition (NHIC 2009)).

4. Provincially Significant Wetland:
 - a. Review Wetland Evaluation file to determine presence of potentially significant features.
 - b. Delineate and record edge boundaries of wetlands features using a GPS unit. Create an accurate representation of the wetland area for the Existing Conditions Report and potential impact analysis.
 - c. Following selection of a preferred option through the EA process, any wetland boundary's located within 120m of the preferred option will be pre-staked for agency approval. Aboud & Associates will Coordinate with agencies (MNR, GRCA) to have wetland boundaries surveyed and approved.
5. Bird Surveys: A full single season breeding bird survey of the subject property was completed in June 2011 by Stantec as part of the EIS report. Additional bird survey work will be as follows:
 - a. Conduct up to three surveys to identify and map specific breeding areas of Eastern Meadowlark and Bobolink.
 - b. Assess for the presence of the following Significant Wildlife Habitat (MNR. 2000) (MNR. 2012):
 - i. Woodland Raptor Nesting Habitat (Stick Nest Survey)
 - ii. Land Bird Migratory Area (Song Bird)

Note: The subject property is not a candidate for Significant Wildlife Habitat designation as a Land Bird Migratory Area due to the distance from bodies of water (MNR. 2012):. The presence of Migrating Land Birds will still be assessed as per GRCA requests.

Note: Discussion with the MNR and review of the Significant Wildlife Habitat Technical Guide (MNR 2000) and SWH Ecoregion 6E Criterion Schedule (MNR 2012) confirms that the lagoons on site are not eligible to be classified as Significant Wildlife Habitat for either Shorebird Migratory Stopover Areas or Waterfowl Stopover Areas. As such, these Significant Wildlife Habitat types will not be assessed for.

6. Winter Wildlife Survey:
 - a. Conduct a survey for signs or sightings of winter wildlife and their associated habitat. Location of observed species will be recorded and mapped.
 - b. The potential for the following Significant Wildlife Habitats will be commented on, but will not be fully assessed due the requirement of MNR assessment, or multiple years of observations. Background resources will

be used where possible to inform the potential for these Significant Wildlife Habitat Types:

- i. Deer wintering yards
- ii. Deer Movement Corridors
- iii. Raptor Wintering area

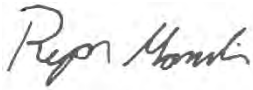
7. Anuran Survey: Complete evening anuran (frog and toad) call counts surveys for all potentially suitable habitat locations. Protocols described in the Marsh Monitoring Program will be followed (Marsh Monitoring Program. 2003).

Note: Two anuran call count surveys have already been completed during appropriate weather conditions and timing windows as part of the EIS and follow up field work (2011, 2014). A final survey will be completed during the appropriate timing window (late April) and weather conditions. Data from all call count surveys will be synthesized together for the final report.

8. Record incidental wildlife observations made during field investigations and combine data with existing wildlife inventories, to create a comprehensive wildlife species list. Review and update status of all identified species (SRank; GRank; COSEWIC; COSSARO)
9. Identify specialized habitat or potential habitat for SAR's known to occur in area / county. Will be completed using MNRF Midhurst County SAR and Habitat Requirements Table along with ELC community maps, field investigation and aerial photo interpretation.
10. Fish:
 - a. Compile fish community records from MNRF, GRCA and other background documents to create a comprehensive fish species list.
 - b. Characterise aquatic habitat within the study area based on thermal regime, vegetation, barriers to movement, depth, pools, riffles, and substrate.
11. Assess the landscape level context of the study area within the broader region, including drainage channels, migratory corridors, extended ELC communities, wetlands, and adjacent habitat and wildlife linkages.
12. Significant Woodlands: Use existing background resources to map the extent of identified Significant Woodlands on the subject property according to the Grey County Municipal Plan.
13. Prepare a report of the existing natural heritage conditions comprised of background, methodology, findings, relevance and application of policies and regulations, summary discussion, and appendices, maps and figures (as needed).
14. Prepare a preliminary impact assessment to the existing natural heritage features from the proposed road alignment options and provide opportunities/guidelines for mitigation measures and restoration.

Yours truly,

ABOUD & ASSOCIATES INC.



Ryan Hamelin, M.Sc.
Terrestrial and Wetland Ecologist

CC: Howard Wray, P. Eng
Triton Engineering Services Limited

CC: Steven Aboud, Senior Ecologist
Aboud & Associates INC.

References

- Bird Studies Canada. 2001. *Ontario Breeding Bird Atlas Guide for Participants*. Environment Canada, Ministry of Natural Resources, Bird Studies Canada, Federation of Ontario Naturalists, and Ontario Field Ornithologists. 43 pp
- Marsh Monitoring Program. 2003 Edition. *Training Kit and Instructions for Surveying Marsh Birds, Amphibians, and Their Habitats*. Published by Bird Studies Canada in cooperation with Environment Canada and the U.S. Environmental Protection Agency. 44 pp
- MNR. 2000. Significant Wildlife Habitat: Technical Guide. Ministry of Natural Resources.
- MNR. 2012. SWH Ecoregion 6E Criterion Schedule. Ministry of Natural Resources.
- NHIC 2009. Rare Vascular Plants of Ontario, Fourth Edition. M.J. Oldham & S.R. Brinker. Natural Heritage Information Center.

<S:\A+A Projects\2013\13-140A Dundalk Industrial Park\Project Mngt>



March 6th, 2015

Ryan Hamelin, Terrestrial and Wetland Ecologist
About and Associates Inc.
591 Woolwich Street
Guelph, ON N1H 3Y5

Dear Mr. Hamelin:

**Re: Dundalk Industrial Access Road, Terms of Reference for Existing Conditions
Report as part of the Municipal Class Environmental Assessment (EA)**

We have now had an opportunity to review the Terms of Reference for the Township of Southgate proposed EA in evaluating road locations. We find the Terms of Reference satisfactory subject to inclusion of the following comments. Additional comments have been provided should the EA process select a preferred alternative for one of the road options.

Terms of Reference

1. The terms of reference indicate that a "single season ELC community validation survey" will be conducted in the field but no dates are provided. Similarly, a "single season botanical survey" is proposed but no dates are provided. Surveys should be completed during appropriate seasons.
2. The terms of reference suggest that the wetland evaluation file will be reviewed "to determine the presence of potentially significant features". This background review should be supplemented with empirical data collected through field observation. For example, the NHIC database indicates that snapping turtle (special concern in Ontario) are potentially present within the vicinity of the study area. The MNRF also identifies Eastern Ribbonsnake as being potentially present within suitable habitat in Grey County. Therefore depending on site features and habitat targeted searches and appropriate mitigation measures for these species may be warranted.
3. The presence of breeding waterfowl and shorebirds could trigger the need for construction timing windows and related mitigation measures to ensure compliance with provincial and federal legislation. Should vegetation removal within the work corridor not be able to occur outside the May 1st – July 31st timing window. It is recommended that a minimum of 2 breeding bird surveys be conducted between May 15th and July 31st in accordance with Ontario Breeding Bird Atlas protocols.

Detailed Design

4. It is requested that wetland vegetation communities be inventoried and assessed during the wet growing season to facilitate detection of hydrophytic vegetation and the proper flagging and/or staking of wetland boundaries in the field. It is requested that a site visit be arranged with the GRCA during the wet growing season.
5. Design should maintain both groundwater and surface water features and connections.

Should you have any further questions or comments, please do not hesitate to contact me at 519-621-2763 x2247.

Yours truly,



Nathan Garland
Acting Policy Planner
Grand River Conservation Authority

APPENDIX 3. SITE INVESTIGATION DETAILS

Dundalk Industrial Access Road Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A

AA16-031A

SURVEY	DATE	TIME	OBSERVER(S)	TEMP	WIND	CLOUD COVER	PRECIPITATION	PAST PRECIPITATION (48H)
Anuran	26/06/2014	21:50 - 00:10	SA, MI	16	1	0	None	None
Winter Wildlife	14/01/2015	10:00 - 16:35	RH, MI	-19.1	1 - 3	0 - 30%	None	3 -6cm (Snow)
Winter Wildlife	20/02/2015	10:30 - 16:15	RH, MI	-23	2 - 4	0 - 20%	None	3 -6cm (Snow)
Anuran	13/04/2015	20:55 - 23:31	CAR, RH	8	2	30%	None	None
ELC, Botanical Survey	16/06/2015	08: 45 - 16:30	RH, CAR	21	2 - 3	60%	None	5.5 mm (Rain)
Grassland Birds	16/06/2015	08: 45 - 09:32	CAR	21	2 - 3	60%	None	5.5 mm (Rain)
Grassland Birds	18/06/2015	07:13 - 08:09	CAR	17	2	20%	None	None
ELC, Botanical Survey	23/06/2015	09:15 - 17:00	RH	20	2	80%	None	None
Grassland Birds	14/07/2015	06:04 - 07:32	CAR	17	2	90%	None	None
Wetland Delineation	27/08/2015	10:45 - 17:30	RH	16		80 - 100%	2.5mm (Rain)	4.8mm (Rain)
Wetland Delineation	28/08/2015	09:45 - 16:45	RH	22		30 - 60%	None	2.5mm (Rain)
Aquatic Habitat Assessment	20/10/2015	11:15 - 14:45	RH, CAR	13	3	40 - 80%	None	4.8mm (Rain)
ELC, Botanical Survey	20/10/2015	11:15 - 14:45	RH, CAR	13	3	40 - 80%	None	4.8mm (Rain)
Breeding Bird Point Count & Area Search	13/06/2016	06:11 - 10:09	CAR	9	2	60	none	none
Breeding Bird Point Count & Area Search	07/07/2016	06:32 - 10:32	CAR	19	2	100	none	light rain
Amphibian Survey	20/04/2016	21:14 - 21:46	CAR, RH	9	0	20	none	none
Amphibian Survey	25/05/2016	22:07 - 22:57	CAR, RH	18	2	90	none	none
Amphibian Survey	03/05/2016	20:58 - 22:54	CAR, RH	9	2	0	none	light drizzle
Amphibian Survey	31/05/2016	21:37 - 23:01	CAR, RH	13	1	0	none	none
Amphibian Survey	27/06/2016	21:56 - 23:04	CAR, RH	18	2	0	none	none
Amphibian Survey	04/07/2016	21:37 - 22:51	CAR, RH	18	0	0	none	none

OBSERVERS

R. Hamelin	RH
C.A. Ross	CAR
S. Aboud	SA
M. Iles	MI

ELC Code ¹	Map ID	Vegetation Type	Community Description
Mixed Meadow (MEM)			
MEMM3	1	Dry - Fresh Mixed Meadow Ecosite	A Mixed Meadow community that is periodically mowed and/or has experienced recent disturbance. Similar species composition to MEMM4, but with less diversity and greater amounts of non-native species such as Tufted Vetch (<i>Vicia cracca</i>) and Meadow Timothy (<i>Phleum pratense</i>). Little to no woody species are present.
MEMM4	2	Fresh-moist Mixed Meadow Ecosite	Open meadow communities of forbs and grasses on previously cleared land that still experiences periodic cutting. This community type is a Mixed Meadow with varying degrees of succession, with a variety of native specie and exotic species. Common species in the community include Canada Goldenrod (<i>Solidago canadensis</i>), Tall Goldenrod (<i>Solidago altissima</i>), Canada Anemone (<i>Anemone canadensis</i>), Field Horsetail (<i>Equisetum arvense</i>). Some areas of meadow include complexes of wetland species, indicating previous wetland conditions. Common wetland species in wet areas include; Red-osier Dogwood (<i>Cornus stolonifera</i>), Dark-Green Bulrush (<i>Scirpus atrovirens</i>), Retrorse Sedge (<i>Carex retrorsa</i>), Fox Sedge (<i>Carex vulpinoidea</i>) and Reed Canary Grass (<i>Phalaris arundinacea</i>).
Deciduous Woodland (WOD)			
WODM5-1	4	Fresh-moist Poplar Deciduous Woodland Type	These communities occur in areas of previous disturbance with evidence of past earth-works and clearings. Mid-aged Balsam Poplar (<i>Populus balsamifera</i>) and Trembling Aspen (<i>Populus tremuloides</i>) are the two dominant canopy species with less than 50% canopy cover. In wetter areas the understory is primarily Red-osier Dogwood, mixed Willow species, Dark-green Bulrush and Canada Anemone. The drier areas of the woodland are primarily dominated by Goldenrod and Aster species.
WODM4-3	3	Sugar Maple Deciduous Woodland Type	These areas are residual patches of sugar maple forest which have been retained in open meadow or agriculture communities. The canopy cover of the communities is less then 60%. The primarily canopy species is Sugar Maple with rare occurrences of Black Cherry (<i>Prunus serotina</i>). Understory species is primarily Red-osier Dogwood and Wild Red Raspberry (<i>Rubus idaeus</i>), with mixed meadow species such as Goldenrods, Asters, and Queen Anne's Lace (<i>Daucus carota</i>).
Coniferous Forest (FOC)			
FOCM6-1	5	Dry-fresh White Pine Naturalized Coniferous Plantation	This community is a dense plantation of Eastern White Pine (<i>Pinus strobus</i>). The community has little understory or ground cover with only minor occurrences of Green Ash (<i>Fraxinus pennsylvanica</i>) saplings, Alternate-leaved Dogwood (<i>Cornus alternifolia</i>) and common hellaborine. There is evidence along the edge of the communities of wetland conditions with some wetland species from adjacent community entering the community and includes wetland pockets.
FOCM6-4*	6	Dry-fresh White Spruce Naturalized Coniferous Plantation	This community is a dense plantation of White Spruce (<i>Picea glauca</i>). White Spruce trees are mid-aged with an average DBH of approximately 20 cm. The community has little too no ground cover throughout most of the community. Along the edges of the community and in small canopy opens, other species such as Red-osier Dogwood, Meadow Willow (<i>Salix petiolaris</i>), Goldenrods, Asters, and Eastern Hellaborine (<i>Epipactis helleborine</i>) are present.

ELC Code ¹	Map ID	Vegetation Type	Community Description
Mixed Forest (FOM)			
FOMM5-2	7	Dry- Fresh Poplar Mixed Forest	Mature forest community with moderate to good drainage. Canopy is primarily composed of Trembling Aspen, with White Spruce, White Birch (<i>Betula papyrifera</i>), Balsam Poplar, and Eastern White Cedar (<i>Thuja occidentalis</i>) associates, with occurrences of Black Cherry and American Elm (<i>Ulmus Americana</i>). Understory is primarily composed of saplings of canopy species with occurrences of Alternate-leaved Dogwood, Choke Cherry (<i>Prunus Virginian</i>), Beaked Hazel (<i>Corylus cornuta</i>) and a Serviceberry species (<i>Amelanchier</i> sp.). Ground cover included Bracken Fern (<i>Pteridium aquilinum</i>), Field Horsetail, Spreading Dogbane (<i>Apocynum androsaemifolium</i>), Canada Mayflower (<i>Maianthemum canadense</i>), and Woodland Strawberry (<i>Fragaria vesca</i>).
FOMM7-2	8	Fresh – Moist White Cedar – Hardwood Mixed Forest Type	Community is dominated by Eastern White Cedar, with Balsam Fir (<i>Abies balsamea</i>) and Green Ash (<i>Fraxinus pennsylvanica</i>) as the associate species, with occurrences of White Birch, Yellow Birch (<i>Betula alleghaniensis</i>), Sugar Maple (<i>Acer saccharum</i> ssp. <i>saccharum</i>) and Black Cherry. The sub-canopy, understory and ground layer are sparsely vegetated with primarily canopy species, as well as occurrences of Sensitive Fern (<i>Onoclea sensibilis</i>), Bladder Sedge (<i>Carex intumescence</i>), Wild Sarsaparilla (<i>Aralia nudicaulis</i>), Eastern Helleborine, and Smooth Gooseberry (<i>Ribes hirtellum</i>). Soils ranged from dry to moist with obvious wet areas with no evidence of surface pooling.
FOMM8	9	Fresh – Moist Poplar – White Birch Mixed Forest Ecosite	This is a mature forest community dominated by White Birch, Trembling Aspen and Green Ash, other associated canopy species include Eastern White Cedar, Black Cherry, and Balsam Fir. The understory is mostly canopy species, with occurrences of Choke Cherry, Sedge species and Asters and Goldenrod along the edge and in the more open area. Soil is moist bordering on wetland conditions in some areas.
Agriculture (AG)			
OAGM1	12	Annual Row Crop	Row crops of soy and corn.
OAGM2	13	Perennial Cover Crop	Open space of planted grasses and forbs. Regularly cut will little vegetation litter.
Deciduous Forest (FOD)			
FODM5-2	10	Dry- Fresh Sugar Maple - Beech Deciduous Forest Type	This community is a mature community with evidence of past logging that has removed numerous mature trees. A small number of large trees with DBH over 50 cm still occur in the woodland, however < 10 cm DBH is the dominant tree size. Canopy community composition is dominated by Sugar Maple and Beech (<i>Fagus grandifolia</i>), with occurrences of White Birch, Yellow Birch, American Elm, Green Ash and Trembling Aspen. Sub-canopy and understory species are dominated by the canopy species, with additional occurrences of Alternate-leaved Dogwood, Blackberries (<i>Rubus allegheniensis</i>) and Blue Cohosh (<i>Caulophyllum thalictroides</i>). Ground cover was primarily Sugar Maple seedlings, with occurrences of Pennsylvania Sedge (<i>Carex Pennsylvanica</i>), False Solomon Seal (<i>Maianthemum stellatum</i>) and moss.
FODM6-1	11	Fresh – Moist Sugar Maple – Lowland Ash Deciduous Forest Type	The community is complexed with the SWD2-2 wetland community, The dominant species is Sugar maple in the upland areas, with Green Ash and White Birch more common in the wetter areas. Other tree occurrences include Ironwood, Basswood, Beech, American Elm, Balsam Fir, Red Maple and Balsam Poplar. There is a thick understory partly comprised of regeneration of the canopy community with choke cherry, Alternate-leaved Dogwood, Red-osier Dogwood Sarsaparilla and various Rubus species. Ground cover is a mixture of grass and forbs.
Mixed Swamp (SWM)			

ELC Code ¹	Map ID	Vegetation Type	Community Description
SWMM1-1	14	White Cedar - Hardwood Mineral Mixed Swamp Type	<p>This community is located on either side of the watercourse, north of the subject property. The community is dominated by Eastern White Cedar, with occurrences of Trembling Aspen, and Balsam Fir. The understory community is sparse, with Reed Canary Grass as the most dominant species. Spotted Jewel-weed is abundant in the open areas. Soil was saturated in most areas, with some standing water.</p> <p>Due to property restriction, this community was assessed from the edge.</p>
SWMM3	15	Birch - Poplar Mineral Mixed Swamp Ecosite	<p>This is a common community within the study area and contains a wide variety of canopy species, including White Birch, Trembling Aspen, Green Ash, Balsam Poplar, Balsam Fir, Eastern White Cedar, Black Spruce (<i>Picea mariana</i>) and White Spruce. Canopy varies from full to less than 60 % cover. Sub-canopy and understory species include canopy species with occurrences of Alternate-leaved Dogwood, Choke Cherry, Serviceberry and Beaked Hazel. Herbaceous understory cover varied inversely with canopy cover and includes species such as, Bladder sedge, Graceful Sedge (<i>Carex gracillima</i>), Sensitive Fern, and Reed Canary Grass, among others.</p>
SWMM4-2	16	Black Ash - Conifer Mineral Mixed Swamp Type	<p>This community had a canopy cover of approximately 60% with some inclusions of open meadow marsh. The canopy was dominated by Black Ash (<i>Fraxinus nigra</i>), Trembling Aspen and Balsam Fir, with occurrences of White Birch, Balsam Poplar Tamarack and Red Maple. The sub-canopy and understory was mostly immature canopy species, with Alternate-leaved Dogwood occurring in the drier areas. Understory and ground cover herbaceous species included Reed Canary Grass, various sedges species, Asters, Goldenrods and Duckweed in areas of standing water. The soil was black with high organic content in lower areas, but was still mineral soil. Standing pools of water were present throughout the growing season, and frog species present.</p>
SWMM5-1	17	Balsam Fir - Hardwood Mineral Mixed Swamp Type	<p>This community is dominated by Balsam Fir, with Trembling Aspen and White Birch as associate canopy species. Other canopy species include Green Ash, White Spruce, Black Spruce, American Elm, Black Ash, Red Maple, Eastern White Cedar and Tamarack (<i>Larix laricina</i>). Canopy cover varies from full cover to 70 % cover, with understory cover varying conversely with canopy cover. Herbaceous species include Asters, Roughleaf Goldenrod (<i>Solidago rugosa</i>), Fringed Loosestrife (<i>Lysimachia ciliata</i>), and various sedge species. Soil moisture varied throughout the community from moist to saturated with occasional areas of standing water.</p>
Deciduous Swamp (SWD)			

ELC Code ¹	Map ID	Vegetation Type	Community Description
SWDM2-2	18	Green Ash Mineral Deciduous Swamp Type	<p>This is the primary community within the subject property and runs along either side of the main drainage channel. Canopy cover in the community is between 40 %- 60% with Green Ash as the dominant canopy species. Other common canopy species include Balsam Poplar, Trembling Aspen and Tamarack and few occurrences of White Spruce and White Birch. Sub-canopy and understory included canopy species and well as mixed Willow species, American Elm, Choke Cherry and Red Maple. A wide variety of herbaceous species is present, including Reed Canary Grass, Goldenrod species, Various Asters, Canada Anemone, Sensitive Fern, Lake Bank Sedge (<i>Carex lacustris</i>), Bladder Sedge, Blue Flag Iris (<i>Iris versicolor</i>), Jack-in-the-Pulpit (<i>Arisaema triphyllum</i>), Nodding Beggar-ticks (<i>Bidens cernua</i>), Redtop (<i>Agrostis gigantea</i>), and Fowl Mana Grass (<i>Fowl Manna-grass</i>). Soil and wetness characteristics varied within the community from mesic to standing water of more than 20 cm. Areas of standing water were the result of beaver damming and flooding. The flooded area provided potential habitat for waterfowl and small fish were observed in this area.</p> <p>Minor complexes of FOD7-2: Fresh – Moist Green Ash - Hardwood Lowland Deciduous Forest Type were present within the community. These complexes included similar species composition as the main community, but with less wetland species and more occurrences or Red Raspberry, Dwarf Raspberry (<i>Rubus pubescens</i>) and Wild Black Current (<i>Ribes americanum</i>).</p>
SWDM4-5	19	Poplar Mineral Deciduous Swamp Type	<p>These communities are dominated by Balsam Poplar and Trembling Aspen, with Green Ash as the sub-dominant canopy species. Other canopy species include White Birch, American Elm, Tamarack and White Spruce. Sub canopy and understory species composition was similar to the canopy, but with occurrences of Red-osier Dogwood, Willow species, Red Raspberry, Narrow-leaved Meadow-sweet (<i>Spiraea alba</i>) and European Highbush Cranberry (<i>Viburnum opulus</i>). Herbaceous species include Bladder Sedge, Purple Avens (<i>Geum rivale</i>), Fox Sedge, Marsh Bedstraw (<i>Galium palustre</i>), Tall Meadow Rue (<i>Thalictrum pubescens</i>), Northern Lady Fern (<i>Athyrium filix-femina var. angustum</i>), Dark Green Bullrush, and Soft Rush (<i>Juncus Effucius</i>). Development is occurring along the edges of some of these communities, changing the drainage and moisture characterises, creating areas of pooling.</p>
Thicket Swamp (SWT)			
SWTM2-1	20	Red-osier Dogwood Deciduous Thicket Swamp	<p>This community has poorly defined boundaries and often transitions seamlessly into the adjacent communities. Red-osier Dogwood is the dominant species, with some occurrences of shrub Willow and Poplar. Reed Canary Grass is the dominant herbaceous species, with frequent occurrences of Asters, Goldenrods and Dark Green Bullrush. The soil was saturated with small areas of pooling water in the spring, and dryer throughout the summer and fall.</p>
SWTM3	21	Willow Mineral Deciduous Thicket Swamp Ecosite	<p>These communities are dominated by various Willow species, with Meadow Willow (<i>Salix petiolaris</i>) as the most dominant, other species of Willow observed include Pussy Willow (<i>Salix discolor</i>), Heart-leaved Willow (<i>Salix eriocephala</i>) and Shining Willow (<i>Salix lucida</i>). Other canopy and sub-canopy occurrences include Red-osier Dogwood, Balsam Poplar and Trembling Aspens. Herbaceous species cover varied widely and included Asters and Goldenrods, Reed Canary Grass, and various Sedge species.</p>
Meadow Marsh (MAM)			

ELC Code ¹	Map ID	Vegetation Type	Community Description
MAMM1-16	22	Mixed Graminoid Mineral Meadow Marsh Type	These are open Meadow Marsh communities with obvious evidence of past and/or ongoing disturbance from agriculture and other activities. Communities were previously cleared and may still undergo periodic cutting. Standing surface water was present in parts of the community during spring and early summer. The communities are dominated by graminoid species such as Dark Green Bulrush, Fox Sedge, Path Rush (<i>Juncus tenuis</i>), Lake-bank Sedge, Awl-fruited Sedge, Reed Canary Grass. A variety of native and non-native forbs such as Grass leaved Goldenrod (<i>Euthamia graminifolia</i>), Calico Aster (<i>Symphyotrichum lateriflorum</i>), Canada Anemone, White Turtlehead (<i>Chelone glabra</i>), Purple-stem Aster (<i>Symphyotrichum puniceum</i>), Blue Flag Iris, Purple Avens, Tall Butter-cup (<i>Ranunculus acris</i>), Hairy Willow Herb (<i>Epilobium hirsutum</i>) and Bedstraw species were also present, and less dominant than the graminoid species. Some woody species such as Red-osier Dogwood, Willows and Balsam Poplar were minor occurrences.
MAMM1-3	23	Reed-canary Grass Graminoid Mineral Meadow Marsh Type	<p>These are open communities with little tree cover. The moisture regime within communities varied, resulting in complexes of Reed Canary Grass Graminoid Meadow Type and Reed-canary Grass Graminoid Mineral Meadow Marsh Type communities. Communities were dominated by Reed-Canary Grass, often to the exclusion of other species. Associates included Dark Green Bulrush, Goldenrod species, Wild Cucumber (<i>Echinocystis lobata</i>), Spotted Joe-pye-weed (<i>Eutrochium maculatum</i>), and Nodding Beggars Tick.</p> <p>The MAM2-2 community along the water course from the trail to the lagoons also contained a high number of standing dead snags, as well as occurrences of Green Ash, Willow, Red-osier Dogwood and Balsam Poplar.</p>
Shallow Marsh (MAS)			
MASM1-1	24	Cattail Mineral Shallow Marsh Type	This community is dominated by Cattails to the exclusion of other species. Shallow open water was present in the middle of the community during spring, will little to no open water by late summer. Along the edge of the community, adjacent to the agricultural row crops, a variety of other herbaceous species were present.
MASM1-5	25	Broad-leaved Sedge Mineral Shallow Marsh Type	Dark Green Bulrush and Lake Bank Sedge were the two most common species in this community with Reed Canary Grass as the associate species. Other species in the community include Canada Anemone, Lance-leaf Goldenrod, Jo-pye-weed, Boneset (<i>Eutrochium perfoliatum</i>), Common Woolly Bulrush (<i>Scirpus cyperinus</i>) and Hybrid Cattail (<i>Typha angustifolia X Typha latifolia</i>) in the wettest areas. Occurrences of small Willow shrubs and Red-osier Dogwood were also present. Standing water and/or saturated soils were present throughout most of the growing season.
MASO1-1	26	Cattail Organic Shallow Marsh	This is a shallow marsh community dominated by Cattail mats. Lesser Duckweed (<i>Lemna minor</i>) and willow species were present as well as a large number of standing snags. There was evidence of Beaver activity and the community had high potential as Turtle and Amphibian habitat.
Floating-leaved Shallow Aquatic (SAF)			
SAF_1-3	27	Duckweed Floating-leaved shallow Aquatic	This is s shallow marsh community dominated by Lesser Duckweed, with Willow and Cattails as common occurrences. Large numbers of standing snags were present. There was evidence of Beaver activity and the community had high potential as Turtle and Amphibian habitat.
Constructed (CV)			

ELC Code¹	Map ID	Vegetation Type	Community Description
Road	28	Road	Paved Road from Ida Street to Lystek Organic Materials Recovery Center.
Residence	29	Residence	Private Residence within study area boundary.
Lagoon	30	Lagoon	Storage lagoon area is partially mowed with short cut grass along main trails and roads. The lagoons have cattail communities established along the edge that may provide some habitat.
Devel	31	Development	These are developed industrial properties with no recognized plant communities.
¹ ELC Codes generally follows the ELC Second Approximation (Lee 2008)			
* Indicates ELC was not included in the First or Second ELC Approximation (Lee, et al., 1998, 2008).			

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X	X	FE	Athyrium filix-femina var. angustum	<i>Lady Fern</i>	Dryopteridaceae	4	0	NL	NL	S5	G5	
	X	FE	Cystopteris bulbifera	<i>Bulblet Fern</i>	Dryopteridaceae	5	-2	NL	NL	S5	G5	
X	X	FE	Dryopteris carthusiana	<i>Spinulose Shield Fern</i>	Dryopteridaceae	5	-2	NL	NL	S5	G5	
X	X	FE	Equisetum arvense	<i>Field Horsetail</i>	Equisetaceae	0	0	NL	NL	S5	G5	
X		FE	Equisetum hyemale	<i>Common Scouring-rush</i>	Equisetaceae	2	-2	NL	NL	S5	G5	
	X	FE	Gymnocarpium dryopteris	<i>Oak Fern</i>	Dryopteridaceae	7	0	NL	NL	S5	G5	
X	X	FE	Matteuccia struthiopteris	<i>Ostrich Fern</i>	Dryopteridaceae	3	0	NL	NL	S5	G5	
X	X	FE	Onoclea sensibilis	<i>Sensitive Fern</i>	Dryopteridaceae	4	-3	NL	NL	S5	G5	
X		FE	Polystichum acrostichoides	<i>Christmas Fern</i>	Dryopteridaceae	5	5	NL	NL	S5	G5	
X	X	FE	Pteridium aquilinum	<i>Bracken Fern</i>	Dennstaedtiaceae	1	3	NL	NL	S5	G5T	
X	X	FE	Thelypteris palustris	<i>Marsh Fern</i>	Thelypteridaceae	2	-3	NL	NL	S5	G5T?	
X	X	FO	Achillea millefolium	<i>Yarrow</i>	Asteraceae	1	3	NL	NL	SE?	G5T?	
X		FO	Alisma triviale	<i>Northern Water-plantain</i>	Alismataceae	1	-5	NL	NL	S5	G5	
X	X	FO	Anemone canadensis	<i>Canada Anemone</i>	Ranunculaceae	3	-3	NL	NL	S5	G5	
	X	FO	Antennaria neglecta	<i>Field Pussytoes</i>	Asteraceae	3	5	NL	NL	S5	G5	
X	X	FO	Apocynum androsaemifolium	<i>Spreading Dogbane</i>	Apocynaceae	3	5	NL	NL	S5	G5T?	
X	X	FO	Aralia nudicaulis	<i>Wild Sarsaparilla</i>	Araliaceae	4	3	NL	NL	S5	G5	
	X	FO	Arctium minus	<i>Lesser Burdock</i>	Asteraceae	0	3	NL	NL	SE5	G?T?	
	X	FO	Arisaema triphyllum	<i>Jack-in-the-pulpit</i>	Araceae	5	-2			S5	G5T5	
X	X	FO	Asclepias syriaca	<i>Common Milkweed</i>	Asclepiadaceae	0	5	NL	NL	S5	G5	
X	X	FO	Bidens cernua	<i>Nodding Beggar-ticks</i>	Asteraceae	2	-5	NL	NL	S5	G5	
X		FO	Bidens connata	<i>Purple-stemmed Beggarticks</i>	Asteraceae	5	-3	NL	NL	SEH		
X	X	FO	Caltha palustris	<i>Marsh Marigold</i>	Ranunculaceae	5	-5	NL	NL	S5	G5	
	X	FO	Cardamine diphylla	<i>Two-leaf Toothwort</i>	Brassicaceae	7	5	NL	NL	S5	G5	
	X	FO	Caulophyllum giganteum	<i>Giant Blue Cohosh</i>	Berberidaceae	6	5	NL	NL	S4?	G?	
X		FO	Caulophyllum thalictroides	<i>Blue Cohosh</i>	Berberidaceae	6	5	NL	NL	S5	G5	
	X	FO	Centaurea jacea	<i>Brown Starthistle</i>	Asteraceae	0	5	NL	NL	SE5	G?	
X		FO	Cerastium sp.	<i>Chickweed sp.</i>	Caryophyllaceae							
X	X	FO	Chelone glabra	<i>White Turtlehead</i>	Scrophulariaceae	7	-5	NL	NL	S5	G5	
	X	FO	Cichorium intybus	<i>Chicory</i>	Asteraceae	0	5	NL	NL	SE5	G?	
X	X	FO	Circaea canadensis	<i>Broad-leaved Enchanter's Nightshade</i>	Onagraceae	3	3	NL	NL	S5	G5	

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X		FO	Cirsium arvense	<i>Canada Thistle</i>	Asteraceae	0	3	NL	NL	SE5	G?	
	X	FO	Cirsium vulgare	<i>Bull Thistle</i>	Asteraceae	0	4	NL	NL	SE5	G5	
	X	FO	Clinopodium vulgare	<i>Field Basil</i>	Lamiaceae	4	5	NL	NL	S5	G?	
X	X	FO	Daucus carota	<i>Queen Anne's Lace</i>	Apiaceae	0	5	NL	NL	SE5	G?	
	X	FO	Epifagus virginiana	<i>Beechdrops</i>	Orobanchaceae	6	5	NL	NL	S5	G5	
X		FO	Epilobium hirsutum	<i>Hairy Willow Herb</i>	Onagraceae	0	-3	NL	NL	S5	G5	
X	X	FO	Epipactis helleborine	<i>Eastern Helleborine</i>	Orchidaceae	0	5	NL	NL	SE5	G?	
X		FO	Erigeron annuus	<i>White-top Fleabane</i>	Asteraceae	0	1	NL	NL	S5	G5	
	X	FO	Erigeron strigosus	<i>Daisy Fleabane</i>	Asteraceae	0	1	NL	NL	S5	G5	
	X	FO	Erythronium americanum	<i>Yellow Trout-lily</i>	Liliaceae	5	5	NL	NL	S5	G5T5	
X	X	FO	Euthamia graminifolia	<i>Grass-leaved Goldenrod</i>	Asteraceae	2	-2	NL	NL	S5	G5	
X	X	FO	Eutrochium maculatum var. maculatum	<i>Spotted Joe-pye Weed</i>	Asteraceae	4	-5	NL	NL	S5	G5T5	
X		FO	Eutrochium perfoliatum	<i>Common Boneset</i>	Asteraceae	4	-3	NL	NL	S5	G5	
X	X	FO	Fragaria vesca	<i>Woodland Strawberry</i>	Rosaceae	2	3	NL	NL	S5	G5T?	
X	X	FO	Fragaria virginiana	<i>Virginia Strawberry</i>	Rosaceae	2	3	NL	NL	S5	G5T?	
	X	FO	Galium aparine	<i>Catchweed Bedstraw</i>	Rubiaceae	4	3	NL	NL	S5	G5	
X		FO	Galium asprellum	<i>Rough Bedstraw</i>	Rubiaceae	6	-5	NL	NL	S5	G5	
	X	FO	Galium mollugo	<i>Great Hedge Bedstraw</i>	Rubiaceae	0	5	NL	NL	SE5	G?	
X		FO	Galium palustre	<i>Marsh Bedstraw</i>	Rubiaceae	5	-5	NL	NL	S5	G5	
	X	FO	Galium triflorum	<i>Sweet-scent Bedstraw</i>	Rubiaceae	4	2	NL	NL	S5	G5	
X	X	FO	Geranium robertianum	<i>Herb-robert</i>	Geraniaceae	0	5	NL	NL	SE5	G5	
	X	FO	Geum aleppicum	<i>Yellow Avens</i>	Rosaceae	2	-1	NL	NL	S5	G5	
X	X	FO	Geum canadense	<i>White Avens</i>	Rosaceae	3	0	NL	NL	S5	G5	
X	X	FO	Geum rivale	<i>Purple Avens</i>	Rosaceae	7	-5	NL	NL	S5	G5	
X		FO	Heracleum maximum	<i>Cow-parsnip</i>	Apiaceae	3	-3	NL	NL	S5	G5	✓
	X	FO	Hesperis matronalis	<i>Dame's Rocket</i>	Brassicaceae	0	5	NL	NL	SE5	G4G5	
X		FO	Hieracium lachenalii	<i>Common Hawkweed</i>	Asteraceae	0	5	NL	NL	SE2?	G?	
	X	FO	Hydrophyllum virginianum	<i>Virginia Waterleaf</i>	Hydrophyllaceae	6	-2	NL	NL	S5	G5	
X	X	FO	Impatiens capensis	<i>Spotted Jewel-weed</i>	Balsaminaceae	4	-3	NL	NL	S5	G5	
X	X	FO	Iris versicolor	<i>Blueflag Iris</i>	Iridaceae	5	-5	NL	NL	S5	G5	
X	X	FO	Lemna minor	<i>Lesser Duckweed</i>	Lemnaceae	2	-5	NL	NL	S5	G5	
X		FO	Leucanthemum vulgare	<i>Oxeye Daisy</i>	Asteraceae	0	5	NL	NL	SE5	G?	

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	X	FO	Lotus corniculatus	<i>Birds-foot Trefoil</i>	Fabaceae	0	1	NL	NL	SE5	G?	
	X	FO	Lycopus uniflorus	<i>Northern Bugleweed</i>	Lamiaceae	5	-5	NL	NL	S5	G5	
	X	FO	Lysimachia ciliata	<i>Fringed Loosestrife</i>	Primulaceae	4	-3	NL	NL	S5	G5	
	X	FO	Lysimachia terrestris	<i>Swamp Loosestrife</i>	Primulaceae	6	-5	NL	NL	S5	G5	
X	X	FO	Maianthemum canadense	<i>Canada May Flower</i>	Liliaceae	5	0	NL	NL	S5	G5	
X	X	FO	Maianthemum racemosum	<i>False Solomon's-seal</i>	Liliaceae	5	3	NL	NL	S5	G5T	
	X	FO	Maianthemum stellatum	<i>Starflower False Solomon's-seal</i>	Liliaceae	6	1	NL	NL	S5	G5	
	X	FO	Matricaria discoidea	<i>Pineapple-weed Chamomile</i>	Asteraceae	0	3	NL	NL	SE5	G5	
X	X	FO	Medicago lupulina	<i>Black Medic</i>	Fabaceae	0	1	NL	NL	SE5	G?	
X	X	FO	Mentha arvensis	<i>Field Mint</i>	Lamiaceae	3	-3	NL	NL	S5	G5	
	X	FO	Mitella nuda	<i>Naked Bishop's-cap</i>	Saxifragaceae	6	-3	NL	NL	S5	G5	
	X	FO	Myosotis laxa	<i>Small Forget-me-not</i>	Boraginaceae	6	-5	NL	NL	S5	G5	
X	X	FO	Myriophyllum sp.	<i>Water-milfoil sp.</i>	Haloragaceae			NL	NL			
X	X	FO	Nasturtium officinale	<i>True Watercress</i>	Brassicaceae	0	-5	NL	NL	SE	G?	
X		FO	Packera aurea	<i>Golden Ragwort</i>	Asteraceae	7	-3	NL	NL	S5	G5	
X	X	FO	Pastinaca sativa	<i>Wild Parsnip</i>	Apiaceae	0	5	NL	NL	SE5	G?	
	X	FO	Persicaria amphibia	<i>Water Smartweed</i>	Polygonaceae	5	-5	NL	NL	S5	G5	
	X	FO	Persicaria lapathifolia	<i>Dock-leaf Smartweed</i>	Polygonaceae	2	-4	NL	NL	S5	G5	
	X	FO	Pilosella aurantiaca	<i>Orange Hawkweed</i>	Asteraceae	0	5	NL	NL	SE5	G?	
	X	FO	Plantago lanceolata	<i>English Plantain</i>	Plantaginaceae	0	0	NL	NL	SE5	G5	
	X	FO	Plantago major	<i>Nipple-seed Plantain</i>	Plantaginaceae	0	-1	NL	NL	SE5	G5	
	X	FO	Plantago rugelii	<i>Black-seed Plantain</i>	Plantaginaceae	1	0	NL	NL	S5	G5	
	X	FO	Polygonatum pubescens	<i>Downy Solomon's-seal</i>	Liliaceae	5	5	NL	NL	S5	G5	
X	X	FO	Potamogeton sp.	<i>Pondweed sp.</i>	Potamogetonaceae			NL	NL			
	X	FO	Potentilla recta	<i>Sulphur Cinquefoil</i>	Rosaceae	0	5	NL	NL	SE5	G?	
X	X	FO	Prunella vulgaris ssp. lanceolata	<i>Self-heal</i>	Lamiaceae	5	5	NL	NL	S5	G5	
X		FO	Pyrola americana	<i>American Wintergreen</i>	Pyrolaceae	7	1	NL	NL	S4?	G5	
X	X	FO	Ranunculus acris	<i>Tall Butter-cup</i>	Ranunculaceae	0	-2	NL	NL	SE5	G5	
X	X	FO	Rudbeckia hirta var. hirta	<i>Black-eyed Susan</i>	Asteraceae	1	3	NL	NL	S5	G5	
	X	FO	Rumex crispus	<i>Curly Dock</i>	Polygonaceae	0	-1	NL	NL	SE5	G?	
	X	FO	Rumex obtusifolius	<i>Bitter Dock</i>	Polygonaceae	0	0	NL	NL	SE5	G5	

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X	X	FO	Sium suave	<i>Hemlock Water-parsnip</i>	Apiaceae	4	-5	NL	NL	S5	G5	
X	X	FO	Solidago altissima	<i>Tall Goldenrod</i>	Asteraceae	1	3	NL	NL	S5	G5T5	
X	X	FO	Solidago canadensis var. canadensis	<i>Canada Goldenrod</i>	Asteraceae	1	3	NL	NL	S5	G5	
	X	FO	Solidago gigantea	<i>Smooth Goldenrod</i>	Asteraceae	4	-3	NL	NL	S5	G5	
X	X	FO	Solidago nemoralis var. nemoralis	<i>Gray-stemmed Goldenrod</i>	Asteraceae	2	5	NL	NL	S5	G5	
X		FO	Solidago rugosa	<i>Roughleaf Goldenrod</i>	Asteraceae	3	0	NL	NL	S5	G5T?	
	X	FO	Symphotrichum ericoides var. ericoides	<i>White Heath Aster</i>	Asteraceae	4	4	NL	NL	S5	G5	
	X	FO	Symphotrichum lanceolatum ssp. lanceolatum	<i>Panicled Aster</i>	Asteraceae	3	-3	NL	NL	S5	G5	
X	X	FO	Symphotrichum lateriflorum	<i>Calico Aster</i>	Asteraceae	2	0	NL	NL	S5	G5	
X	X	FO	Symphotrichum novae-angliae	<i>New England Aster</i>	Asteraceae	2	-3	NL	NL	S5	G5	
X	X	FO	Symphotrichum puniceum	<i>Swamp Aster</i>	Asteraceae	5	-5	NL	NL	S5	G5	
X	X	FO	Taraxacum officinale	<i>Brown-seed Dandelion</i>	Asteraceae	0	3	NL	NL	SE5	G5	
X	X	FO	Thalictrum pubescens	<i>Tall Meadow-rue</i>	Ranunculaceae	5	-2	NL	NL	S5	G5	
	X	FO	Tiarella cordifolia	<i>Heart-leaved Foam-flower</i>	Saxifragaceae	6	1	NL	NL	S5	G5	
	X	FO	Trifolium pratense	<i>Red Clover</i>	Fabaceae	0	2	NL	NL	SE5	G?	
X		FO	Trillium erectum	<i>Red Trillium</i>	Liliaceae	6	1	NL	NL	S5	G5	
X	X	FO	Trillium grandiflorum	<i>White Trillium</i>	Liliaceae	5	5	NL	NL	S5	G5	
X	X	FO	Typha angustifolia	<i>Narrow-leaved Cattail</i>	Typhaceae	3	-5	NL	NL	SE5	G5	
X		FO	Typha latifolia	<i>Broad-leaf Cattail</i>	Typhaceae	3	-5	NL	NL	S5	G5	
X	X	FO	Typha x glauca	<i>(Typha angustifolia X Typha latifolia)</i>	Typhaceae	3	-5	NL	NL	SE5	G?	
X	X	FO	Urtica dioica ssp. dioica	<i>Stinging Nettle</i>	Urticaceae	0	-1	NL	NL	SE2	G5T?	
X	X	FO	Verbascum thapsus	<i>Great Mullein</i>	Scrophulariaceae	0	5	NL	NL	SE5	G?	
X		FO	Veronica officinalis	<i>Gypsy-weed</i>	Scrophulariaceae	0	5	NL	NL	SE5	G5	
	X	FO	Viola labradorica	<i>Labrador Violet</i>	Violaceae	3	0	NL	NL	S4S5	G5	
	X	FO	Viola pubescens var. pubescens	<i>Downy Yellow Violet</i>	Violaceae	4	3	NL	NL	S5	G5	
X	X	GR	Agrostis gigantea	<i>Redtop</i>	Poaceae	0	0	NL	NL	SE5	G4G5	
	X	GR	Agrostis stolonifera	<i>Creeping Bentgrass</i>	Poaceae	0	-3	NL	NL	S5	G5	
X		GR	Bromus inermis	<i>Awnless Brome</i>	Poaceae	0	5	NL	NL	SE5	G4G5	
	X	GR	Calamagrostis canadensis	<i>Canada Blue-joint</i>	Poaceae	4	-5	NL	NL	S5	G5	

APPENDIX 5. VASCULAR PLANT LIST
 Dundalk Municipal Roads By-Pass & Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A
 AA16-031A

AA ¹	STANTEC ²	PLANT TYPE ³	COMMON NAME	SCIENTIFIC NAME	FAMILY	CC ⁴	CW ⁵	SARO ⁶	SARA ⁷	S-Rank ⁸	G-Rank ⁹	GREY COUNTY ¹⁰
	X	GR	<i>Dactylis glomerata</i>	<i>Orchard Grass</i>	Poaceae	0	3	NL	NL	SE5	G?	
	X	GR	<i>Elymus virginicus</i>	<i>Virginia Wild Rye</i>	Poaceae	5	-2	NL	NL	S5	G5	
	X	GR	<i>Glyceria grandis</i>	<i>American Mannagrass</i>	Poaceae	5	-5	NL	NL	S4S5	G5	
	X	GR	<i>Glyceria striata</i>	<i>Fowl Manna-grass</i>	Poaceae	3	-5	NL	NL	S4S5	G5	
	X	GR	<i>Leersia oryzoides</i>	<i>Rice Cutgrass</i>	Poaceae	3	-5	NL	NL	S5	G5	
X	X	GR	<i>Phalaris arundinacea</i>	<i>Reed Canary Grass</i>	Poaceae	0	-4	NL	NL	S5	G5	
	X	GR	<i>Phleum pratense</i>	<i>Meadow Timothy</i>	Poaceae	0	3	NL	NL	SE5	G?	
	X	GR	<i>Poa compressa</i>	<i>Canada Bluegrass</i>	Poaceae	0	2	NL	NL	SE5	G?	
	X	GR	<i>Poa pratensis</i> ssp. <i>pratensis</i>	<i>Kentucky Bluegrass</i>	Poaceae	0	1	NL	NL	S5	G?	
X		RU	<i>Juncus dudleyi</i>	<i>Dudley's Rush</i>	Juncaceae	1	0	NL	NL	S5	G5	
X	X	RU	<i>Juncus effusus</i>	<i>Soft Rush</i>	Juncaceae	3	-5	NL	NL	S5	G5T?	
X	X	RU	<i>Juncus tenuis</i>	<i>Path Rush</i>	Juncaceae	0	0	NL	NL	S5	G5	
X		SE	<i>Carex aquatilis</i>	<i>Water Sedge</i>	Cyperaceae	7	-5	NL	NL	S5	G5	
	X	SE	<i>Carex arctata</i>	<i>Black Sedge</i>	Cyperaceae	5	5	NL	NL	S5	G5?	
X	X	SE	<i>Carex bebbii</i>	<i>Bebb's Sedge</i>	Cyperaceae	3	-5	NL	NL	S5	G5	
X		SE	<i>Carex flava</i>	<i>Yellow Sedge</i>	Cyperaceae	5	-5	NL	NL	S5	G5	
X		SE	<i>Carex gracillima</i>	<i>Graceful Sedge</i>	Cyperaceae	4	3	NL	NL	S5	G5	
X		SE	<i>Carex granularis</i>	<i>Meadow Sedge</i>	Cyperaceae	3	-4	NL	NL	S5	G5	
X	X	SE	<i>Carex intumescens</i>	<i>Bladder Sedge</i>	Cyperaceae	6	-4	NL	NL	S5	G5	
X	X	SE	<i>Carex lacustris</i>	<i>Lake-bank Sedge</i>	Cyperaceae	5	-5	NL	NL	S5	G5	
X		SE	<i>Carex leptonevia</i>	<i>Finely-nerved Sedge</i>	Cyperaceae	5	0	NL	NL	S4	G4	
X		SE	<i>Carex pennsylvanica</i>	<i>Pennsylvania Sedge</i>	Cyperaceae	5	5	NL	NL	S5	G5	
	X	SE	<i>Carex retrorsa</i>	<i>Retorse Sedge</i>	Cyperaceae	5	-5	NL	NL	S5	G5	
X	X	SE	<i>Carex stipata</i>	<i>Stalk-grain Sedge</i>	Cyperaceae	3	-5	NL	NL	S5	G5	
X	X	SE	<i>Carex vulpinoidea</i>	<i>Fox Sedge</i>	Cyperaceae	3	-5	NL	NL	S5	G5	
X	X	SE	<i>Scirpus atrovirens</i>	<i>Dark-green Bulrush</i>	Cyperaceae	3	-5	NL	NL	S5	G5?	
X	X	SE	<i>Scirpus cyperinus</i>	<i>Cottongrass Bulrush</i>	Cyperaceae	4	-5	NL	NL	S5	G5	
X	X	SH	<i>Amelanchier</i> sp.	<i>Serviceberry</i> sp.	Rosaceae							
X	X	SH	<i>Cornus alternifolia</i>	<i>Alternate-leaved Dogwood</i>	Cornaceae	6	5	NL	NL	S5	G5	
	X	SH	<i>Cornus foemina</i>	<i>Gray Dogwood</i>	Cornaceae	1	1	NL	NL	S5	G5	✓
X	X	SH	<i>Cornus stolonifera</i>	<i>Red-osier Dogwood</i>	Cornaceae	2	-3	NL	NL	S5	G5	
X		SH	<i>Corylus cornuta</i>	<i>Beaked Hazelnut</i>	Betulaceae	5	5	NL	NL	S5	G5	

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 Dundalk Municipal Roads By-Pass & Waste Water Treatment Facility Expansion
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AA13-140A
 AA16-031A

AA ¹	STANTEC ²	PLANT TYPE ³	COMMON NAME	SCIENTIFIC NAME	FAMILY	CC ⁴	CW ⁵	SARO ⁶	SARA ⁷	S-Rank ⁸	G-Rank ⁹	GREY COUNTY ¹⁰
	X	SH	Crataegus sp.	<i>Hawthorn sp.</i>	Rosaceae							
	X	SH	Diervilla lonicera	<i>Northern Bush-honeysuckle</i>	Caprifoliaceae	5	5	NL	NL	S5	G5	
	X	SH	Hamamelis virginiana	<i>American Witch-hazel</i>	Hamamelidaceae	6	3	NL	NL	S5	G5	✓
	X	SH	Lonicera tatarica	<i>Tartarian Honeysuckle</i>	Caprifoliaceae	0	3	NL	NL	SE5	G?	
	X	SH	Physocarpus opulifolius	<i>Eastern Ninebark</i>	Rosaceae	5	-2	NL	NL	S5	G5	
X	X	SH	Prunus virginiana	<i>Choke Cherry</i>	Rosaceae	2	3	NL	NL	S4	G5	
	X	SH	Rhamnus alnifolia	<i>Alderleaf Buckthorn</i>	Rhamnaceae	7	-5	NL	NL	S5	G5	
X	X	SH	Rhamnus cathartica	<i>Buckthorn</i>	Rhamnaceae	0	3	NL	NL	SE5	G?	
X		SH	Ribes americanum	<i>Wild Black Currant</i>	Grossulariaceae	4	-3	NL	NL	S5	G5	
	X	SH	Ribes hirtellum	<i>Smooth Gooseberry</i>	Grossulariaceae	6	-3	NL	NL	S5	G5	
X		SH	Ribes triste	<i>Swamp Red Currant</i>	Grossulariaceae	6	-5	NL	NL	S5	G5	
X		SH	Rubus allegheniensis	<i>Blackberry</i>	Rosaceae	2	2	NL	NL	S5	G5	
X		SH	Rubus idaeus ssp. strigosus	<i>Wild Red Raspberry</i>	Rosaceae	0	-2	NL	NL	S5	G5	
X	X	SH	Rubus pubescens	<i>Dwarf Raspberry</i>	Rosaceae	4	-4	NL	NL	S5	G5	
X	X	SH	Salix discolor	<i>Pussy Willow</i>	Salicaceae	3	-3	NL	NL	S5	G5	
X		SH	Salix eriocephala	<i>Heart-leaved Willow</i>	Salicaceae	4	-3	NL	NL	S5	G5	
X		SH	Salix lucida	<i>Shining Willow</i>	Salicaceae	3	-3	NL	NL	S5	G5	
	X	SH	Salix petiolaris	<i>Meadow Willow</i>	Salicaceae	3	-4	NL	NL	S5	G5	
	X	SH	Sambucus canadensis	<i>Common Elderberry</i>	Caprifoliaceae	5	-2	NL	NL	S5	G5	
X	X	SH	Spiraea alba	<i>Narrow-leaved Meadow-sweet</i>	Rosaceae	3	-4	NL	NL	S5	G5	
	X	SH	Syringa vulgaris	<i>Common Lilac</i>	Oleaceae	0	5	NL	NL	SE5	G?	
	X	SH	Toxicodendron radicans	<i>Climbing Poison Ivy</i>	Anacardiaceae	2	0	NL	NL	S5	G5T	
X		SH	Toxicodendron rydbergii	<i>Rydberg's Poison Ivy</i>	Anacardiaceae	0	0	NL	NL	S5	G5	
	X	SH	Viburnum lentago	<i>Nannyberry</i>	Caprifoliaceae	4	-1	NL	NL	S5	G5	
X		SH	Viburnum opulus	<i>European Highbush-Cranberry</i>	Caprifoliaceae	0	-3	NL	NL	SE4	G5	
	X	SH	Viburnum trilobum	<i>American Highbush-Cranberry</i>	Caprifoliaceae	5	-3	NL	NL	S5	G5	
X	X	TR	Abies balsamea	<i>Balsam Fir</i>	Pinaceae	5	-3	NL	NL	S5	G5	
X	X	TR	Acer negundo	<i>Box Elder</i>	Aceraceae	0	-2	NL	NL	S5	G5	
X	X	TR	Acer rubrum	<i>Red Maple</i>	Aceraceae	4	0	NL	NL	S5	G5	
X	X	TR	Acer saccharum ssp. saccharum	<i>Sugar Maple</i>	Aceraceae	4	3	NL	NL	S5	G5	

APPENDIX 5. VASCULAR PLANT LIST

Dundalk Municipal Roads By-Pass & Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A

AA16-031A

AA ¹	STANTEC ²	PLANT TYPE ³	COMMON NAME	SCIENTIFIC NAME	FAMILY	CC ⁴	CW ⁵	SARO ⁶	SARA ⁷	S-Rank ⁸	G-Rank ⁹	GREY COUNTY ¹⁰
	X	TR	Acer x freemanii	<i>(Acer rubrum X Acer saccharinum)</i>	Aceraceae			NL	NL	S4	G?	
X	X	TR	Betula alleghaniensis	<i>Yellow Birch</i>	Betulaceae	6	0	NL	NL	S5	G5	
X	X	TR	Betula papyrifera	<i>Paper Birch</i>	Betulaceae	2	2	NL	NL	S5	G5	
X	X	TR	Fagus grandifolia	<i>American Beech</i>	Fagaceae	6	3	NL	NL	S4	G5	
X	X	TR	Fraxinus nigra	<i>Black Ash</i>	Oleaceae	7	-4	NL	NL	S5	G5	
X	X	TR	Fraxinus pennsylvanica	<i>Green Ash</i>	Oleaceae	3	-3	NL	NL	S5	G5	
X	X	TR	Larix laricina	<i>American Larch</i>	Pinaceae	7	-3	NL	NL	S5	G5	
X	X	TR	Ostrya virginiana	<i>Eastern Hop-hornbeam</i>	Betulaceae	4	4	NL	NL	S5	G5	
X	X	TR	Picea glauca	<i>White Spruce</i>	Pinaceae	6	3	NL	NL	S5	G5	
X		TR	Picea mariana	<i>Black Spruce</i>	Pinaceae	8	-3	NL	NL	S5	G5	
X	X	TR	Pinus strobus	<i>Eastern White Pine</i>	Pinaceae	4	3	NL	NL	S5	G5	
	X	TR	Pinus sylvestris	<i>Scotch Pine</i>	Pinaceae	0	5	NL	NL	SE5	G?	
X	X	TR	Populus balsamifera	<i>Balsam Poplar</i>	Salicaceae	2	-3	NL	NL	S5	G5T?	
X	X	TR	Populus tremuloides	<i>Trembling Aspen</i>	Salicaceae	2	0	NL	NL	S5	G5	
X	X	TR	Prunus serotina	<i>Wild Black Cherry</i>	Rosaceae	3	3	NL	NL	S5	G5	
X		TR	Salix alba	<i>White Willow</i>	Salicaceae	0	-3	NL	NL	SE4	G5	
	X	TR	Salix amygdaloides	<i>Peach-leaved Willow</i>	Salicaceae	6	-3	NL	NL	S5	G5	
X	X	TR	Thuja occidentalis	<i>Eastern White Cedar</i>	Cupressaceae	4	-3	NL	NL	S5	G5	
X		TR	Tilia americana	<i>American Basswood</i>	Tiliaceae	4	3	NL	NL	S5	G5	
X	X	TR	Ulmus americana	<i>American Elm</i>	Ulmaceae	3	-2	NL	NL	S5	G5?	
	X	VI	Clematis virginiana	<i>Virginia Virgin-bower</i>	Ranunculaceae	3	0	NL	NL	S5	G5	
X	X	VI	Echinocystis lobata	<i>Wild Cucumber</i>	Cucurbitaceae	3	-2	NL	NL	S5	G5	✓
X	X	VI	Vicia cracca	<i>Tufted Vetch</i>	Fabaceae	0	5	NL	NL	SE5	G?	
	X	VW	Parthenocissus inserta	<i>Inserted Virginia Creeper</i>	Vitaceae	3	3	NL	NL	S5	G5	
X	X	VW	Solanum dulcamara	<i>Climbing Nightshade</i>	Solanaceae	0	0	NL	NL	SE5	G?	
X	X	VW	Vitis riparia	<i>Riverbank Grape</i>	Vitaceae	0	-2	NL	NL	S5	G5	

LEGEND

1	AA: Botanical data collected by Aboud & Associates Inc. during 2015
2	Stantect: Botanical data collected by Credit River Conservation from 2010 to 2011
3	Plant Types: AL = Algae; FE = Fern; FO = Forb; GR = Grass; LC = Lichen; LV = Liverwort; MO = Moss; RU = Rush; SE = Sedge; SH = Shrub; TR = Tree; VI = Herbaceous vine; VW = Woody vine.
4	CC: Coefficient of Conservatism reflects a species' fidelity to a specific habitat. Range from 0 to 10; 10 = very conservative, not likely in disturbed habitats, 1 = least conservative, likely found in a broad range of habitats.
5	CW: Coefficient of Wetness reflects a species' affinity for wet soil conditions. Range from -5 to 5; -5 = obligate wetland species, 5 = obligate upland species.
6	SARO: Status under the Provincial Endangered Species Act, listed on the Species at Risk in Ontario (SARO) list. In order of severity, statuses include: EXP = Extirpated; END = Endangered; THR = Threatened; SC = Special Concern; NL = Not Listed.
7	SARA: Status under the National Species at Risk Act (SARA), assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In order of severity, statuses include: EXP = Extirpated; END = Endangered; THR = Threatened; SC = Special Concern; NS = No Status; NL = Not Listed
8	S-Rank: Provincial rarity rank. Range from S1 to S5; S1 = Extremely rare, S5 = Very common. NR = Unranked; U = Unrankable.
9	G-Rank: Global rarity rank. Range from G1 to G5; G1 = Extremely rare, G5 = Very common. H = Historic; U = Uncertain; X = Extinct; ? = Inexact rank; Q = Taxonomic status questionable; T = Applies to subspecies or variety; Nothing = Rank not yet obtained.
10	Grey County: Rare Species within Grey County as identified by Oldham 1993, MNR 1993. Ontario Ministry of Natural Resources. Distribution and Status of the Vascular Plants of Southwestern Ontario.

Station	Conducted by	Date	Species					Significant (MNR, 2015)
			Northern Leopard Frog	Spring Peeper	Green Frog	Wood Frog	Grey Treefrog	
A	A&A	April 13, 2015						No
	Stantec	May 27, 2011		+				
	A&A	June 26, 2014			1-3*			
B	A&A	April 13, 2015		3*				Yes
	Stantec	May 27, 2011	1	3a+	1			
	A&A	June 26, 2014						
C	A&A	April 13, 2015		1-1*		1-2*		No
	Stantec	May 27, 2011						
	A&A	June 26, 2014			1-7			
D	A&A	April 13, 2015		1-4*				No
	Stantec	May 27, 2011		1-1+				
	A&A	June 26, 2014					1-2*	
E	A&A	April 13, 2015		1-3*				No
	Stantec	May 27, 2011		1-1				
	A&A	June 26, 2014			1-2		1-1	
F	A&A	April 13, 2015		1-2*				No
	Stantec	May 27, 2011	1	+				
	A&A	June 26, 2014			1-2*		1-3*	
G	A&A	April 13, 2015		2-7*				No
	Stantec	May 27, 2011	+'	+				
	A&A	June 26, 2014			1-2		1-3	
H	A&A	April 13, 2015		3*				No
	Stantec	May 27, 2011	1+	+				
	A&A	June 26, 2014					1-1	
I	A&A	April 13, 2015		3		1-1		Yes
	Stantec	May 27, 2011	1	1-1+				
	A&A	June 26, 2014			1-5			
J	A&A	April 13, 2015		3*		1-1*		No
	Stantec	May 27, 2011		+				
	A&A	June 26, 2014			1-2*		*	

Amphibian Call Level codes:

- 1 - # :Calls not simultaneous, number of individuals can be accurately counted
- 2 - # :Some calls simultaneous, number of individuals can be reliably estimated
- 3 :Full chorus, calls continuous and overlapping, number of individuals cannot reliably be estimated

*Denotes species heard calling outside 100m

+ Denotes species heard calling outside 100m

References: MNR, 2015. Ontario ministry of Natural Resources and Forestry. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E

APPENDIX 7. GRASSLAND BIRD RESULTS
 Dundalk Industrial Access Road Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A
 AA16-031A

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	S_RANK	G_RANK	Area Sensitive (SWHTG,2000)	PIF (BCR 13)	GRCA (2015)	PC1 #	HBE	PC2 #	HBE	PC3 #	HBE	PC4 #	HBE	PC6 #	HBE	PC7 #	HBE	Overall Highest Breeding Evidence			
American Bittern	<i>Botaurus lentiginosus</i>				S4B	G4	✓		✓	0		0		0	H*	0		0		0		0	Observed		
Great Blue Heron	<i>Ardea herodias</i>				S4	G5				0		0		0		0		0		0	X	0	Observed		
Wood Duck	<i>Aix sponsa</i>				S5	G5				0		0		0		0		0	X	0		0	Observed		
Mallard	<i>Anas platyrhynchos</i>				S5	G5				0		0		0		0	X	1	X	0		0	Observed		
Killdeer	<i>Charadrius vociferus</i>				S5B,S5N	G5				0		0		1	A	0		0		0		0	Probable		
Ring-billed Gull	<i>Larus delawarensis</i>				S5B,S4N	G5				0		0		0		0		0		3	X	0	Observed		
Belted Kingfisher	<i>Megaceryle alcyon</i>				S4B	G5	✓			0		0		0		0		1	X	0		0	Observed		
Northern Flicker	<i>Colaptes auratus</i>				S4B	G5	✓			0		0		1	H	0		0	T	0	T*	0	Probable		
Pileated Woodpecker	<i>Dryocopus pileatus</i>				S5	G5	✓	✓		0		0		0		0		1	T	0		0	Probable		
Least Flycatcher	<i>Empidonax minimus</i>				S4B	G5	✓	✓		0		1	S	0		0		0		0		0	Possible		
Eastern Kingbird	<i>Tyrannus tyrannus</i>				S4B	G5	✓	✓		1	H	0		0		2	T	0		0		0	Probable		
Tree Swallow	<i>Tachycineta bicolor</i>				S4B	G5				0		0		1	H	0		0		0		0	Possible		
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>				S4B	G5		✓		0		0		0		6	X	0		0		0	Observed		
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>				S4B	G5		✓		0		0		0		0		0		1	X	0	Observed		
Barn Swallow	<i>Hirundo rustica</i>	THR	THR		S4B	G5		✓		1	X	0		0		1	X	0		0		0	Observed		
Blue Jay	<i>Cyanocitta cristata</i>				S5	G5				2	A	0		0		0		1	H	0		0	Probable		
American Crow	<i>Corvus brachyrhynchos</i>				S5B	G5				1	H	1	H	2	A	3	H	2	H	4	A	0	0	Probable	
House Wren	<i>Troglodytes aedon</i>				S5B	G5				1	T	0		0		0		0		0		0	0	Probable	
American Robin	<i>Turdus migratorius</i>				S5B	G5				1	S	0	S*	0		1	S	0		0		0	0	Possible	
Gray Catbird	<i>Dumetella carolinensis</i>				S4B	G5		✓		0		0		0	S	0		0		0		0	0	Possible	
Cedar Waxwing	<i>Bombycilla cedrorum</i>				S5B	G5				0		0		1	H	0		0		0		0	0	Possible	
European Starling	<i>Sturnus vulgaris</i>				SNA	G5				2	H	0		3	FY	1	A	0		1	H	0	0	Confirmed	
Warbling Vireo	<i>Vireo gilvus</i>				S5B	G5				1	S	0		0	S	0		0		0		0	0	Possible	
Yellow Warbler	<i>Dendroica petechia</i>				S5B	G5				0		0		1	S	0		0		0		1	S	Possible	
Common Yellowthroat	<i>Geothlypis trichas</i>				S5B	G5				1	S	0		1	S	1	S	1	S	1	T	0	0	Probable	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>				S4B	G5	✓			0		0		0		0		0	S	0		0	0	Possible	
Indigo Bunting	<i>Passerina cyanea</i>				S4B	G5				0		0		0		1	S	0		0		0	0	Possible	
Chipping Sparrow	<i>Spizella passerina</i>				S5B	G5				0		0		0		0		0		1	T	0	0	Probable	
Savannah Sparrow	<i>Passerculus sandwichensis</i>				S4B	G5	✓	✓	✓	3	A	4	A	3	A	4	T	3	A	3	A	0	0	0	Probable
Song Sparrow	<i>Melospiza melodia</i>				S5B	G5				2	P	1	A	1	S	1	S	1	S	1	S	0	0	0	Probable
Swamp Sparrow	<i>Melospiza georgiana</i>				S5B	G5		✓		0		0		0		0		0		2	S	0	0	Possible	

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	S_RANK	G_RANK	Area Sensitive (SWHTG,2000)	PIF (BCR 13)	GRCA (2015)	PC1 # HBE	PC2 # HBE	PC3 # HBE	PC4 # HBE	PC6 # HBE	PC7 # HBE	Overall Highest Breeding Evidence
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR		S4B	G5	✓	✓	✓	6 AE	5 FY	7 FY	2 D	6 D	1 D	Confirmed
Red-winged Blackbird	<i>Agelaius phoeniceus</i>				S4	G5				0	5 A	8 FY	2 A	0	3 FY	Confirmed
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR		S4B	G5	✓	✓	✓	2 A	2 T	1 A	1 A	0	1 A	Probable
Common Grackle	<i>Quiscalus quiscula</i>				S5B	G5				0	0	0	0	0	4 H	Possible
American Goldfinch	<i>Carduelis tristis</i>				S5B	G5			✓	1 H	0	0	0	1 H	0	Possible

* indicates heard outside 100m

Legend:

SARO: Species at Risk Ontario
 COSEWIC: Committee on the Status of Endangered Wildlife in Canada
 SARA: Species at Risk Act
 ESA: Endangered Species Act
 END: Endangered
 THR: Threatened
 SC: Special Concern
 NAR: Not At Risk
 NL: Not listed
 DD: Data Deficient
 HBE: Highest Breeding Evidence over 2 surveys
 PIF: Priority species in BCR13
 HBE: Highest Breeding Evidence

G-Rank:
 G1: Extremely rare globally
 G1G2: Extremely rare to very rare globally
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 G2G3: Very rare to uncommon globally
 G3: Rare to uncommon globally
 G3G4: Rare to common globally
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 SNR: Unranked
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GRCA

✓: Conservation Priority

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	S_RANK	G_RANK	Area Sensitive (SWHTG,2000)	PIF (BCR 13)	GRCA (2015)	PC1 # HBE	PC2 # HBE	PC3 # HBE	PC4 # HBE	PC6 # HBE	PC7 # HBE	Overall Highest Breeding Evidence
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Breeding Evidence Codes

Observed

X-no breeding evidence

FO-flyover

Possible

H-Suitable habitat

S-Singing male

Probable

P-PairD-Display

T-Territory (2 visits)

D-Display

V-Visiting nest

A-Agitated

B-Broodpatch

N-Nest building or excavation

Confirmed

DD-Distracton display

NU-Used nest

FY-Fledged young

AE-Adult entering/leaving nest

FS-Adult carrying fecal sac

CF-Adult carrying food

NE-Nest with eggs

NY-Nest with young

References:

1. Ontario Partners in Flight (PIF). 2008. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), Priorities, Objectives and Recommended Actions. Environment Canada (Ontario Region) and Ontario Ministry of Natural Resources. Final Draft, November, 2008.
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COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	S-Rank	G-Rank	GRCA(web)	Area Sensitive	PIF priority (BCR 13)
BIRDS									
Wild Turkey	<i>Meleagris gallopavo</i>				S5	G5			
Pileated Woodpecker	<i>Dryocopus pileatus</i>				S5	G5	✓	✓	
American Crow	<i>Corvus brachyrhynchos</i>				S5B	G5			
Black-capped Chickadee	<i>Poecile atricapillus</i>				S5	G5	✓		
Common Redpoll	<i>Carduelis flammea</i>				S4B	G5			
MAMMALS									
Eastern Cottontail	<i>Sylvilagus floridanus</i>				S5	G5			
Beaver	<i>Castor canadensis</i>				S5	G5			
Coyote	<i>Canis latrans</i>				S5	G5			
Red Fox	<i>Vulpes vulpes</i>				S5	G5			
Long-tailed Weasel	<i>Mustela frenata</i>				S4	G5			
White-tailed Deer	<i>Odocoileus virginianus</i>				S5	G5			

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COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	S-Rank	G-Rank	Area Sensitive species (SWHTG 2000)	PIF priority (BCR 13)	GRCA (2015)	DATES OBSERVED (2015)
INSECTS										
Monarch Butterfly	<i>Danaus plexippus</i>	SC	SC	SC	S2N,S4B	G4T3				July 7, 2016 in Hay Field
SNAKES										
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>				S5	G5T5				June 14, June 16, October 10, 2015
TURTLES										
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	SC	S3	G5T5				June 14, 2015
BIRDS										
Green Heron	<i>Butorides virescens</i>				S4B	G5			✓	October 10, 2015
American Bittern	<i>Botaurus lentiginosus</i>				S4B	G4	✓		✓	October 10, 2015
Canada Goose	<i>Branta canadensis</i>				S5	G5			✓	April 13, October 10, 2015
Bufflehead	<i>Bucephala albeola</i>				S4	G5				October 10, 2015
Red-tailed Hawk	<i>Buteo jamaicensis</i>	NAR	NAR		S5	G5				October 10, 2015
Ruffed Grouse	<i>Bonasa umbellus</i>				S4	G5			✓	October 10, 2015
American Woodcock	<i>Scolopax minor</i>				S4B	G5			✓	April 13, June 16, 2015
Eastern Wood-pewee	<i>Contopus virens</i>	SC	SC		S4B	G5		✓		June 16, 2015
Tree Swallow	<i>Tachycineta bicolor</i>				S4B	G5				October 10, 2015
Blue Jay	<i>Cyanocitta cristata</i>				S5	G5				October 10, 2015
American Crow	<i>Corvus brachyrhynchos</i>				S5B	G5				October 10, 2015
Common Raven	<i>Corvus corax</i>				S5	G5				October 10, 2015
Golden-crowned Kinglet	<i>Regulus satrapa</i>				S5B	G5			✓	October 10, 2015
Red-winged Blackbird	<i>Agelaius phoeniceus</i>				S4	G5				October 10, 2015
Wilson's Snipe	<i>Gallinago delicata</i>				S5B	G5			✓	July 4, 2016
Savannah Sparrow	<i>Passerculus sandwichensis</i>				S4B	G5	✓	✓	✓	July 4, 2016
American Robin	<i>Turdus migratorius</i>				S5B	G5				July 4, 2016
Killdeer	<i>Charadrius vociferus</i>				S5B,S5N	G5				July 4, 2016
Mallard	<i>Anas platyrhynchos</i>				S5	G5				May 31, 2016
Sora	<i>Porzana carolina</i>				S4B	G5			✓	May 31, 2016
MAMMALS										
Red Squirrel	<i>Tamiasciurus hudsonicus</i>				S5	G5				June 14, 2015
Beaver	<i>Castor canadensis</i>				S5	G5				June 14, 2015
Porcupine	<i>Erethizon dorsatum</i>				S5	G5				May 31, 2016
White-Tailed Deer	<i>Odocoileus virginianus</i>				S5	G5				May 31, 2016
Eastern Chipmunk	<i>Tamias striatus</i>				S5	G5				July 7, 2016

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APPENDIX 10. SIGNIFICANT WILDLIFE HABITAT ASSESSMENT
 Dundalk Industrial Access Road & Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A
 AA16-031A

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
SEASONAL CONCENTRATION AREAS OF ANIMALS								
1	Waterfowl stopover and Staging Areas (terrestrial)	- Fields with Sheet water in spring (incl. agricultural)	- Mixed species aggregations of 100 or more individuals confirms SWH	flooded field ecosite and 100-300m radius is the SWH	Annual Row crops (OAGM1) in the southeast of the study area are flooded in spring and may provide habitat for staging and stopover.	yes	No Surveys completed, no aggregations of waterfowl observed incidentally.	unknown
2	Waterfowl Stopover and Staging (Aquatic)	- Ponds, marshes, lakes, bays, coastal inlets and watercourses and reservoirs - SWTP & SWMP are not SWH	- Aggregations of 100 or more listed species for 7 days (ie. >700 waterfowl use days) confirms SWH	Aquatic ecosite and 100m radius is the SWH	Although sewage treatment ponds on site may provide this type of habitat, they are not considered SWH.	No	None required.	No
3	Shorebird Migratory stopover	- Shorelines of Lakes, rivers, wetlands, beaches, bars; seasonally flooded, muddy and un-vegetated shoreline habitat	- 3 or more listed species and >1000 shorebird use days, or >100 whimbrel, confirms SWH	Shoreline ecosite and 100m radius is the SWH	No Habitat matching Criteria identified in Study Area, >5km from any Lake Ontario	No	Fall migration survey completed.	No
4	Raptor Wintering Area	- Combination of upland field and woodland habitat >20ha total (includes >15ha upland field) - least disturbed sites, idle, fallow or lightly grazed field/meadow best	- 1 or more Short-eared Owl, or, at least 10 individuals and 2 listed species for a minimum of 20 days, and 3 of 5 years, confirms SWH	Ecosite communities (field and woodland) is the SWH	Marginal habitat identified in Study Area, open hayfield (OAGM2) in eastern portion of the study area is 14ha in size and surrounded by treed habitat >5ha in size	Yes-marginal	Two winter wildlife surveys were conducted of the site, and found snow depths to be restrictive to winter raptor wintering. No raptors of sufficient numbers identified	No
5	Bat Hibernacula	- Caves, mine shafts, underground foundations, karsts buildings are not SWH	- All sites with confirmed hibernating bats, confirms SWH	Ecosite and 200m radius is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No

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6	Bat Maternity Colony	<ul style="list-style-type: none"> - All forested ecosites, FOD, FOC, FOM, SWD, SWM, SWC with >10/ha trees (>25cm DBH) in early stages of decay (class 1-3) - buildings are not SWH 	<ul style="list-style-type: none"> - >10 Big Brown Bats, >20 Little Brown Myotis, >5 adult female Silver-haired Bats confirms SWH 	Entire woodland or forest stand ELC ecosite containing colony is the SWH	Forested ecosites present in Study area with trees >25cm DBH.	Yes	Studies recommended pre-construction in areas where tree removal/damage to occur in candidate habitat.	unknown
7	Turtle Wintering Area	<ul style="list-style-type: none"> - Areas with permanent water deep enough not to freeze, with mud/soft substrates 	<ul style="list-style-type: none"> - 5 over-wintering Midland Painted Turtles, 1 or more Northern Map Turtle or Snapping Turtle confirms SWH 	Mapped ELC ecosite, or deep pool element where turtles overwinter is the SWH	Open water marsh community(SAF_1-3), east of study area may provide turtle overwintering habitat	Yes	No turtles identified incidentally or observed in community during spring and summer surveys. No anticipated affects-outside study area	no
8	Reptile Hibernaculum	<ul style="list-style-type: none"> - Sites below the frost line; rock barren, crevice and cave, talus, alvar, rock piles, slopes, stone fences and crumbling foundations 	<ul style="list-style-type: none"> - Presence of hibernacula with minimum 5 individuals of 1 snake species/ individuals of 2 or more species confirms SWH - Congregations of a minimum of 5 snakes of 1 species/ individuals of 2 or more snake species, near potential hibernacula on sunny warm days in spring and fall confirms SWH 	Feature hibernacula is located in, and 30m radius is the SWH	2 candidate hibernacula features identified in study area (rock piles in OAGM2 community identified by Stantec and old foundation/rubble pile in WODM4-3 Community to the south-west of industrial development - unknown depth)	yes	No surveys complete, pre-construction emergence surveys recommended if route is within 120m of candidate habitat.	unknown
9	Colonially-nesting Bird Habitat (cliff/bank)	<ul style="list-style-type: none"> - Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, barns 	<ul style="list-style-type: none"> - 1 or more nest sites with 8 or more Cliff Swallow or, 50 Bank Swallow and Rough-winged Swallow pairs during the breeding season. 	Colony and 50m radius around peripheral nest is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
10	Colonially-nesting Bird Habitat (Tree/shrub)	<ul style="list-style-type: none"> - Live or dead standing trees in wetlands, lakes, islands and peninsulas, occasionally shrubby and emergent vegetation 	<ul style="list-style-type: none"> - 5 or more active Great-blue Heron or other listed species nests 	Edge of the colony plus minimum 300m radius, or extent of the forest ecosite, or entire island <15ha is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No

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11	Colonially-nesting Bird Habitat (Ground)	- Rocky islands or peninsulas within a lake or large river(natural or artificial)	- >25 active nests of Herring Gull, Ring-billed Gull, >5 active nests of Common Tern, or >2 active nests of Caspian Tern. 5 or more pairs of Brewer's Blackbird. Any active nesting colony of Little Gull, Great Black-backed Gull.	Edge of colony plus min 150m radius or extent of ELC ecosite, or island <3ha is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
12	Migratory Butterfly Stopover Area	- At least 10ha, with undisturbed field/meadow and forest or woodland edge habitat present, within 5km of Lake Ontario.	- Presence of Monarch use days >5000 or >3000 where there is a mix of Monarch with Painted Ladies or White Admirals	Field/meadow and forest/woodland is the SWH	No Habitat matching Criteria identified in Study Area, >5km from Lake Ontario	No	Fall migration survey completed.	No
13	Land bird Migratory Stopover Area	- Woodlots >5ha in size within 5km of lake Ontario	- Use by >200 birds/day, with >35species, with at least 10sp recorded on 5 different survey dates.	Woodlot is the SWH	No Habitat matching Criteria identified in Study Area, >5km from Lake Ontario	No	Fall migration survey completed.	No
14	Deer Yarding Areas	- ELC communities providing Thermal cover (FOM,FOC,SWM,SWC, CUP2, CUP3, FOD3, CUT)	- Deer yards are managed by MNRF, available through district offices and LIO.	LIO mapping	No Deer yarding areas identified on LIO Mapping	No	None required.	No
15	Deer Winter Congregation Areas	- All forested ecosites >100ha - Conifer Plantations <50ha may be used	- Deer management is the responsibility of the MNRF - Contact MNRF or LIO for known deer winter areas.	LIO mapping	No Deer Winter Congregation areas identified on LIO Mapping	No	None required.	No
RARE VEGETATION COMMUNITIES								
16	Cliffs & Talus Slopes	- Cliff: vertical to near vertical bedrock >3m in height - Talus slope: rock rubble at the base of a cliff made up of coarse rocky debris	- Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	Area of ELC sites: TAO, TAS, TAT, CLO, CLS, CLT	No Habitat matching Criteria identified in Study Area	No	None required	No
17	Sand Barren	- Exposed, sparsely vegetated & caused by lack of moisture, fires and erosion.	- area >0.5ha in size - Confirm any ELC vegetation Type for Sand Barren - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No

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18	Alvar	- Level, mostly unfractured calcareous bedrock feature, overlain by a thin veneer or soil	- area >0.5ha in size - Field Studies that identify four of the five Alvar Indicator Species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
19	Old Growth Forest	- >30ha forests with at least 10ha interior habitat and multi-layered canopy	- Dominant Tree Species >140 years old - No recognizable signs forestry practices (old stumps)	Area of ELC ecosite is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
20	Savannah	- Tall Grass Prairie Habitat with 25%-60% Tree cover - Remnant sites such as Railway Right of ways are not SWH	- No minimum size, and must be restored to a natural state. - Confirm one or more savannah indicator species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
21	Tallgrass Prairie	- Ground cover dominated by prairie grasses with <25% tree cover - Remnant sites such as Railway Right of ways are not SWH	- No minimum size, and must be restored to a natural state. - Confirm one or more prairie indicator species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
22	Other Rare Vegetation Communities	- All Provincially Rare S1, S2, S3 Vegetation Communities (Appendix M of SWHTG)	- Field Studies Confirming ELC vegetation type is a rare vegetation community	Area of ELC ecosite is the SWH	No communities identified on site are S1-S3 communities	No	None required	No
SPECIALIZED HABITAT FOR WILDLIFE								
23	Waterfowl Nesting Areas	- Upland Habitat, adjacent to Wetland ELC ecosites (except SWC, SWM) - Extends 120m from a wetland (>0.5ha) and any small wetlands (<0.5ha) within a cluster of at least 3 - Upland area at least 120m wide	- Presence of 3 or more nesting pairs of listed species excluding Mallards - Presence of 10 or more nesting pairs including mallards - Any active Black Duck nesting site	SWH may be greater than or less than 120m from the wetland edge and must provide enough habitat for waterfowl to successfully nest	Treed communities adjacent all wetlands/ponds, may provide nesting habitat	no	None required	No

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#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
24	Bald Eagle or Osprey Nesting, Foraging and Perching Habitat	<ul style="list-style-type: none"> - Forest communities, adjacent to riparian areas - Osprey nests usually at top of tree - Bald Eagle nest usually in super canopy tree in a notch within canopy 	<ul style="list-style-type: none"> - Studies confirm one or more active Bald Eagle or Osprey nest - Alternate nests included in SWH - Nests must be used annually, if found inactive, must be known inactive at least 3 years, or suspected unused for 5 years if unknown 	Active nest plus 300m for Osprey Active nest plus 400-800m for Bald Eagle	No Habitat matching Criteria identified in Study Area	No	None required	No
25	Woodland Raptor Nesting Habitat	<ul style="list-style-type: none"> - Forested communities, forested swamp communities and cultural Plantations - Natural Forested/conifer plantations >30ha with >10ha interior habitat (200m buffer) 	<ul style="list-style-type: none"> - One or more active nest of listed species 	Nest protection radius: <ul style="list-style-type: none"> - Red-Shouldered Hawk, Northern Goshawk 400m - Barred Owl 200m - Broad-winged Hawk, Coopers Hawk 100m - Sharp-shinned Hawk 50 	Forested habitat may provide opportunities for woodland raptor nesting	Yes	No stick nests observed during SWH or Winter Wildlife Surveys	No
26	Turtle Nesting Areas	<ul style="list-style-type: none"> - Exposed Mineral soil (sand or gravel) adjacent (<100m) or within shallow marsh, shallow submerged, shallow floating, bog or fen communities - Located in open sunny areas, away from roads and less prone to predation - Municipal and provincial road shoulders are not SWH. 	<ul style="list-style-type: none"> - Confirm 5 or more nesting Midland Painted Turtles, 1 or more nesting Northern Map Turtle or Snapping Turtle 	Area or sites with exposed mineral soils, plus a radius of 30-100m around the nesting area is the SWH.	No Habitat matching Criteria identified in Study Area	No	None required	No
27	Seeps and Springs	<ul style="list-style-type: none"> - Areas where ground water comes to the surface - Any forested area within the headwaters of a stream or river system 	<ul style="list-style-type: none"> - Confirm site with 2 or more seeps/springs. 	Area of ELC forest ecosite containing seep/spring is the SWH	Seeps and springs possible within forested and wetland communities	Yes	ELC complete	No seeps or springs identified

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28	Amphibian Breeding Habitat (woodland)	<ul style="list-style-type: none"> - Breeding pools within woodlands - Wetland, pond or pool >500m² within or adjacent (<120m) to a woodland. - Woodlands with permanent ponds, or those with water until mid-July more likely to be used. 	<ul style="list-style-type: none"> - Confirm Breeding population of 1 or more listed newt/salamander species, 2 or more of the listed frog species with at least 20 individuals (adults or egg masses), 2 or more of the listed frog species with call code levels of 3. - Wetland adjacent to woodlands includes travel corridor connecting features as SWH. 	Wetland area, plus 230m radius of woodland is the SWH.	Candidate habitat throughout study area, woodland pools, marshes	yes	Amphibian Surveys complete, two candidate SWH are significant	Yes
29	Amphibian Breeding Habitat (Wetland)	<ul style="list-style-type: none"> - Swamp, marsh, fen, bog, open aquatic and shallow aquatic ELC communities. - Typically isolated from woodlands (>120m), but includes larger wetlands with primarily aquatic species (bull frogs) that are adjacent to woodlands. - Wetlands >500m² - Presence of shrubs & logs - Bullfrogs require permanent water bodies and abundant emergent vegetation. 	<ul style="list-style-type: none"> - Confirm Breeding populations of 1 or more listed newt/salamander species, or 2 or more listed frog/toad species with at least 20 individuals (adults or egg masses), or 2 or more listed frog/toad species with a call code level of 3 - Or any wetland with confirmed breeding Bullfrog. 	ELC ecosite and shoreline is the SWH Movement corridors (SWH) must be considered if this habitat is significant	No wetlands >120m from woodland habitat	No	Amphibian surveys complete	No
30	Area-sensitive Breeding Bird Habitat	<ul style="list-style-type: none"> - Habitats where interior breeding birds are breeding - Large mature(>60 years) forest stands or woodlots >30ha - Forest and swamp ELC communities - Interior habitat at least 200m from edge 	<ul style="list-style-type: none"> - Presence of nesting or breeding pairs of 3 or more of the listed species - Any site with Cerulean Warbler or Canada Warbler is SWH 	ELC ecosite is the SWH	No interior habitat (>200m) identified in study area	no	None required	No
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH								

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31	Marsh Bird Breeding Habitat	<ul style="list-style-type: none"> - Some meadow marsh, shallows submerged, shallow floating, mixed shallow floating, fen and bog communities (see SWH Ecoregion guide for specifics) - Nesting occurs in wetlands, all wetland habitat is considered with presence of shallow water with emergent aquatic vegetation - Green heron at edge of water sheltered by shrubs and trees. 	<ul style="list-style-type: none"> - 5 or more nesting pairs of Sedge Wren or Marsh Wren, 1 pair of Sandhill Crane, or breeding by any combination of 5 or more of the listed species - Any Wetland with 1 or more breeding pair Black Tern, Trumpeter Swan, Green Heron or Yellow Rail 	ELC ecosite is the SWH	Habitat possible within 120m of the study area (Cattail Organic Marsh).	Yes	Marsh birds were not observed during breeding bird surveys or incidentally.	No
32	Open Country Bird Breeding Habitat	<ul style="list-style-type: none"> - Grassland area >30ha (natural & cultural fields and meadows) - Grasslands not class 1 or 2 agriculture (no row crops or intensive hay or livestock pasturing) - Mature hayfields or pasture at least 5 years old 	<ul style="list-style-type: none"> - Nesting or breeding of 2 or more of the listed species - Field with 1 or more Short-eared Owls 	Contiguous ELC ecosite is the SWH	Grassland Habitat >30ha identified in study area (OAGM2, southwest)	Yes	Breeding Bird Surveys complete	Yes
33	Shrub/Early Successional Bird Breeding Habitat	<ul style="list-style-type: none"> - Cultural thickets, savannah and woodland habitat - Large field area succeeding to shrub and thicket habitat >10ha in size - Patches of shrub ecosite may be complexed into larger old field ecosites for some species 	<ul style="list-style-type: none"> - Confirm nesting or breeding of 1 of the listed indicator species and at least 2 of the common species - Habitat with Yellow-breasted Chat Or Golden-winged Warbler is SWH 	SWH is contiguous ELC ecosite field/thicket area	No Habitat matching Criteria identified in Study Area	No	None required	No

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34	Terrestrial Crayfish	<ul style="list-style-type: none"> - Meadow marsh, shallow marsh, swamp thicket, deciduous swamp and mixed swamp communities - Cultural meadow with inclusions of meadow marsh may be used - Wet edges of marshes and wet meadows should be surveyed for crayfish 	<ul style="list-style-type: none"> - Presence of 1 or more individuals of listed species or their chimneys in suitable habitat 	Area of ELC ecosite or Eco element area of meadow marsh or swamp within the larger ecosite area is the SWH	Candidate habitat identified in study area.	Yes	Incidental observation during ELC conducted	No
35	Special Concern & Rare Wildlife Species	<ul style="list-style-type: none"> - All Special concern and Provincially Rare plant and animal species - Where an element occurrence is identified within a 1 or 10km grid for a species listed, linking candidate habitat on the site must be completed to ELC ecosites 	<ul style="list-style-type: none"> - Assessment/inventory of site for identified special concern or rare species completed during time of year when species is present or easily identifiable - Habitat must be easily mapped and cover an important life stage component (specific nesting habitat, foraging) 	SWH is the finest ELC scale that protects the form and function of the habitat	No element occurrences for Special Concern or rare Wildlife Species identified within 1km of the study area Background Atlas review identified 6 Special concern species within 10km of the Study Area <ul style="list-style-type: none"> - Eastern Ribbonsnake (ORAA) - Snapping Turtle (ORAA) - Red-headed Woodpecker (OBBA) - Eastern Wood-pewee (OBBA) - Wood Thrush (OBBA) - Canada Warbler (OBBA) 	Yes- Woodlands on site and within 120m may provide habitat for Eastern-Wood-pewee, Wood Thrush and Canada Warbler. Marsh and shallow aquatic habitat on site, and within 120m may provide habitat for Common Snapping Turtle Areas along watercourses may provide habitat for Eastern Ribbonsnake	Three season Botanical Survey Breeding Bird Survey (by others) Incidental wildlife	Yes Eastern Wood-pewee identified on site Common Snapping Turtle observed incidentally during spring/summer surveys-crossing road

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ANIMAL MOVEMENT CORRIDORS								
36	Amphibian Movement Corridor	<ul style="list-style-type: none"> - Corridors may occur in all ecosites associated with water - Presence of significant amphibian breeding indicates the requirement for identifying corridors - Movement corridors between breeding habitat and summer habitat 	<ul style="list-style-type: none"> - Corridors typically include areas with native vegetation, with several layers of vegetation, unbroken by roads, waterways or waterbodies are most significant - At least 15 of vegetation on both sides of the waterway or up to 200m wide of woodland habitat with gaps of <20m - Shorter corridors are more significant than longer, but amphibians must be able to get to and from their summer breeding habitat 	Corridor is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No
37	Deer Movement Corridor	<ul style="list-style-type: none"> - May occur in all forested ecosites - Determined when deer wintering habitat is confirmed as SWH 	<ul style="list-style-type: none"> - Corridors at least 200m wide with gaps <20m leading to wintering habitat - Unbroken by roads and residential areas - Shorter corridors are more significant 	Corridor is the SWH	No Habitat matching Criteria identified in Study Area	No	None required	No

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Amphibians									
Western Chorus Frog - Great Lakes / St. Lawrence - Canadian Shield Population	<i>Pseudacris triseriata</i> pop. 2	NAR	THR	S3	ORAA (2007)	Generally found in lowland communities, such as swamps, inhabiting lowland shrubs and grasses in the community, near breeding habitat. Breeding occurs in lowland, ephemeral ponds, devoid of predatory fish species (COSEWIC 2008a)	Candidate habitat for this species occurs in the study area, swamp thickets and meadow marshes may provide suitable breeding habitat.	Amphibian Surveys	None observed.
Butterflies, Bees, Damselflies and Dragonflies									
Monarch	<i>Danaus plexippus</i>	SC	SC	S2N, S4B	MNRF (Grey County)	Requires milkweed for larval feeding, other wildflower species are also important for adult feeding when milkweed is not in flower; often found in abandoned farmland, along roadsides, and other open spaces (COSEWIC 2010b)	Candidate habitat for this species occurs in the study area. Meadow communities may provide suitable breeding habitat.	Incidental wildlife during all surveys	None observed.
Rusty-patched Bumble Bee	<i>Bombus affinis</i>	END	END	S1	MNRF (Grey County)	Uses a variety of open or semi-open habitat, including meadows, agricultural land and savannah habitat for foraging. Nests are often found underground, in old rodent burrows (COSEWIC 2010c).	Candidate Habitat matching Criteria is found in Study Area. This species is only known from historical occurrences in grey county.	Incidental wildlife during all surveys	None observed.
Birds									
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	S2N, S4B	MNRF (Grey County)	Prefers deciduous and mixed-deciduous mature forest habitat close to water bodies including lakes and rivers; nests in super canopy trees including Pine (Armstrong 2014).	No suitable habitat identified in the study area.	Breeding Bird Surveys Winter Wildlife Surveys	None observed.
Bank Swallow	<i>Riparia riparia</i>	THR	THR	S4B	MNRF (Grey County) OBBA (2007)	Breeds in a variety of natural and artificial bank type habitat, such as bluffs, stream and river banks, sand and gravel pits, and piles of sand, topsoil and other material. Nests are typically in vertical or near-vertical surfaces (COSEWIC 2013b).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4B	MNRF (Grey County) OBBA (2007)	Occurs in farmland, along lake/river shorelines, in wooded clearings and in urban populated areas. Nesting may occur inside or outside buildings; under bridges and in road culverts (COSEWIC 2011a).	Suitable foraging habitat occurs in the study area, no suitable nesting structures were identified	Breeding Bird Surveys	Observed foraging only
Black Tern	<i>Chlidonias niger</i>	SC	NAR	S3B	MNRF (Grey County)	Breeds in large, freshwater marshes, with emergent vegetation, and large areas of open water. Nests are typically within 6 meters of the water, on low emergent vegetation (Burke 2012).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.

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Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	MNRF (Grey County) OBBA (2007)	Nest in grassland habitats, including hayfields and meadows with a mixture of grasses and broad-leaved forbs with a high litter cover. Area Sensitive, with increased density in grasslands greater than 10ha (Renfrew et. al. 2015)	Candidate habitat for this species occurs in the study area. Meadow and Hay communities may provide suitable breeding habitat.	Grassland Breeding Bird Surveys	Yes
Canada Warbler	<i>Wilsonia canadensis</i>	SC	THR	S4B	OBBA (2007)	Canada Warbler prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer (COSEWIC 2008c).	Candidate habitat for this species occurs in the study area, mixed swamp communities may provide suitable breeding habitat.	Breeding Bird Surveys	None observed.
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S4B, S4N	OBBA (2007)	Typically nests in traditional chimneys of older buildings, which also provide roosting sites for many individuals during spring and fall migration (MNRF 2013).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Common Nighthawk	<i>Chordeiles minor</i>	SC	THR	S4B	MNRF (Grey County)	Breeds in open habitat, on the ground, in areas with no vegetation, including sand dunes, burned areas, open forests, railways, and gravel rooftops. Eggs are laid directly on the ground (COSEWIC 2007a).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B	OBBA (2007)	Nest in grassland habitats, including hayfields, pasture, savannahs, and other open areas. Preferential habitat includes areas with good grass and thatch (litter) cover (Jaster et. al. 2012).	Candidate habitat for this species occurs in the study area. Meadow and Hay communities may provide suitable breeding habitat.	Grassland Breeding Bird Surveys	Yes
Eastern Wood-pewee	<i>Contopus virens</i>	SC	SC	S4B	MNRF (Grey County) OBBA (2007)	Associated with mid-age mixed and deciduous forest stands, often dominated by Maple (Acer), Elm (Ulmus) or Oak (Quercus), and include areas with clear-cuts, openings or forest edges. Also prefers forest stands with little to no understory vegetation (COSEWIC 2012).	Candidate Habitat for this species occurs in the study area. Deciduous Woodland communities may provide suitable breeding habitat	Breeding Bird Surveys	Yes
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	NAR	SC	S4B	OBBA (2007)	Prefers moderately open grasslands and prairies with patchy bare ground; avoids grasslands with extensive shrub cover (Vickery 1996).	Candidate habitat for this species occurs in the study area. Meadow and Hay communities may provide suitable breeding habitat.	Grassland Breeding Bird Surveys	None observed.

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Henslow's Sparrow	<i>Ammodramus henslowii</i>	END	END	SHB	MNRF (Grey County)	Breeds in grassland habitat, and is area sensitive. Grasslands with tall, dense cover a thick thatch layer, and are greater than 30ha, but preferentially larger than 100ha are preferred (COSEWIC 2011b).	No suitable habitat identified in the study area.	Grassland Breeding Bird Surveys	None observed.
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	S4B	MNRF (Grey County)	Breeds in large marshes (>5ha) with emergent vegetation, typically cattails, with at least 50% open water, and relatively stable water levels (COSEWIC 2009a).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END	S2B	MNRF (Grey County)	Nests in open, low, grassy habitat with scattered shrubs. Presence of thorny shrubs, such as hawthorn, or barbwire fencing required for impaling prey. Only two recent areas of breeding in the province (Carden Plain and Napanee Plain) (Environment Canada 2015).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Louisiana Waterthrush	<i>Seiurus motacilla</i>	SC	THR	S3B	MNRF (Grey County)	Nests along headwater streams and associated wetlands which occur within large tracts of mature forest especially mixed wood forests with a component of hemlock. Nests are located in stream bank niches, under mossy logs, and within the roots of fallen trees (COSEWIC 2006)	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	SC	MNRF (Grey County)	Nests on cliff-ledges (50-200m preferred) near foraging areas. Also nests on anthropomorphic structures, such as tall building ledges, bridges, quarries, mines and cuts for road beds (COSEWIC, 2007b).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	THR	S4B	OBBA (2007)	Found in a variety of open areas, with a high density of dead or dying trees, particularly forests dominated by oak or beech (COSEWIC 2007c).	No suitable habitat identified in the study area.	Breeding Bird Surveys	None observed.
Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR	S4B	MNRF (Grey County) OBBA (2007)	Prefers second growth moist deciduous forests, with tall trees, and a dense understory of low saplings and an open forest floor with decaying leaf litter. Often nests in saplings, shrubs or occasionally dead stumps (COSEWIC 2012a).	Candidate Habitat for this species occurs in the study area. Deciduous Woodland communities may provide suitable breeding habitat	Breeding Bird Surveys	None observed.
Fish									

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Northern Brooke Lamprey	<i>Ichtyomyzon fossor</i>	SC	SC	S3	MNRF (Grey County)	Found in clear streams and rivers with rocky or gravelly substrates and presence of fine sands and uni-directional current for egg adherence, larval stage requires soft substrates for burrowing (COSEWIC 2007d).	No suitable habitat identified in the study area. Warm water system.	aquatic assessment	None observed.
Redside Dace	<i>Clinostomus elongatus</i>	END	END	S2	MNRF (Grey County)	Associated with small, clear, head water streams and creeks with abundant overhanging vegetation and both pool and riffle habitat, often with gravel substrates and cool water temperature regimes (COSEWIC, 2007e).	No suitable habitat identified in the study area. Warm water system.	aquatic assessment	None observed.
Mammals									
Eastern Small-footed Myotis	<i>Myotis leibii</i>	END	NA	S2S3	MNRF (Grey County)	Associated with hilly or mountainous terrain, in or near coniferous or deciduous forest habitat. Maternity roosts located in cracks and crevices of talus slopes and rocky outcrops, or, occasionally in bridges, old buildings, hollow trees (or loose bark) and caves and mines during the maternity season. Hibernate singly or in small clusters in mines and caves (NatureServe, 2015).	Candidate Habitat for this species occurs in the study area. Deciduous and mixed woodland communities may provide suitable maternity 3.6.11 habitat.	None completed, recommend assessment pre-construction where trees will be removed	None observed.
American Badger	<i>Taxidea taxus</i>	END	END	S2	MNRF (Grey County)	Associated with open habitat, including agricultural hedgerows, grasslands, fallow habitat and open linear corridors in forests. Soil composition must be coherent to maintain structure for digging and tunneling, usually coarse silts to fine sands, in Ontario usually found in areas of sandy and loam soils. Prey availability is also important for site suitability (COSEWIC, 2012b).	Study area consists of Till moraine and is an unsuitable substrate for American Badger denning.	None required, any dens/burrows recorded incidentally	None observed.
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S4	MNRF (Grey County) OMA (1994)	Hibernate in Caves; maternity colonies located in warm sites, often associated with human habitation; including attics, old buildings, under bridges, rock crevices and cavities in canopy trees in wooded areas (COSEWIC, 2013c).	Candidate Habitat for this species occurs in the study area. Deciduous and mixed woodland communities may provide suitable maternity habitat.	None completed, recommend assessment pre-construction where trees will be removed	None observed.

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Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	MNRF (Grey County)	Hibernate in Caves; maternity colonies usually located in trees, and are closely associated with specific tree characteristics and density of suitable trees. Characterized by tall, large diameter trees in early stages of decay, located in openings in mature forest canopies (COSEWIC, 2013c).	Candidate Habitat for this species occurs in the study area. Deciduous and mixed woodland communities may provide suitable maternity habitat.	None completed, recommend assessment pre-construction where trees will be removed	None observed.

Reptiles									
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	THR	S3	MNRF (Grey County)	Use a variety of eutrophic wetland habitat types, including lakes, ponds, watercourses, marshes, man-made channels, farm fields, coastal areas and bays. Seasonal overland terrestrial movements up to 2.5 km occur to reach nesting and overwintering areas, generally through wooded coniferous or mixed forest habitat. Nests are usually laid in loose sand or organic soil (COSEWIC 2005b).	Candidate Habitat is found in Study Area, swamps, wetlands, coniferous and mixed woodlands, may all provide habitat for seasonal overland movements. Watercourses and shallow floating aquatic communities may also provide suitable overwintering habitat.	None required, incidental observations	None observed.
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	S3	MNRF (Grey County)	Highly aquatic species, found in deep, large waterbodies, including Lakes and large rivers, with abundant basking sites. Emerge onto land only during nesting, which occurs in soft sand or soil. Waterbodies with slow currents, soft mud bottoms and abundant aquatic vegetation are preferred (COSEWIC, 2002b).	No suitable habitat identified in the study area.	None required, incidental observations	None observed.

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Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	S3	MNRF (Grey County)	Inhabit slow-moving waters with soft, muck bottom and dense aquatic vegetation. Ponds, sloughs and shallow bays are all often used as summering and overwintering habitat (COSEWIC 2008d).	Candidate habitat is found in the study area. Shallow floating aquatic, streams, sewage treatment ponds and open water marsh areas outside the study area may provide suitable overwintering habitat.	None required, incidental observations	Yes
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	SC	S3	MNRF (Grey County) ORAA (2013)	A semi-aquatic species that inhabits dense, low- vegetation, edges of ponds, streams, marshes, fens and bogs, with open sunlit areas for basking (COSEWIC 2002c).	Stream and marsh habitat in the study area may provide suitable habitat in the study area.	None required, incidental observations	None observed.
Massasauga Rattlesnake	<i>Sistrurus catenatus</i>	SC	THR	S3	MNRF (Grey County)	Only historic observations of Massasauga in the north western portion of Wellington County. Found in wet prairies, old fields, peatlands, rock barrens and coniferous forests, with open-areas, and areas of dense shrub cover. Hibernate in damp areas below the frost line (COSEWIC, 2012c).	No suitable habitat identified in the study area.	None required, incidental observations	None observed.
Milksnake	<i>Lampropeltis triangulum</i>	SC	SC	S3	MNRF (Grey County)	Habitat generalists often associated with edge habitat, meadows, prairies, pastures, rocky outcrops and human disturbances such as hydro corridors and railway embankments. Habitat is usually close to a water source. Hibernation occurs in a variety of natural and man-made features, including rotting logs, old foundations, basements and burrows (COSEWIC 2014).	Meadow, old foundations and hay fields may provide suitable habitat in the study area.	None required, incidental observations	None observed.
Vascular Plants									
Butternut	<i>Juglans cinerea</i>	END	END	S3?	MNRF (Grey County)	Butternuts can tolerate a wide range of soil types, but primarily occur in rich, moist well drained soils, often along streams (Environment Canada 2010)	Habitat for Butternut is present along the streams throughout the study area. Butternut was not identified in these communities during field surveys or through background resources.	ELC, 3 season botanical inventory	None observed.

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COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A
American Hart's Tongue Fern	<i>Asplenium scolopendrium</i>	SC	SC	S3	MNRF (Grey County)	Grows on rocks or rocky substrates and requires calcareous soils, preferential to sites with dolomitic limestone, in Ontario found in upper talus and mid-slopes of the Niagara Escarpment (Environment Canada 2013).	No suitable habitat in study area.	ELC, 3 season botanical inventory	None observed.
Eastern Prairie-fringed Orchid	<i>Platanthera leucophaea</i>	END	END	S2	MNRF (Grey County)	Habitat includes fens, wet tallgrass prairie and moist old fields with open growing conditions. Species does not flower annually (Environment Canada 2012).	No suitable habitat in study area.	ELC, 3 season botanical inventory	None observed.
Tuberous Indian Plantain	<i>Arnoglossum plantagineum</i>		SC		MNRF (Grey County)	Habitat includes open, sunny areas in wet calcareous soils, including wet meadows and shoreline fens (COSEWIC 2002d).	No suitable habitat in study area.	ELC, 3 season botanical inventory	None observed.

REFERENCES:

Armstrong, Ted (E.R.). 2014. Management Plan for the Bald Eagle (*Haliaeetus leucocephalus*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 53 pp.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The Atlas of the Breeding Birds Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706pp. (Available online here: <http://www.birdsontario.org/atlas/datasummaries.jsp>)

Colin Jones, Ross Layberry, and Alan Macnaughton. Ontario Butterfly Atlas Online. (April 30, 2015). (Available online here: Toronto Entomologists' Association: http://www.ontarioinsects.org/atlas_online.htm)

COSEWIC 2002b. COSEWIC assessment and status report on the northern map turtle *Graptemys geographica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp.

COSEWIC 2002c. COSEWIC assessment and status report on the eastern ribbon snake *Thamnophis sauritus*. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp.

COSEWIC 2002d. COSEWIC assessment and update status report on the tuberous Indian-plantain *Arnoglossum plantagineum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 11 pp.

COSEWIC 2005b. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC 2007a. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 25 pp.

COSEWIC 2007b. COSEWIC assessment and update status report on the Peregrine Falcon *Falco peregrinus* (*pealei* subspecies - *Falco peregrinus* and *pealei anatum/tundrius* - *Falco peregrinus anatum/tundrius*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 45 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC 2007c. COSEWIC assessment and update status report on the Red-headed Woodpecker *Melanerpes erythrocephalus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.

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COSEWIC 2007d. COSEWIC assessment and update status report on the northern brook lamprey *Ichthyomyzon fossor* (Great Lakes – Upper St. Lawrence populations and Saskatchewan – Nelson population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 30 pp. (http://www.registrelep-sararegistry.gc.ca/sar/assessment/status_e.cfm).

COSEWIC 2007e. COSEWIC assessment and update status report on the Redside Dace *clinostomus elongatus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 59pp.

COSEWIC. 2008a. COSEWIC assessment and update status report on the Western Chorus Frog *Pseudacris triseriata* Carolinian population and Great Lakes/St. Lawrence – Canadian Shield population in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

COSEWIC. 2008c. COSEWIC assessment and status report on the Canada Warbler *Wilsonia Canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2008d. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2009a. COSEWIC assessment and update status report on the Least Bittern *Ixobrychus exilis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 36 pp.

COSEWIC. 2010b. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.

COSEWIC. 2010c. COSEWIC assessment and status report on the Rusty-patched Bumble Bee *Bombus affinis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp.

COSEWIC. 2011a. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.

COSEWIC. 2011b. COSEWIC assessment and status report on the Henslow's Sparrow *Ammodramus henslowii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 37 pp.

COSEWIC. 2012a. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.

COSEWIC. 2012b. COSEWIC assessment and status report on the American Badger *Taxidea taxus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. iv + 63 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COSEWIC. 2012c. COSEWIC assessment and status report on the Massasauga *Sistrurus catenatus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 84 pp.

COSEWIC. 2013b. COSEWIC assessment and status report on the Bank Swallow *Riparia riparia* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp.

COSEWIC. 2014. COSEWIC assessment and status report on the Eastern Milksnake *Lampropeltis triangulum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 61 pp.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Altona Manitoba, Canada. (available online here: <http://www.ontarionature.org/discover/resources/publications.php>)

Environment Canada. 2010. Recovery Strategy for the Butternut (*Juglans cinerea*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa vii + 24 pp

Environment Canada. 2012. Recovery Strategy for the Eastern Prairie Fringed-orchid (*Platanthera leucophaea*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. ii + 11 pp. + Appendices.

Environment Canada. 2013. Management Plan for the Hart's-tongue Fern (*Asplenium scolopendrium*) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 16 pp

Environment Canada. 2013. Management Plan for the Hart's-tongue Fern (*Asplenium scolopendrium*) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 16pp.

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Environment Canada. 2015. Recovery Strategy for the Loggerhead Shrike, migrans subspecies (*Lanius ludovicianus migrans*), in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. vii + 35 pp.

MNRF, 2013. General Habitat Description for the Chimney Swift (*Chaeture pelagica*). Ontario Ministry of Natural Resources and Forestry. July 2, 2013.

MNRF, 2015. Wellington County Upper Tier Species at Risk. Ministry of Natural Resources and Forestry. Provided February 10, 2015.

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: January 5, 2016).

NHIC, 2015. MNRF Make a map: Natural Heritage Areas. (Available online: <http://www.ontario.ca/environment-and-energy/make-natural-heritage-area-map>)

Ontario Nature. 2015. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. (Available online here: <http://www.ontarionature.org/atlas>; Accessed April 29, 2015].

Peter S. Burke. 2012. Management Plan for the Black Tern (*Chlidonias niger*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources (OMNR), Peterborough, Ontario. vi + 47 pp.

Vickery, Peter D. 1996. Grasshopper Sparrow (*Ammodramus savannarum*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/239>

STREAM REACH 1		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is outside the subject property and was assessed from the property boundary. This reach runs through a Dry, Mixed Meadow Ecosite community, adjacent to single unit residential dwellings. The substrate in the reach is mostly hard pan clay with areas of silt and organic fines. Small amounts of gravel, sand and cobble are present. The channel morphology is straight. Submergent and emergent vegetation provided a combined 25% cover. The stream bank was mostly vegetated, with partly undercut banks and evidence of erosion.
Mean Channel Width ² (m):	0.5 – 2.0	
Mean Channel Depth ³ (m):	1.3	
Mean Water Depth ⁴ (m):	0.5	
Stream Shading %:	70%	
STREAM REACH 2		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach runs through a Dry, Mixed Meadow Ecosite community. The substrate in the reach is mostly hard pan clay with areas of silt and organic fines. Small amounts of gravel, sand and cobble are present. The channel morphology is mostly straight with slight bends. The flow pattern is flat with occasional pools with water up to 1m depth. Submergent and emergent vegetation provided a combined 25% cover. The bank is largely vegetated, with partly undercut banks and evidence of erosion.
Mean Channel Width ² (m):	0.5 – 2.0	
Mean Channel Depth ³ (m):	1.3	
Mean Water Depth ⁴ (m):	0.5	
Stream Shading %:	70%	5 small fish of unknown species and approximate length of 3cm were observed in the reach.
STREAM REACH 3		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	The stream reach is a straight channelized road side ditch. Substrate in the reach is 100 % fines composed of silt and organics. In stream cover is 80% emergent vegetation, and 20 % submergent vegetation, with little to no open areas. The bank is stable and vegetated, with no evidence of erosion. Ongoing ditch clearing and activities associated with the presence of the road (e.g. salt) represent potential impacts the stream reach. High amount of aquatic vegetation could act as a barrier to fish passage during low flow periods.
Mean Channel Width ² (m):	2.5	
Mean Channel Depth ³ (m):	0.3	
Mean Water Depth ⁴ (m):	0.1	
Stream Shading %:	80%	3 small fish of unknown species and approximately 3cm in length were observed in the reach.
STREAM REACH 4		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is outside the subject property and was assessed from the property boundary. This reach runs through a Dry Mixed Meadow community, adjacent to an industrial property. The substrate in the reach is a mixture of sand, fines and hard pan clay, with smaller amount of cobble and gravel. The channel morphology is meandering. Cover of emergent vegetation is about 10%. The stream bank is partly vegetated, with deeply undercut banks and evidence of erosion.
Mean Channel Width ² (m):	0.7	
Mean Channel Depth ³ (m):	0.5	
Mean Water Depth ⁴ (m):	0.2	
Stream Shading %:	80%	
STREAM REACH 5		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach runs through a Dry Mixed Meadow Ecosite community. The substrate in the reach is predominantly hard pan clay with areas of cobble and boulders. The channel morphology is meandering. The flow pattern is flat with small sections of riffles. In stream vegetation cover is approximately 10%. The bank was mostly vegetated, with partly undercut banks and evidence of erosion.
Mean Channel Width ² (m):	3	
Mean Channel Depth ³ (m):	0.5	
Mean Water Depth ⁴ (m):	0.15	
Stream Shading %:	50%	
STREAM REACH 6		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach primarily runs through wetland communities of meadow marsh and shrub thicket. The substrate is 50% sand and 40 % fines, with small amounts of gravel, cobble and boulders. Flow pattern is flat, with pools and meandering channel morphology. In-stream cover is sparse, with only 15% vegetation cover. The banks are vegetated and stable, with minimal evidence of erosion.
Mean Channel Width ² (m):	2.0	
Mean Channel Depth ³ (m):	0.6	
Mean Water Depth ⁴ (m):	0.3	
Stream Shading %:	15%	
STREAM REACH 7		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach has been modified and straightened as part of the municipal drainage system. Substrate is a mixture of gravel, cobble, and boulders, with smaller amounts of sand and hardpan clay. The flow pattern is a mixture of flat sections with occasional pools and riffles. Emergent and submergent vegetation provide in-stream cover of 60%. The banks are well vegetated and stable in most areas. Some undercutting and bank erosion is occurring in areas.
Mean Channel Width ² (m):	2.5	
Mean Channel Depth ³ (m):	1.5	
Mean Water Depth ⁴ (m):	0.15	
Stream Shading %:	10%	

STREAM REACH 8		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is outside the subject property and was assessed from the property boundary. This reach runs through agricultural lands, adjacent to a single unit residential dwelling. The substrate in the reach is a mixture of sand, gravel, cobble and boulders. The channel morphology is meandering. Submergent and emergent vegetation provided a combined 15% cover. The stream banks are steeply sloped, mostly vegetated, with partly undercut banks and evidence of erosion.
Mean Channel Width ² (m):	3	
Mean Channel Depth ³ (m):	1.5	
Mean Water Depth ⁴ (m):	0.3	
Stream Shading %:	10%	
STREAM REACH 9		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach appears to be a historic agriculture drain that has since naturalized. The substrate is mostly sand, with a mixture of fines, gravel, cobble and boulders. The flow pattern is mostly flat, with areas of pools and riffles. The channel morphology is generally straight, with some bends and meanders. In stream vegetation cover is about 30%. The banks are steep and deep, mostly vegetated, with some evidence of erosion.
Mean Channel Width ² (m):	4	
Mean Channel Depth ³ (m):	0.7	
Mean Water Depth ⁴ (m):	0.4	
Stream Shading %:	40%	
STREAM REACH 10		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach contains a series of multiple beaver dams and small impoundments. During certain periods, the watercourse overtops the bank and floods the adjacent Green Ash Swamp. Channel morphology is straight with minor meanders. In stream cover consists of 25% woody debris and 10% aquatic vegetation. The banks are steep, mostly vegetated, with some erosion. The beaver dams may create partial or full barriers to fish passage.
Mean Channel Width ² (m):	3	
Mean Channel Depth ³ (m):	2	
Mean Water Depth ⁴ (m):	0.7	
Stream Shading %:	60	
STREAM REACH 11		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach contains a series of multiple beaver dams and small impoundments. Channel morphology is straight with minor meanders. In stream cover consist of 25% woody debris and 10% aquatic vegetation. The banks are steep, mostly vegetated, with some erosion. The beaver dams may create partial or full barriers to fish passage.
Mean Channel Width ² (m):	3	
Mean Channel Depth ³ (m):	2	
Mean Water Depth ⁴ (m):	0.7	
Stream Shading %:	80	
STREAM REACH 12		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is an ephemeral agricultural drain, which runs through an active row crop agricultural field. Vegetated buffers to either side of the reach are approximately 5m wide. Substrate is mostly sand, with some fines and small amounts of gravel. Some erosion of the banks and sediment loading from the field are evident.
Mean Channel Width ² (m):	2	
Mean Channel Depth ³ (m):	1.0	
Mean Water Depth ⁴ (m):	0.1	
Stream Shading %:	5%	
STREAM REACH 13		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is an ephemeral agricultural drain, downstream of an active row crop, agricultural system and runs through a mineral meadow march and thicket swamp. In-stream aquatic vegetation cover is approximately 30%. Substrate is mostly sand, with some fines and small amounts of gravel. Some erosion of the banks and sediment loading from the field are evident.
Mean Channel Width ² (m):	2	
Mean Channel Depth ³ (m):	0.7	
Mean Water Depth ⁴ (m):	0.2	
Stream Shading %:	30	
STREAM REACH 14		DESCRIPTION
Fish Community Classification ¹ :	Warmwater/ Coolwater	This stream reach is outside the subject property and was assessed from the property boundary. The reach runs through thicket swamp, shallow marsh and shallow aquatic communities. The open water community provides potential fish habitat and the surrounding wetland communities provide potential spawning habitat. The downstream culvert is largely blocked by sticks and debris and may pose a full or partial barrier to fish passage.
Mean Channel Width ² (m):		
Mean Channel Depth ³ (m):		
Mean Water Depth ⁴ (m):		
Stream Shading %:	10	

1. Fish Community Classification based on MNRF and GRCA Records.
2. Mean Channel width measured as the width of the wetted bank.
3. Mean Channel Depth is the depth of the channel from the low point to the top of the wetted bank.
4. Mean Water Depth is the depth of the water at the time of observation (October 19th 2015).
5. Fish Species is compiled from data provided by MNRF and GRCA.

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PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x											
x		AMPHIBIANS									
x	ORAA (2007)	American Toad	<i>Anaxyrus americanus</i>					S5	G5		
x	ORAA (2007)	Gray Treefrog	<i>Hyla versicolor</i>					S5	G5		
x	ORAA (2013)	Spring Peeper	<i>Pseudacris crucifer</i>					S5	G5		
x	ORAA (2007)	Western Chorus Frog - Great Lakes / St. Lawrence-Canadian Shield Population	<i>Pseudacris triseriata pop. 2</i>	NAR	THR	THR		S4	G5		
x	ORAA (2007)	Green Frog	<i>Lithobates clamitans</i>					S5	G5		
x	ORAA (2007)	Northern Leopard Frog	<i>Lithobates pipiens</i>	NAR	NAR			S5	G5		
x	ORAA (1989)	Mink Frog	<i>Lithobates septentrionalis</i>					S5	G5		
x	ORAA (2007)	Wood Frog	<i>Lithobates sylvaticus</i>					S5	G5		
x											
x		SNAKES AND LIZARDS									
x	ORAA (1989)	Northern Red-bellied Snake	<i>Storeria occipitomaculata occipitomaculata</i>					S5	G5		
x	ORAA (2013)	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	SC	SC	Schedule 1	S3	G5		
x											
x		TURTLES									
x	ORAA (1989)	Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	SC	Schedule 1	S3	G5T5		
x	ORAA (2013)	Midland Painted Turtle	<i>Chrysemys picta marginata</i>					S5	G5T5		
x											
x		BIRDS									
x	OBBA (2005)	Pied-billed Grebe	<i>Podilymbus podiceps</i>					S4B,S4N	G5		CP
x	OBBA (2005)	American Bittern	<i>Botaurus lentiginosus</i>					S4B	G4		CP
x	OBBA (2005)	Great Blue Heron	<i>Ardea herodias</i>					S4	G5		
x	OBBA (2005)	Green Heron	<i>Butorides virescens</i>					S4B	G5		CP
x	OBBA (2005)	Canada Goose	<i>Branta canadensis</i>					S5	G5		CP
x	OBBA (2005)	Wood Duck	<i>Aix sponsa</i>					S5	G5		
x	OBBA (2005)	Green-winged Teal	<i>Anas crecca</i>					S4	G5		
x	OBBA (2005)	Mallard	<i>Anas platyrhynchos</i>					S5	G5		

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PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x	OBBA (2005)	Blue-winged Teal	<i>Anas discors</i>					S4	G5		CP
x	OBBA (2005)	Northern Shoveler	<i>Anas clypeata</i>					S4	G5		
x	OBBA (2005)	Gadwall	<i>Anas strepera</i>					S4	G5		CP
x	OBBA (2005)	American Wigeon	<i>Anas americana</i>					S4	G5		CP
x	OBBA (2005)	Hooded Merganser	<i>Lophodytes cucullatus</i>					S5B,S5N	G5		CP
x	OBBA (2005)	Ruddy Duck	<i>Oxyura jamaicensis</i>					S4B,S4N	G5		
x	OBBA (2005)	Turkey Vulture	<i>Cathartes aura</i>					S5B	G5		CP
x	OBBA (2005)	Northern Harrier	<i>Circus cyaneus</i>	NAR	NAR			S4B	G5	√	CP
x	OBBA (2005)	Sharp-shinned Hawk	<i>Accipiter striatus</i>	NAR				S5	G5		CP
x	OBBA (2005)	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	NAR			S4	G5		CP
x	OBBA (2005)	Broad-winged Hawk	<i>Buteo platypterus</i>					S5B	G5		CP
x	OBBA (2005)	Red-tailed Hawk	<i>Buteo jamaicensis</i>	NAR	NAR			S5	G5		
x	OBBA (2005)	American Kestrel	<i>Falco sparverius</i>					S4	G5	√	CP
x	OBBA (2005)	Ruffed Grouse	<i>Bonasa umbellus</i>					S4	G5		CP
x	OBBA (2005)	Wild Turkey	<i>Meleagris gallopavo</i>					S5	G5		
x	OBBA (2005)	Virginia Rail	<i>Rallus limicola</i>					S5B	G5		CP
x	OBBA (2005)	Sora	<i>Porzana carolina</i>					S4B	G5		CP
x	OBBA (2005)	Common Moorhen	<i>Gallinula chloropus</i>					S4B	G5		CP
x	OBBA (2005)	American Coot	<i>Fulica americana</i>	NAR	NAR			S4B	G5		CP
x	OBBA (2005)	Killdeer	<i>Charadrius vociferus</i>					S5B,S5N	G5		
x	OBBA (2005)	Spotted Sandpiper	<i>Actitis macularius</i>					S5	G5		CP
x	OBBA (2005)	Upland Sandpiper	<i>Bartramia longicauda</i>					S4B	G5		CP
x	OBBA (2005)	Wilson's Snipe	<i>Gallinago delicata</i>					S5B	G5		CP
x	OBBA (2005)	American Woodcock	<i>Scolopax minor</i>					S4B	G5		CP
x	OBBA (2005)	Wilson's Phalarope	<i>Phalaropus tricolor</i>					S3B	G5		CP
x	OBBA (2005)	Rock Pigeon	<i>Columba livia</i>					SNA	G5		
x	OBBA (2005)	Mourning Dove	<i>Zenaida macroura</i>					S5	G5		
x	OBBA (2005)	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>					S5B	G5	√	CP
x	OBBA (2005)	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>					S4B	G5		
x	OBBA (2005)	Eastern Screech-Owl	<i>Megascops asio</i>	NAR	NAR			S4	G5		

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 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A
 AA16-031A

PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x	OBBA (2005)	Great Horned Owl	<i>Bubo virginianus</i>					S4	G5		
x	OBBA (2005)	Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	THR	Schedule1	S4B,S4N	G5	√	
x	OBBA (2005)	Ruby-throated Hummingbird	<i>Archilochus colubris</i>					S5B	G5		CP
x	OBBA (2005)	Belted Kingfisher	<i>Megaceryle alcyon</i>					S4B	G5	√	
x	OBBA (2005)	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	THR	THR	Schedule1	S4B	G5	√	
x	OBBA (2005)	Red-bellied Woodpecker	<i>Melanerpes carolinus</i>					S4	G5		CP
x	OBBA (2005)	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>					S5B	G5		CP
x	OBBA (2005)	Downy Woodpecker	<i>Picoides pubescens</i>					S5	G5		
x	OBBA (2005)	Hairy Woodpecker	<i>Picoides villosus</i>					S5	G5		
x	OBBA (2005)	Northern Flicker	<i>Colaptes auratus</i>					S4B	G5	√	
x	OBBA (2005)	Pileated Woodpecker	<i>Dryocopus pileatus</i>					S5	G5		CP
x	OBBA (2005)	Eastern Wood-pewee	<i>Contopus virens</i>	SC	SC		No Schedule	S4B	G5	√	
x	OBBA (2005)	Alder Flycatcher	<i>Empidonax alnorum</i>					S5B	G5		CP
x	OBBA (2005)	Willow Flycatcher	<i>Empidonax traillii</i>					S5B	G5	√	
x	OBBA (2005)	Least Flycatcher	<i>Empidonax minimus</i>					S4B	G5		CP
x	OBBA (2005)	Eastern Phoebe	<i>Sayornis phoebe</i>					S5B	G5		CP
x	OBBA (2005)	Great Crested Flycatcher	<i>Myiarchus crinitus</i>					S4B	G5		
x	OBBA (2005)	Eastern Kingbird	<i>Tyrannus tyrannus</i>					S4B	G5	√	CP
x	OBBA (2005)	Horned Lark	<i>Eremophila alpestris</i>					S5B	G5		CP
x	OBBA (2005)	Tree Swallow	<i>Tachycineta bicolor</i>					S4B	G5		
x	OBBA (2005)	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>					S4B	G5		CP
x	OBBA (2005)	Bank Swallow	<i>Riparia riparia</i>	THR	THR		No Schedule	S4B	G5	√	CP
x	OBBA (2005)	Cliff Swallow	<i>Petrochelidon pyrrhonota</i>					S4B	G5		CP
x	OBBA (2005)	Barn Swallow	<i>Hirundo rustica</i>	THR	THR		No Schedule	S4B	G5		CP
x	OBBA (2005)	Blue Jay	<i>Cyanocitta cristata</i>					S5	G5		
x	OBBA (2005)	American Crow	<i>Corvus brachyrhynchos</i>					S5B	G5		
x	OBBA (2005)	Common Raven	<i>Corvus corax</i>					S5	G5		
x	OBBA (2005)	Black-capped Chickadee	<i>Poecile atricapillus</i>					S5	G5		CP
x	OBBA (2005)	Red-breasted Nuthatch	<i>Sitta canadensis</i>					S5	G5		CP
x	OBBA (2005)	White-breasted Nuthatch	<i>Sitta carolinensis</i>					S5	G5		

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 AA16-031A

PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x	OBBA (2005)	House Wren	<i>Troglodytes aedon</i>					S5B	G5		
x	OBBA (2005)	Winter Wren	<i>Troglodytes troglodytes</i>					S5B	G5		
x	OBBA (2005)	Sedge Wren	<i>Cistothorus platensis</i>	NAR	NAR			S4B	G5		CP
x	OBBA (2005)	Marsh Wren	<i>Cistothorus palustris</i>					S4B	G5		CP
x	OBBA (2005)	Golden-crowned Kinglet	<i>Regulus satrapa</i>					S5B	G5		CP
x	OBBA (2005)	Eastern Bluebird	<i>Sialia sialis</i>	NAR	NAR			S5B	G5		CP
x	OBBA (2005)	Veery	<i>Catharus fuscescens</i>					S4B	G5		CP
x	OBBA (2005)	Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR		No Schedule	S4B	G5	√	
x	OBBA (2005)	American Robin	<i>Turdus migratorius</i>					S5B	G5		
x	OBBA (2005)	Gray Catbird	<i>Dumetella carolinensis</i>					S4B	G5		CP
x	OBBA (2005)	Brown Thrasher	<i>Toxostoma rufum</i>					S4B	G5	√	CP
x	OBBA (2005)	Cedar Waxwing	<i>Bombycilla cedrorum</i>					S5B	G5		
x	OBBA (2005)	European Starling	<i>Sturnus vulgaris</i>					SNA	G5		
x	OBBA (2005)	Blue-headed Vireo	<i>Vireo solitarius</i>					S5B	G5		CP
x	OBBA (2005)	Yellow-throated Vireo	<i>Vireo flavifrons</i>					S4B	G5		
x	OBBA (2005)	Warbling Vireo	<i>Vireo gilvus</i>					S5B	G5		
x	OBBA (2005)	Red-eyed Vireo	<i>Vireo olivaceus</i>					S5B	G5		
x	OBBA (2005)	Nashville Warbler	<i>Vermivora ruficapilla</i>					S5B	G5		CP
x	OBBA (2005)	Yellow Warbler	<i>Dendroica petechia</i>					S5B	G5		
x	OBBA (2005)	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>					S5B	G5		CP
x	OBBA (2005)	Magnolia Warbler	<i>Dendroica magnolia</i>					S5B	G5		CP
x	OBBA (2005)	Yellow-rumped Warbler	<i>Dendroica coronata</i>					S5B	G5		CP
x	OBBA (2005)	Black-throated Green Warbler	<i>Dendroica virens</i>					S5B	G5		
x	OBBA (2005)	Pine Warbler	<i>Dendroica pinus</i>					S5B	G5		CP
x	OBBA (2005)	Black-and-white Warbler	<i>Mniotilta varia</i>					S5B	G5		CP
x	OBBA (2005)	American Redstart	<i>Setophaga ruticilla</i>					S5B	G5		CP
x	OBBA (2005)	Ovenbird	<i>Seiurus aurocapilla</i>					S4B	G5		CP
x	OBBA (2005)	Northern Waterthrush	<i>Seiurus noveboracensis</i>					S5B	G5		
x	OBBA (2005)	Mourning Warbler	<i>Oporornis philadelphia</i>					S4B	G5		CP
x	OBBA (2005)	Common Yellowthroat	<i>Geothlypis trichas</i>					S5B	G5		

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PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x	OBBA (2005)	Canada Warbler	<i>Wilsonia canadensis</i>	SC	THR	THR	Schedule1	S4B	G5		
x	OBBA (2005)	Scarlet Tanager	<i>Piranga olivacea</i>					S4B	G5		CP
x	OBBA (2005)	Northern Cardinal	<i>Cardinalis cardinalis</i>					S5	G5		
x	OBBA (2005)	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>					S4B	G5	√	
x	OBBA (2005)	Dickcissel	<i>Spiza americana</i>					SNA	G5		
x	OBBA (2005)	Chipping Sparrow	<i>Spizella passerina</i>					S5B	G5		
x	OBBA (2005)	Clay-colored Sparrow	<i>Spizella pallida</i>					S4B	G5		CP
x	OBBA (2005)	Field Sparrow	<i>Spizella pusilla</i>					S4B	G5	√	CP
x	OBBA (2005)	Vesper Sparrow	<i>Pooecetes gramineus</i>					S4B	G5	√	CP
x	OBBA (2005)	Savannah Sparrow	<i>Passerculus sandwichensis</i>					S4B	G5	√	CP
x	OBBA (2005)	Grasshopper Sparrow	<i>Ammodramus savannarum</i>		SC		No Schedule	S4B	G5TU	√	CP
x	OBBA (2005)	Song Sparrow	<i>Melospiza melodia</i>					S5B	G5		
x	OBBA (2005)	Swamp Sparrow	<i>Melospiza georgiana</i>					S5B	G5		CP
x	OBBA (2005)	White-throated Sparrow	<i>Zonotrichia albicollis</i>					S5B	G5		CP
x	OBBA (2005)	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR		No Schedule	S4B	G5	√	CP
x	OBBA (2005)	Red-winged Blackbird	<i>Agelaius phoeniceus</i>					S4	G5		
x	OBBA (2005)	Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR		No Schedule	S4B	G5	√	CP
x	OBBA (2005)	Common Grackle	<i>Quiscalus quiscula</i>					S5B	G5		
x	OBBA (2005)	Brown-headed Cowbird	<i>Molothrus ater</i>					S4B	G5		
x	OBBA (2005)	Baltimore Oriole	<i>Icterus galbula</i>					S4B	G5	√	
x	OBBA (2005)	Purple Finch	<i>Carpodacus purpureus</i>					S4B	G5		CP
x	OBBA (2005)	House Finch	<i>Carpodacus mexicanus</i>					SNA	G5		
x	OBBA (2005)	American Goldfinch	<i>Carduelis tristis</i>					S5B	G5		CP
x	OBBA (2005)	House Sparrow	<i>Passer domesticus</i>					SNA	G5		
x											
x		MAMMALS									
x	OMA (1994)	Northern Short-tailed Shrew	<i>Blarina brevicauda</i>					S5	G5		
x	OMA (1994)	Star-nosed Mole	<i>Condylura cristata</i>					S5	G5		
x	OMA (1994)	Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	END	Schedule 1	S4	G3G4		
x	OMA (1994)	Big Brown Bat	<i>Eptesicus fuscus</i>					S5	G5		

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PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
x	OMA (1994)	Snowshoe Hare	<i>Lepus americanus</i>					S5	G5		
x	OMA (1994)	Eastern Chipmunk	<i>Tamias striatus</i>					S5	G5		
x	OMA (1994)	Woodchuck	<i>Marmota monax</i>					S5	G5		
x	OMA (1994)	Eastern Gray Squirrel	<i>Sciurus carolinensis</i>					S5	G5		
x	OMA (1994)	Red Squirrel	<i>Tamiasciurus hudsonicus</i>					S5	G5		
x	OMA (1994)	Beaver	<i>Castor canadensis</i>					S5	G5		
x	OMA (pre-1969)	Southern Red-backed Vole	<i>Clethrionomys gapperi</i>					S5	G5		
x	OMA (1994)	Meadow Vole	<i>Microtus pennsylvanicus</i>					S5	G5		
x	OMA (1994)	Muskrat	<i>Ondatra zibethicus</i>					S5	G5		
x	OMA (1994)	Norway Rat	<i>Rattus norvegicus</i>					SNA	G5		
x	OMA (1994)	Meadow Jumping Mouse	<i>Zapus hudsonius</i>					S5	G5		
x	OMA (1994)	Woodland Jumping Mouse	<i>Napaeozapus insignis</i>					S5	G5		
x	OMA (1994)	Porcupine	<i>Erethizon dorsatum</i>					S5	G5		
x	OMA (1994)	Coyote	<i>Canis latrans</i>					S5	G5		
x	OMA (1994)	Red Fox	<i>Vulpes vulpes</i>					S5	G5		
x	OMA (1994)	Northern Raccoon	<i>Procyon lotor</i>					S5	G5		
x	OMA (1994)	Long-tailed Weasel	<i>Mustela frenata</i>					S4	G5		
x	OMA (1994)	American Mink	<i>Mustela vison</i>					S4	G5		
x	OMA (1994)	Striped Skunk	<i>Mephitis mephitis</i>					S5	G5		
x	OMA (1994)	White-tailed Deer	<i>Odocoileus virginianus</i>					S5	G5		

PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
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Legend:

COSARO: Committee on Species at Risk Ontario
 COSEWIC: Committee on the status of endangered wildlife in Canada
 SARA: Species at Risk Act
 ESA: Endangered Species Act
 END: Endangered
 THR: Threatened
 SC: special Concern
 NAR: Not At Risk
 NL: Not listed
 DD: Data Deficient
 OBAAO: Ontario butterfly Atlas Online
 ORAA: Ontario Reptile and Amphibian Atlas
 OMA: Ontario Mammal Atlas
 OBBA: Ontario Breeding Bird Atlas

S-Rank:

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
 S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
 S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
 S4: Apparently Secure—Uncommon but not rare
 S5: Secure—Common, widespread, and abundant in the province
 SX: Presumed extirpated
 SH: Possibly Extirpated (Historical)
 SNR: Unranked
 SU: Unrankable—Currently unrankable due to lack of information
 SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities
 S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
 S#B- Breeding status rank
 S#N- Non Breeding status rank
 ?: Indicates uncertainty in the assigned rank

G-Rank:

G1: Extremely rare globally
 G1G2: Extremely rare to very rare globally
 G2: Very rare globally

PRESENT	SOURCE	COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	SARA	SCHEDULE	S-Rank	G-Rank	PIF priority Species (BCR 13)	GRCA
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G2G3: Very rare to uncommon globally
 G3: Rare to uncommon globally
 G3G4: Rare to common globally
 G4: Common globally
 G4G5: Common to very common globally
 G5: Very common globally; demonstrably secure
 T: Denotes that the rank applies to a subspecies or variety

Grand River Conservation Authority:
 CP=Conservation Priority

References:

1. Ontario Partners in Flight (PIF). 2008. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), Priorities, Objectives and Recommended Actions. Environment Canada (Ontario Region) and Ontario Ministry of Natural Resources. Final Draft, November, 2008.
2. COSSARO Status Endangered Species Act, 2007 (Bill 184). Schedules 1- 5. June 30 2008.
3. COSEWIC Status COSEWIC. 2014. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.
4. Endangered Species Act, 2007 (Bill 184). Schedules 1- 5. April 21, 2015
5. Credit Valley Conservation, 2010. Credit Valley Conservation Species of Conservation Concern List, Draft.
6. Grand River Conservation Authority, date unk., A checklist of Birds Within the Grand River Watershed
7. MNRF, 2000. Significant Wildlife Habitat Technical Guide - Appendix G (Habitat Descriptions)

APPENDIX 14. FISH RECORDS (GRCA, MNRF)
 Dundalk Industrial Access Road & Waste Water Treatment Facility Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

AA13-140A
 AA16-031A

GRCA ¹	MNRF ²	COMMON NAME	SCIENTIFIC NAME	SARO	SARA	S-Rank	G-Rank
Y		Rock Bass	<i>Ambloplites rupestris</i>			S5	G5
Y		Brown Bullhead	<i>Ameiurus nebulosus</i>			S5	G5
Y	Y	Northern Redbelly Dace	<i>Chrosomus eos</i>			S5	G5
Y	Y	Brook Stickleback	<i>Culaea inconstans</i>			S5	G5
	Y	Johnny Darter	<i>Etheostoma nigrum</i>			S7	G7
Y		Common Shiner	<i>Luxilus cornutus</i>			S5	G5
Y		Smallmouth Bass	<i>Micropterus dolomieu</i>			S5	G5
Y		Blacknose Shiner	<i>Notropis heterolepis</i>			S5	G5
Y		Bluntnose Minnow	<i>Pimephales notatus</i>			S5	G5
	Y	Fathead Minnow	<i>Pimephales promelas</i>			S6	G6
	Y	Creek Chub	<i>Semotilus atromaculatus</i>			S5	G5
Y	Y	Central Mudminnow	<i>Umbra limi</i>			S5	G5

1. GRCA Fish collection records provided by the GRCA. Sampling occurred during 2000 and 1996.
2. MNRF Fish collection records provided by the MNRF, Midhurst District, Sampling occurred during 2000.

Aquatic Habitat



Image 1. Deep pool in Stream Reach 2.



Image 2. Deep cut channel in Stream Reach 5.



Image 3. Undercut bank and hard pan clay



Image 4. Beaver dam and ponded area in Stream

substrate, Stream Reach 5.

Reach 10.



Image 5. High water flow in Stream Reach 7.



Image 6. Flooded Green Ash Swamp in spring, adjacent to Stream Reach 10.



Image 7. Full Fish Barrier, at downstream Stream Reach 14.



Image 8. Shallow Open Water Community Stream Reach 14.

Wildlife and Habitat



Image 9. Common Garter Snake.



Image 10. Potential Snake Hibernacula.



Image 11. Potential Snake Hibernacula.



Image 12. Potential Snake Hibernacula.



Image 13. Suspected Fox Den.



Image 14. Suspected Fox Den.



Image 15. Wildlife tracks along frozen creek.



Image 16. Deer antler and hair.

**Appendix 16
Curriculum Vitae**



Steven About

B.Sc. (Botany)

Principal . Senior Ecologist . ISA Certified Arborist

BIO

Steven has thirty five years of public and private sector experience in the disciplines of arboriculture and ecology. His considerable experience includes testifying as an expert witness before the Ontario Municipal Board, expert testimony on legal matters related to trees, urban forestry policy development and assessment of natural heritage features across southern Ontario. Steven is the author of several publications and documents related to woodland restoration, schoolyard naturalization and the status of rare tree species. He continues to lead a team of skilled and creative individuals developing practical and cost-effective solutions to urban forestry, ecology and landscape design issues using natural systems models.

RELEVANT PROJECT EXPERIENCE

URBAN FORESTRY

- Heritage (Bronte) White Oak Monitoring (Oakville)
- Downtown Brampton Street Tree Inventory (Brampton)
- Milton Urban Area Public Lands Tree Inventory (Milton)
- Whitby Tree Inventory Asset Management Project (Whitby)
- Allan Gardens Revitalization (Toronto)
- Graham Arboretum Renewal Master Plan (London)
- Aurthur Street Sanitary EA (Guelph)
- Gordon/Woolwich Streets (Guelph)
- Watson Parkway (Guelph)
- James Mountain Road (Hamilton)
- Red Hill Valley Parkway (Hamilton)
- Glen Abby Golf Club (Oakville)
- Lambton Golf Club (Toronto)
- Wrigley Canada Headquarters (Toronto)
- Canadian National Institute for the Blind Headquarters (Toronto)
- Parc Downsview Park (Toronto)
- Sanofi-Pasteur Pharmaceuticals Connaught Campus (Toronto)

EXPERT & WRITTEN TESTIMONY AND PEER REVIEW

- Residential Development OMB Hearings (Hamilton . Pickering . Toronto)
- Woodland Policy OMB (London)
- Hurontario Street Expropriation (Caledon)
- Tree Failure Assessment/Testimony (London . Stoney Creek)
- Street Tree Planting Deficiencies Review (Guelph)
- Township of Centre Wellington Tree Policy (Centre Wellington)
- Natural Environment Level 1 and 2 Report Reviews (Centre Wellington)
- Environmental Impact Study Report Reviews (Centre Wellington)

EDUCATION

1978
Bachelor of Science (Botany)
University of Guelph

PROFESSIONAL AFFILIATIONS

International Society of Arboriculture
Society for Ecological Restoration
Tallgrass Ontario
Ontario Urban Forest Council

PROFESSIONAL CERTIFICATIONS

ISA Certified Arborist ON-0323A
International Society of Arboriculture
Butternut Health Assessor No. 497
Ontario Ministry of Natural Resources
ISA Tree Risk Assessment Qualified
International Society of Arboriculture
Ontario Wetland Evaluator (OWES)
Ontario Ministry of Natural Resources

PROFESSIONAL EXPERIENCE

1991-1996
University of Guelph - The Arboretum
Coordinator of Interpretive Programs
1991-1996
The Seed to Seed (Guelph) . *Proprietor*
1978-1991
University of Guelph - The Arboretum
*Manager of Tree and Shrub
Collections and Plant Data*



ABOUT & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Designers

PROFESSIONAL DEVELOPMENT

- 2012
IML Resistograph Technical Workshop
Town of Oakville
- 2012
Tree Planting BMP's and Changes to
Development Manual Workshop
City of Kitchener
- 2012
Ottawa Heritage Tree Workshop
Ontario Urban Forest Council
- 2011
Erosion and Sediment Control Workshop
Toronto and Region Conservation Authority
- 2011
Soils and Urban Trees Conference
Toronto Botanical Gardens
- 2007
Structural Soil and Care, Selection and
Management of Urban Street Trees
Cornell University & City of Ithaca
- 2004
Statistics Intergrating Estimation
Method of Tree Risk Assessment
Arbormaster Training Canada

TEACHING

- 1999
Certified Arborist Program . Instructor
International Society of Arboriculture
- 1997
Resource Management Field Camp
Sessional Lecturer . *University of Guelph*
- 1997
Ecosystem Restoration Post Graduate
Program . Guest Lecturer
Niagara College
- 1995-1996
A Life Zone Approach to Schoolyard
Naturalization Series Workshops
University of Guelph
- 1978-1996
Natural Interpretation Workshops
University of Guelph

COMMUNITY SERVICE

- 1990-1991
Trees For Guelph

ECOLOGICAL RESTORATION

- Creditview Crossing Community Woodlot Management Plans (Brampton)
- Jefferson Forest Community Edge Management Plans (Richmond Hill)
- Wrigley Canada Ravine Stewardship Plan (Toronto)
- Private Residential Stewardship Plans (Toronto)
- The Rosewood Condominium Stewardship Plan (Toronto)
- Environment Canada - Downsview Campus Naturalization Master Plan (Toronto)
- Health Canada - Campus Naturalization Master Plan (Toronto)
- Canada Centre for Inland Waters - Campus Naturalization Master Plan (Burlington)
- Wellington Terrace Wetland Enhancement (Elora)
- A.M. Cunningham Public School Naturalization (Hamilton)
- Victory Public School Naturalization (Milton)
- Thornhill Woods Community Woodlot Edge Management Plans (Vaughan)
- Thornhill Ravines Community Valley Features Edge Management Plan (Vaughan)
- Upper Thornhill Estates Community Natural Systems Edge Management Plans (Vaughan)
- Vellore Village Woodlot Edge Management Plans (Vaughan)

ENVIRONMENTAL STUDIES

- Jefferson Forest Community EIS (Richmond Hill)
- Community Planning Area Subwatershed Study (Centre Wellington)
- Wetland Boundary Delineation (Erin)
- Sunset Hills Estates EIS (Woolwich)
- Valley Road Estates EIS (Guelph)
- Bird Landing EIS (Guelph)
- River Systems Assessment Study (Guelph)
- Sawmill Valley EIS (Mississauga)
- Blue Heron Ridge EIS (Cambridge)
- Mount Pleasant GO Station EA (Brampton)
- ASECO Intergrated Systems EIS (Oakville)
- Functional Servicing Development Area Study (King)
- King City East Buffer Strategy (King)
- MTRCA Woody Plant Selection Guidelines (Greater Toronto Bio-Region)
- West Humber River Naturalization Plan (Toronto)
- Highway 407 ETR (Toronto)
- E.T. Seton Park Naturalization Plan (Toronto)
- Brampton Sports Parks (Brampton)
- Brampton Vegetation Assessment (Brampton)

PUBLICATIONS

- Aboud, S. W. and H. Kock. 1994 (1996 Rev. ed.) A life zone approach to school yard naturalization: the Carolinian life zone. University of Guelph. Guelph, Ontario. 86 pp.
- Waldron, G.E., S. W. Aboud, J. D. Ambrose and G.A. Meyers. 1987. Shumard Oak (*Quercus shumardii*) in Canada. *Can. Field Naturalist* 101: 532-538.
- Ambrose, J.D. and S. W. Aboud. 1985. Status report on *Castanea dentata*. COSEWIC, Ottawa.
- Ambrose, J.D. and S. W. Aboud. 1983. Status report on *Magnolia acuminata*. COSEWIC, Ottawa.
- Ambrose, J.D. and S. W. Aboud. 1982a. Status report on *Fraxinus quadrangulata* COSEWIC, Ottawa
- Ambrose, J.D. and S. W. Aboud. 1982b. Status report on *Ptelea trifoliata*. COSEWIC, Ottawa.



Ryan Hamelin

B.Sc (Evn.) . M.Sc.

Terrestrial and Wetland Ecologist

ELC Certified . OWES Certified

BIO

Ryan is an experienced ecologist with a diverse background in the public and private sectors. He has a proven track record of liaising with government agencies, engineers, landowners, and contractors to complete successful, multifaceted projects. Ryan's strong project management and field ecology skills are successfully applied to Municipal Class Environment Assessments, Environmental Impact Studies, wetland restoration, wetland evaluations, vegetation surveys, habitat surveys and water quality monitoring projects across southern Ontario.

SELECTED PROJECT EXPERIENCE

ECOLOGICAL RESTORATION

- Eden Park Butternut Monitoring (Hamilton)
- Rondeau Wetland Restoration and Watershed Buffer Program (Chatham-Kent)*
- Carolinian Forest Tree Planting Project (Chatham-Kent)*

ENVIRONMENTAL STUDIES

- Hillsburgh Dam Municipal Class Environmental Assessment - Phase 1 (Erin)
- Bride Road Bridge Scoped Environmental Assessment (Minto)
- Kleinburg Summit Edge Management Plan (Vaughan)
- Side Road 24 Bridge Municipal Class Environmental Assessment (Wellington County)
- Southgate Drive Environmental Impact Study (Guelph)
- Chancellors Way Scoped Environmental Impact Study (Guelph)
- Cambridge Country Manor Wetland Evaluation (Cambridge)
- Rondeau Vegetation Monitoring Surveys (Chatham)*
- Loon Surveys (Killarney)*
- Benthic Biomonitoring Surveys (Simcoe County)*
- Ladysmith Wetland Evaluation (St. Clair)*

AQUATIC PROJECTS

- Gore Road Culverts Fish Rescue (Wellington County)
- Leslie Road Bridge Fish Rescue (Wellington County)
- Duffy's Lane Fish Rescue (Caledon)
- Creditview Culverts Road Bridge Fish Rescue (Caledon)
- Arkell Dam Fish Rescue (Guelph)
- Talbot Tract Water Quality Monitoring (Chatham)*
- Environ Property Water Quality Monitoring (St. Williams)*
- Fish Habitat/Population Electrofishing Surveys (Toronto Harbor)*
- Provincial Water Quality Monitoring Network (Simcoe County)*
- Near Shore Fish Habitat Evaluation (Simcoe County)*

*Work completed while at Ontario Ministry of Natural Resources, Toronto Region Conservation Authority or Severn Sound Environmental Association.

EDUCATION

2012

Masters of Science
Integrative Biology
University of Guelph

2008

Bachelor of Science
Environmental Science
University of Guelph

PROFESSIONAL EXPERIENCE

2014-present

Aboud & Associates Inc.
Terrestrial and Wetland Ecologist

2013-2014

Ontario Ministry of Natural Resources
Coastal Wetland Biologist

2013

Toronto & Region Conservation Authority
Environmental Field Labourer

2006-2010

Severn Sound Environmental Association
Environmental Technician



ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Designers

PROFESSIONAL CERTIFICATIONS

2013
Wetland Evaluation Training Course
Ontario Ministry of Natural
Resources and Forestry

2013
Ecological Land Classification
Training Course (ELC)
Ontario Ministry of Natural
Resources and Forestry

PROFESSIONAL DEVELOPMENT

- 2015 - Natural Heritage Information Center Data Sensitivity Training
- 2015 - MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings. Fisheries Specialist Training Session (Ontario Ministry of Transportation)
- 2014 - Great Lakes Wetland Day
- 2013 - Wetland Graminoid Identification Workshop (Royal Botanical Gardens)
- 2013 - Ontario Fish Identification Workshop (Royal Ontario Museum)
- 2013 - Introduction to the Canadian Environmental Assessment Act (Canadian Environmental Assessment Agency)
- 2012 - Water Management & Wetland Restoration Training Course (Ontario Ministry of Natural Resources and Forestry)



Cheryl-Anne Ross

Fish and Wildlife Technologist Dip., B.Sc.
Wildlife Ecologist

EDUCATION

- 2007
B.Sc. Natural Resource Management
University of Northern British Columbia
- 2004
Fish and Wildlife Technologist Diploma
Sir Sanford Fleming College

PROFESSIONAL EXPERIENCE

- 2011-2014
Stantec
Terrestrial Ecologist
- 2008-2010
Natural Resources Solutions Inc.
Terrestrial and Wetland Ecologist
- 2006
Earl Rowe Provincial Park
Natural Heritage Educator
- 2004
Ministry of Natural Resources
Field Ecologist
- 2003
Wye Marsh Wildlife Centre
Outdoor Education/Naturalist

PROFESSIONAL CERTIFICATIONS

- Ecological Land Classification (ELC)
Ontario Ministry of Natural Resources
- ISA Certified Arborist
International Society of Arboriculture



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BIO

Cheryl-Anne Ross has a comprehensive understanding of the natural environment and the tools that are used to evaluate it. Cheryl-Anne completed her Undergraduate degree in NREM-Wildlife and Fisheries Biology at the University of Northern British Columbia, has a Technical Diploma in Fish and Wildlife Technology from Sir Sanford Fleming College and a decade of experience in the public and private sectors. In addition to working as a Natural Heritage Educator at provincial parks, her professional experience includes working on residential and industrial development and renewable energy projects throughout Ontario. Cheryl-Anne conducts a broad range of natural heritage inventory and assessments including botanical inventories, ELC, species at risk reports, environmental assessments, environmental impact statements, and monitoring for wildlife (avian, herptiles and mammals) and wildlife habitat.

SELECTED PROJECT EXPERIENCE

OIL AND GAS DEVELOPMENT

- TransCanada Energy East Pipeline (Ontario) *with Stantec
- Payne Sarnia Pipeline (Sarnia) *with Stantec
- Natural Gas Development Project (Burlington.Oakville) *with Stantec
- Brantford Kirkwall Pipeline (Kirkwall) *with Stantec
- NOVA Genesis Pipeline Extension (Corunna) *with Stantec

RENEWABLE ENERGY

- Amherst Island Wind Farm (Amherst Island) *with Stantec
- Cedar Point Wind Farm (Forest) *with Stantec
- Bow Lake Wind Farm (Montreal River Harbour) *with Stantec
- Niagara Region Wind Centre (Niagara Region) *with Stantec

INDUSTRIAL DEVELOPMENT

- Dundalk Industrial Park Municipal Class Environmental Assessment (Southgate)
- Erin Pit Extension (Orangeville) *with Stantec
- Industrial Development Project (Milton) *with Stantec
- NOVA 2020 Plant Expansion (Corunna) *with Stantec

RESIDENTIAL DEVELOPMENT

- Westside, Vista Hills, Clair Creek Meadows Developments (Waterloo) *with Stantec

MUNICIPAL INFRASTRUCTURE

- Hillsburgh Dam Municipal Class Environmental Assessment (Erin)

COMMUNITY SERVICE

2009

Ontario Streams
Spawning Survey

2009

Ontario Public Interest Research Group
Tree Planter

2004

Florida Panther National Wildlife Refuge
Invasive Plant Species Control

ENVIRONMENTAL IMPACT STUDIES . WILDLIFE STUDIES

- *Sunset Hills Estates Wildlife Studies (Maryhill)*
- *Martin Street School Environmental Impact Study (Milton)*
- *Wellington Street Improvements Active Bird Nest Inventory (Guelph)*
- *Listowel Environmental Impact Study (North Perth)*
- *Private Property Severance, Environmental Impact Study (Puslinch)*
- *Block 18 Woodlot Active Bird Nest Inventory (Vaughan)*
- *Elora Development Active Bird Nest Inventory (Centre Wellington)*
- *Rockwood Commercial Development Amphibian Habitat Assessment (Guelph/Eramosa)*



Matthew Iles

M.Sc., B.Sc.
Biologist

BIO

Matthew is a well-rounded biologist with diverse experiences studying aquatic and terrestrial ecosystems in Europe, South America and Ontario. He has demonstrated an ability to design and implement research projects, in addition to working closely with indigenous communities, volunteers, landowners and other vested stakeholders, on conservation and ecology projects. An avid field ornithologist, Matthew has held positions and volunteered with the Canadian Wildlife Service, Bird Studies Canada and Long Point Bird Observatory.

SELECTED PROJECT EXPERIENCE

ORNITHOLOGY

- Nanaksar Gurdwara Gursikh Temple Breeding Bird Survey (Brampton)
- Caledon Structure (Bridge/Culvert) Program Nest Searches (Caledon)
- Bird Landing, breeding bird monitoring and protection measures (Guelph)
- Caledon East Reservoir Nest Searches (Caledon)
- Courtice Road Breeding Bird Survey (Clarington)
- Stone Road Reconstruction Nest Search (Guelph)
- Britannia Rd. Woodlot, forest bird breeding survey (Halton Region)
- French's Bridge Rehabilitation Nest Search (Puslinch)
- Perth County Rd. 313 Bridge, nesting swallow inventory (Perth County)
- Private Property Severance, 87 acre breeding bird survey (Bowmanville)
- Waterfowl capture, observation and study (Prince Edward County, Toronto, Hamilton, Wolfe Island, Lake St. Clair) *with Long Point Waterfowl and Canadian Wildlife Service
- Population counts and behavioral observations (Manitoulin Island) *with Long Point Waterfowl
- Golden-winged Warbler (SAR - Thr.) capture, blood sampling, territory assessments (Elgin County) *with Bird Studies Canada
- Eastern Whip-poor-will (SAR – Thr.) point count surveys (Elgin County) *with Bird Studies Canada
- Migration monitoring, including capture, banding, daily census (Kanata, Long Point) *with Innis Point Bird Observatory and Long Point Bird Observatory
- Grey Jay nest searching (Algonquin Provincial Park) *with University of Guelph
- Breeding ecology of Tree Swallows (Long Point) *with Long Point Bird Observatory/University of Guelph
- Inventorying rainforest birds (Ecuador) *with Global Vision International
- Hen Harrier nest searching (Isle of Man, UK) *with The Environmental Partnership

EDUCATION

2007
M.Sc. of Restoration Ecology of
Terrestrial and Aquatic Environment
University of Liverpool

2006
B.Sc. Zoology (with honours)
University of Liverpool

PROFESSIONAL EXPERIENCE

2012
Long Point Waterfowl
Research Technician

2012
Bird Studies Canada
Research Technician

2012
Innis Point Bird Observatory
Bander-in-charge

2008-2009
Global Vision International, Rainforest
Conservation and Community
Development Expedition
Field Staff and Biologist

2007-2008
The Environment Partnership
Ecologist



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COMMUNITY SERVICE

2011-2012
Canadian Wildlife Service
Waterfowl Research Technician

2012
Norris Lab University of Guelph
Avian Technician

2012
Carleton University
Entomology Lab Technician

2011-2012
Long Point Bird Observatory
Avian Biologist

2010
Halton Region Conservation Authority
Casual Volunteer

2009
Nazca Institute for Marine Research
Marine Biologist

ENVIRONMENTAL IMPACT STUDIES (EIS)

- Sunset Hills Estates, Anuran call survey and Breeding bird survey, GIS, report (Maryhill)
- Lakeshore Boulevard West Development Natural Heritage Impact Study (Toronto)
- Hill Street Bridge Environmental Impact Study (Woolwich)
- Wellington Terrace Service Road Environmental Impact Statement (Centre Wellington)
- Private Property Severance, Anuran Call Survey, breeding bird survey, GIS, report (Puslinch)
- Woodlawn Road Development Environmental Impact Study (Guelph)
- Brock Road Development Environmental Impact Study (Puslinch)
- Longyards Community Trail Impact Study (Vaughan)
- Gordon Street Development Natural Heritage Peer Review (Guelph)

BOTANY, STEWARDSHIP, HERPETOLOGY, MAMMALS

- Eden Park Butternut Restoration Monitoring Program (Hamilton)
- Woodlawn Road Development Environmental Impact Study (Guelph)
- Elmira Road Industrial Expansion Vegetation Inventory (Guelph)
- 11th Concession Road Development Vegetation Inventory (Hamilton)
- Habitat and vegetation assessments for Golden-winged Warbler and Blue-winged Warbler (Elgin County, Norfolk County) *with Bird Studies Canada
- Habitat stewardship and restoration, including tree sapling planting and invasive species control *with Long Point Bird Observatory
- Reptile and Amphibian Inventory (Ecuador) *with Global Vision International
- Surveying and stewardship for protected amphibian species, including great-crested newt (UK) *with The Environmental Partnership
- Surveying protected mammal species, including bats and water vole (UK) *with The Environmental Partnership

ENTOMOLOGY

- Dung beetle and benthic invertebrate communities in fragmented rainforest habitats (Ecuador) *with Global Vision International
- Butterfly Inventory (Ecuador) *with Global Vision International
- Effect of species-rich grassland translocation on invertebrate communities, with particular reference to Carabid beetles (Manchester, UK) *M.Sc. Research, University of Liverpool

MARINE BIOLOGY

- Willoughby Road Bridge Fish Rescue (Caledon)
- Arkell Dam Fish Rescue (Guelph)
- Artisanal lobster fisheries and by-catch (Ecuador) *with Nazca Institute for Marine Research
- Colonization of man-made substrates by an invasive barnacle species (Liverpool, UK) *with University of Liverpool
- Transition rates in sessile inter-tidal organisms (Liverpool, UK) *with University of Liverpool

PUBLICATIONS

Bracewell SA, Spencer M, Marrs RH, Iles M, Robinson LA (2012). Cleft, Crevice, or the Inner Thigh: 'Another Place' for the Establishment of the Invasive Barnacle *Austrominius modestus* (Darwin, 1854). PLoS ONE 7(11)

COMMON_NAME	SCIENTIFIC_NAME	COSARO	COSEWIC	S_RANK	G_RANK	Area Sensitive species	Area Required (ha)	PIF Species (BCR 13)	GRCA (web)	PC A		PC B		PC C		PC D		PC E		PC F		PC G		PC H		PC I		PC J		PC K		Overall Highest Breeding Evidence		
										Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE	Max#	HBE		Max#	HBE
Mallard	Anas platyrhynchos			S5	G5					0		0		0		0		0		0	FO	0	FO	0		0		0		0		Observed		
Red-tailed Hawk	Buteo jamaicensis	NAR	NAR	S5	G5					0		0		0		0		0		1	X	0		0		0		0		0		Observed		
Killdeer	Charadrius vociferus			S5B,S5N	G5					0		0		0		0		0		0		1	A	0		0		0		0		Probable		
Ring-billed Gull	Larus delawarensis			S5B,S4N	G5					0		0		0		0		0		0	FO	0		0		0		0	FO	0		Observed		
Mourning Dove	Zenaidura macroura			S5	G5					0		0		0		0		0		0		0		0		0		0		1	S	Possible		
Yellow-bellied Sapsucker	Sphyrapicus varius			S5B	G5	✓	2-5	CP		0		0		0		0		0		0		1	S	0		0		1	H	0		Possible		
Downy Woodpecker	Picoides pubescens			S5	G5					0		0		0		0		0		1	H	0		0		0		0		0		Possible		
Hairy Woodpecker	Picoides villosus			S5	G5	✓	4-8			0		0		0		0		0		0		0		0		0		1	H	0		Possible		
Northern Flicker	Colaptes auratus			S4B	G5			✓		0		1	H	0		1	T	0		0		0		0		1	T	1	T	0		Probable		
Pileated Woodpecker	Dryocopus pileatus			S5	G5	✓	>40	CP		0		0	T	0		0		0		0		0		0		0		0		1	S	Probable		
Eastern Wood-pewee	Contopus virens	SC	SC	S4B	G5			✓		1	S	0		1	S	1	S	1	S	0		0		1	T	2	T	0		0		Probable		
Alder Flycatcher	Empidonax alorum			S5B	G5				CP	0		0		0		0		0		1	S	1	S	0		0		0		0		Possible		
Great Crested Flycatcher	Myiarchus crinitus			S4B	G5					0		1	S	1	S	0		0		0		0		2	H	0		1	S	0		Possible		
Tree Swallow	Tachycineta bicolor			S4B	G5					0		0		0		0		0		50	H	20	H	0		0		0		0		Possible		
Cliff Swallow	Petrochelidon pyrrhonota			S4B	G5				CP	0		0		0		0		0		0		0		0		0		0		10	H	Possible		
Barn Swallow	Hirundo rustica	THR	THR	S4B	G5				CP	0		0		0		0		0		0		2	H	0		0		0		0		Possible		
Blue Jay	Cyanocitta cristata			S5	G5					0		1	H	1	H	1	A	1	H	0	A	0		1	A	1	A	0		0		Probable		
American Crow	Corvus brachyrhynchos			S5B	G5					0		0		4	A	1	A	3	A	0		1	H	0		2	H	1	H	1	H	Probable		
Black-capped Chickadee	Poecile atricapillus			S5	G5				CP	0		0		0		0		1	S	0		0		2	S	0		2	S	1	S	Possible		
White-breasted Nuthatch	Sitta carolinensis			S5	G5	✓	>10			3	P	0		0		0		0		0		0		1	S	0		0		0		Probable		
Brown Creeper	Certhia americana			S5B	G5	✓	>30	CP		0		0		0		1	S	0		0		0		0		0		0		0		Possible		
House Wren	Troglodytes aedon			S5B	G5					0		1	T	0		1	S	0		0		0		2	S	0		0		0		Probable		
American Robin	Turdus migratorius			S5B	G5					0		1	T	2	T	2	S	0		0		2	A	1	S	1	S	1	A	2	A	Probable		
Gray Catbird	Dumetella carolinensis			S4B	G5				CP	0		0		0		0		0		1	S	0		0		0		0		0		Possible		
Cedar Waxwing	Bombicilla cedrorum			S5B	G5					9	H	1	H	0		1	S	2	H	2	H	1	H	9	H	2	H	0		2	H	Possible		
Warbling Vireo	Vireo gilvus			S5B	G5					0		0		0		0		0		0		1	S	0		0		0		0		Possible		
Red-eyed Vireo	Vireo olivaceus			S5B	G5					1	S	0		3	T	1	S	0		1	S	1	S	2	T	3	T	1	S	0		Probable		
Yellow Warbler	Dendroica petechia			S5B	G5					1	S	0		0		0		0		2	T	1	T	0		0		0		0		Probable		
Yellow-rumped Warbler	Dendroica coronata			S5B	G5				CP	0		0		0		0		0		0		0		0		0		0		1	S	Possible		
Pine Warbler	Dendroica pinus			S5B	G5	✓	15-30	CP		0		0		0		0		1	S	0		0		0		0		0		0		Possible		
American Redstart	Setophaga ruticilla			S5B	G5	✓	>100	CP		2	S	0		0		0		0		1	S	0		0		0		0		0		Possible		
Ovenbird	Seiurus aurocapilla			S4B	G5	✓	>70	CP		0		0		1	S	0		0		0		0		0		2	S	0		0		Possible		
Northern Waterthrush	Seiurus noveboracensis			S5B	G5					0		0		0		1	S	0		0		0		0		0		0		0		Possible		
Mourning Warbler	Oporornis philadelphia			S4B	G5				CP	2	T	0		0		0		0		0		0		0		0		0		0		Probable		
Common Yellowthroat	Geothlypis trichas			S5B	G5					1	T	2	T	0		0		0		1	T	1	T	2	T	0		0		1	S	0		Probable
Rose-breasted Grosbeak	Pheucticus ludovicianus			S4B	G5			✓		0		0		1	S	1	S	0		0		0		0		0		0		0		Possible		
Indigo Bunting	Passerina cyanea			S4B	G5					2	S	2	T	0		0		0		1	T	1	S	2	S	0		0		1	T	Probable		
Chipping Sparrow	Spizella passerina			S5B	G5					1	T	0		0		0		0		0		1	T	1	S	0		0		1	T	Probable		
Savannah Sparrow	Passerculus sandwichensis			S4B	G5	✓	>50	✓	CP	0		0		0		0		1	A	0		0		0		0		0		1	S	Probable		
Song Sparrow	Melospiza melodia			S5B	G5					2	T	1	T	0		1	S	0		4	T	2	A	1	CF	1	T	2	T	2	A	Confirmed		
Swamp Sparrow	Melospiza georgiana			S5B	G5				CP	3	S	0		0		0		0		2	T	1	T	2	T	0		0		0		probable		
White-throated Sparrow	Zonotrichia albicollis			S5B	G5				CP	2	S	4	T	3	T	2	S	0		0		0		1	T	0		0		0		probable		
Bobolink	Dolichonyx oryzivorus	THR	THR	S4B	G5	✓	>10	✓	CP	1	S	0		0		0	S	0		0		0		0		0		0		0		Possible		
Red-winged Blackbird	Agelaius phoeniceus			S4	G5					2	S	0		0		0		0		14	A	2	S	3	S	0		0		2	S	Probable		
Eastern Meadowlark	Sturnella magna	THR	THR	S4B	G5	✓	>10	✓	CP	0		0		0		0		0		0		0		0		0		0		0	H	1	T	Probable
Common Grackle	Quiscalus quiscula			S5B	G5					1	H	1	H	0		0		2	H	2	H	4	H	0		1	S	4	A	0		Probable		
Brown-headed Cowbird	Molothrus ater			S4B	G5					0		1	S	0		0		0		1	S	1	S	1	S	0		0		1	S	Possible		
American Goldfinch	Carduelis tristis			S5B	G5				CP	0		0		0		0		2	H	4	S	2	S	2	H	0		0		2	H	Possible		

APPENDIX 17. FOREST WETLAND BREEDING BIRD SURVEY RESULTS
 Dundalk Industrial Access Road Waste Water Treatment Plan Expansion
 Environmental Assessment, Natural Heritage - Existing Conditions

Project: AA13-140A
 AA16-031A

Legend:

COSARO: Committee on Species at Risk Ontario
 COSEWIC: Committee on the status of endangered wildlife in Canada
 SARA: Species at Risk Act
 ESA: Endangered Species Act
 END: Endangered
 THR: Threatened
 SC: special Concern
 NAR: Not At Risk
 NL: Not listed
 DD: Data Deficient

Breeding Evidence Codes

<i>Observed</i>	<i>Probable</i>	<i>Confirmed</i>
X-no breeding evidence	P-Pair	DD-Distracted display
FO-flyover	T-Territory (2 visits)	NU-Used nest
	D-Display	FY-Fledged young
<i>Possible</i>	V-Visiting nest	AE-Adult entering/leaving nest
H-Suitable habitat	A-Agitated	FS-Adult carrying fecal sac
S-Singing male	B-Broodpatch	CF-Adult carrying food
	N-Nest building or excavation	NE-Nest with eggs
		NY-Nest with young

S-Rank:

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
 S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
 S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
 S4: Apparently Secure—Uncommon but not rare
 S5: Secure—Common, widespread, and abundant in the province
 SX: Presumed extirpated
 SH: Possibly Extirpated (Historical)
 SNR: Unranked
 SU: Unrankable—Currently unrankable due to lack of information
 SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities
 S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
 S#B- Breeding status rank
 S#N- Non Breeding status rank
 ?: Indicates uncertainty in the assigned rank

G-Rank:

G1: Extremely rare globally
 G1G2: Extremely rare to very rare globally
 G2: Very rare globally
 G2G3: Very rare to uncommon globally
 G3: Rare to uncommon globally
 G3G4: Rare to common globally
 G4: Common globally
 G4G5: Common to very common globally
 G5: Very common globally; demonstrably secure
 T: Denotes that the rank applies to a subspecies or variety

Grand River Conservation Authority:

CP=Conservation Priority

References:

Ontario Partners in Flight (PIF). 2008. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), Priorities, Objectives and Recommended Actions. Environment Canada (Ontario Region) and Ontario Ministry of Natural Resources. Final Draft, November, 2008.
 COSSARO Status Endangered Species Act, 2007 (Bill 184). Schedules 1- 5. June 30 2008.
 COSEWIC Status COSEWIC. 2014. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.
 Endangered Species Act, 2007 (Bill 184). Schedules 1- 5. April 21, 2015
 Grand River Conservation Authority, date unk., A checklist of Birds Within the Grand River Watershed

COMMON NAME	SCIENTIFIC NAME	COSARO	COSEWIC	S_RANK	G_RANK	Area Sensitive Species	Area Required (ha)	PIF Species (BCR 13)	GRCA (web)	A	B	C	D	Breeding Evidence Observed for study area
										HBE	HBE	HBE	HBE	
Great Blue Heron	Ardea herodias			S4	G5								X	Observed
Canada Goose	Branta canadensis			S5	G5			CP					FY	Confirmed
Wood Duck	Aix sponsa			S5	G5								X	Observed
Green-winged Teal	Anas crecca			S4	G5								H	Observed
Mallard	Anas platyrhynchos			S5	G5								X	Observed
Ruffed Grouse	Bonasa umbellus			S4	G5			CP		T			H	Probable
Killdeer	Charadrius vociferus			S5B,S5N	G5				A					Probable
Lesser Yellowlegs	Tringa flavipes			S4B,S4N	G5								H	Possible
Solitary Sandpiper	Tringa solitaria			S4B	G5								H	Possible
Spotted Sandpiper	Actitis macularius			S5	G5			CP					H	Possible
Yellow-bellied Sapsucker	Sphyrapicus varius			S5B	G5	✓	2-5	CP			S			Possible
Downy Woodpecker	Picoides pubescens			S5	G5					H	FY			Confirmed
Hairy Woodpecker	Picoides villosus			S5	G5	✓	4-8		P					Probable
Northern Flicker	Colaptes auratus			S4B	G5			✓					X	observed
Eastern Wood-pewee	Contopus virens	SC	SC	S4B	G5			✓		S	S	S		possible
Great Crested Flycatcher	Myiarchus crinitus			S4B	G5					S		S		possible
Blue Jay	Cyanocitta cristata			S5	G5				H		A			probable
American Crow	Corvus brachyrhynchos			S5B	G5				A	A		A		probable
Black-capped Chickadee	Poecile atricapillus			S5	G5			CP			S			possible
White-breasted Nuthatch	Sitta carolinensis			S5	G5	✓	>10						S	possible
House Wren	Troglodytes aedon			S5B	G5				S		S			possible
American Robin	Turdus migratorius			S5B	G5					S	H	A		probable
Gray Catbird	Dumetella carolinensis			S4B	G5			CP			S			possible
Cedar Waxwing	Bombycilla cedrorum			S5B	G5					H				possible
Red-eyed Vireo	Vireo olivaceus			S5B	G5				S	S			A	probable
Yellow Warbler	Dendroica petechia			S5B	G5								S	possible
American Redstart	Setophaga ruticilla			S5B	G5	✓	>100	CP			S			possible
Common Yellowthroat	Geothlypis trichas			S5B	G5				S	S	S	S		possible
Indigo Bunting	Passerina cyanea			S4B	G5				S	S	S			possible
Field Sparrow	Spizella pusilla			S4B	G5			✓	CP				S	possible
Savannah Sparrow	Passerculus sandwichensis			S4B	G5	✓	>50	✓	CP			S		possible
Song Sparrow	Melospiza melodia			S5B	G5				S		A	S		probable
Swamp Sparrow	Melospiza georgiana			S5B	G5			CP			S			possible
White-throated Sparrow	Zonotrichia albicollis			S5B	G5			CP	S		S			possible
Red-winged Blackbird	Agelaius phoeniceus			S4	G5						S	A		probable
Eastern Meadowlark	Sturnella magna	THR	THR	S4B	G5	✓	>10	✓	CP				S	possible
Common Grackle	Quiscalus quiscula			S5B	G5								H	possible
American Goldfinch	Carduelis tristis			S5B	G5			CP	H		H			possible

Legend:

COSARO: Committee on Species at Risk Ontario
 COSEWIC: Committee on the status of endangered wildlife in Canada
 SARA: Species at Risk Act
 ESA: Endangered Species Act
 END: Endangered
 THR: Threatened
 SC: special Concern
 NAR: Not At Risk
 NL: Not listed
 DD: Data Deficient

Breeding Evidence Codes

Observed
 X-no breeding evidence
 FO-flyover

Possible
 H-Suitable habitat
 S-Singing male

Probable
 P-Pair
 T-Territory (2 visits)
 D-Display
 V-Visiting nest
 A-Agitated
 B-Broodpatch
 N-Nest building

Confirmed
 DD-Distraction display
 NU-Used nest
 FY-Fledged young
 AE-Adult entering/leaving nest
 FS-Adult carrying fecal sac
 CF-Adult carrying food
 NE-Nest with eggs
 NY-Nest with young

S-Rank:

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
S4: Apparently Secure—Uncommon but not rare
S5: Secure—Common, widespread, and abundant in the province
SX: Presumed extirpated
SH: Possibly Extirpated (Historical)
SNR: Unranked
SU: Unrankable—Currently unrankable due to lack of information
SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities
S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
S#B- Breeding status rank
S#N- Non Breeding status rank
?: Indicates uncertainty in the assigned rank

G-Rank:

G1: Extremely rare globally
G1G2: Extremely rare to very rare globally
G2: Very rare globally
G2G3: Very rare to uncommon globally
G3: Rare to uncommon globally
G3G4: Rare to common globally
G4: Common globally
G4G5: Common to very common globally
G5: Very common globally; demonstrably secure
T: Denotes that the rank applies to a subspecies or variety

Grand River Conservation Authority:

CP=Conservation Priority

References:

Ontario Partners in Flight (PIF). 2008. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), Priorities, Objectives and Recommended Actions. Environment Canada (Ontario Region) and Ontario Ministry of Natural Resources. Final Draft, November, 2008.
COSSARO Status Endangered Species Act, 2007 (Bill 184). Schedules 1-5. June 30 2008.
COSEWIC Status COSEWIC. 2014. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.
Endangered Species Act, 2007 (Bill 184). Schedules 1- 5. April 21, 2015
Grand River Conservation Authority, date unk., A checklist of Birds Within the Grand River Watershed

Appendix E – Agency, Indigenous and Public Consultation

Official Project Contact List

Township of Southgate
Class Environmental Assessment
Village of Dundalk Wastewater System
OFFICIAL CONTACT LIST

	Agency	Contact
1 Email	Ministry of Environment, Conservation and Parks Environmental Assessment and Approvals Branch (EAAB) 135 St. Clair Avenue West, 1 st Floor Toronto, Ontario M4V 1P5	Director, Class EA's and Declaration Section EABDirector@ontario.ca EA Notices to SWRegion (MECP) eanotification.swregion@ontario.ca
2 Email	Ministry of Environment, Conservation & Parks London Regional Office 2 nd Floor, 733 Exeter London, Ontario N6E 1L3	Pierre Adrien Manager (Acting) pierre.adrien@ontario.ca Craig Newton Environmental Planner/Environmental Assessment Co-ordinator Technical Support Section, Southwest Region Tel: 519-873-5012 craig.newton@ontario.ca
3 Email	Ministry of Environment, Conservation & Parks Owen Sound District Office 3 rd Floor, 101 – 17th Street East Owen Sound, Ontario N4K 0A5	John S. Ritchie, Manager John.s.ritchie@ontario.ca 519-371-4687
4 Email	Ministry of Municipal Affairs and Housing Exeter Road Complex 2 nd Floor, 659 Exeter Road London, Ontario N6E 1L3	Mr. Erick Boyd, Manager erick.boyd@ontario.ca Tyler Shantz, Team Lead, Planning (Acting) Tyler.Shantz@ontario.ca
5 Email	Ministry of Natural Resources and Forestry Midhurst District 2284 Nursery Road Midhurst, Ontario L9X 1N8	Mr. Dan Thompson, District Manager dan.l.thompson@ontario.ca
6 Email	Ministry of Natural Resources and Forestry Midhurst District Owen Sound Field Office 1450 7 th Avenue East OWEN SOUND, Ontario N4K 2Z1	Tracy Allison, District Supervisor tracy.allison@ontario.ca
7 Email	Ministry of Tourism, Culture and Sport 401 Bay Street, Suite 1700 Toronto, Ontario M7A 0A7	Laura Hatcher, Team Lead, Heritage Planners Culture Division, Programs and Services Branch, Culture Services Unit Laura.E.Hatcher@ontario.ca Tel.: 416-314-7145 Fax: 416-314-7175
8 Email	Ministry of Transportation Corridor Management Office, West Region 659 Exeter Road, London, Ontario N6E 1L3	Christopher J. Dixon Corridor Management Planner cc: Jessica Pegelo MTO CMO Owen Sound, Ontario 1-800-265-6072 ext. 519 873 4598

	Agency	Contact
9 Email	Ministry of Agriculture, Food and Rural Affairs (OMAFRA) 1 Stone Road West 4NE Guelph, Ontario N1G 4Y2 Toll Free General: 1-877-424-1300	Ag Info ag.info.omafra@ontario.ca Marnie Webb, Team Lead (A) Agricultural Information Contact Centre (Cell 519-400-3297) **Attention: David Marriott, Rural Planner, Western Ontario
10 Email	Department of Fisheries and Oceans Navigable Waters Protection Office Canadian Coast Guard 100 Front Street South Sarnia, Ontario N7T 2M4	**Correspondence should be sent to the attention of: TRIAGE GROUP fisheriesprotection@dfo-mpo.gc.ca Tel: 1-855-852-8320 OP Habitat (DFO/MPO) DFO.OPHabitat.MPO@dfo-mpo.gc.ca
12 Email	Grey-Bruce Health Unit 101 – 17 th Street East Owen Sound, Ontario N4K 0A5	Director publichealth@publichealthgreybruce.on.ca 519-376-9420 Ext. 1518
13 Email	Grand River Conservation Authority 400 Clyde Road, P.O. Box 729 Cambridge, Ontario N1R 5W6	Chris Lorenz, M.Sc., Resource Planner 519-621-2763 Ext. 2236 clorenz@grandriver.ca
	Indigenous	Contact
14 Email	Six Nations of the Grand River Territory P.O. Box 5000 1695 Chiefswood Road Ohsweken, Ontario NOA 1M0	Chief Mark B. Hill markhill@sixnations.ca 519-445-2201 cc: Tammy Martin tammymartin@sixnations.ca cc: Robbin Vanstone Consultation Supervisor rvanstone@sixnations.ca 519-753-0665
15 Email	Six Nations of the Grand River Territory P.O. Box 5000 1695 Chiefswood Road Ohsweken, Ontario NOA 1M0	Lonny Bomberry Lands and Resources Director lonnybomberry@sixnations.ca 519-753-0665 Cc: Tayler Hill Tayler.hill@sixnations.ca Cc: Tammy Martin tammymartin@sixnations.ca
16 Email	Mississaugas of the New Credit First Nation (MNCFN) 2789 Mississauga Road, R.R. #6 Hagersville, Ontario NOA 1H0	Chief R. Stacey LaForme Stacey.Laforme@mncfn.ca 905-768-1133 cc: Mark LaForme Director of Consultation, DOCA Mark.LaForme@mncfn.ca DOCA.Admin@mncfn.ca

	Indigenous	Contact
16 Email	Mississaugas of the New Credit First Nation (MNCFN) 2789 Mississauga Road, R.R. #6 Hagersville, Ontario N0A 1H0	Cc: Abby LaForme Abby.LaForme@mncfn.ca
17 Email	Mississaugas of the New Credit First Nation (MNCFN) 2789 Mississauga Road, R.R. #6 Hagersville, Ontario N0A 1H0	Cc: Adam LaForme Adam.LaForme@mncfn.ca
18 Email	Ministry of Aboriginal Affairs Aboriginal Relations / Ministry Partnerships Br. 9 th Floor, 160 Bloor Street East, Toronto, Ontario M7A 2E6 Remove: Pauline Wakegijig Executive Assistant / Acting Policy and Consultation Unit Pauline.wakegijig@ontario.ca	Heather Levecque Director, Policy and Consultation Unit Heather.levecque@ontario.ca Contact Change Request from Pauline Wakegijig (Mar 6, 2023) Ashley Johnson, Team Lead Indigenous Relations and Programs Ministry of Indigenous Affairs 160 Bloor Street East, 4 th Floor TO, Ontario M7A 2E6
19 Email	Ministry of Indigenous Relations and Reconciliation Suite 400, 160 Bloor Street East Toronto, Ontario M7A 2E6	Molly Mann Manager, Indigenous Relations Unit Molly.Mann@ontario.ca
20 Email	Ministry of Indigenous Relations and Reconciliation Suite 400, 160 Bloor Street East Toronto, Ontario M7A 2E6	Jessica Hill Senior Advisor, Indigenous Relations Jessica.hill2@ontario.ca
21 Email	Haudenosaunee Confederacy c/o Haudenosaunee Development Institute 16 Sunrise Court, Suite 600 P.O. Box 714 Oshweken, Ontario N0A 1M0	Chiefs Council info@hdi.land cc: Hohahes Leroy Hill Secretary to Haudenosaunee Confederacy Chiefs Council Email: jocko@sixnationsns.com
22 Email	Metis Nation of Ontario Consultation Unit Thunder Bay, Ontario	Laura DeSaulniers Land, Resources and Consultations LRC Branch Coordinator LauraD@metisnation.org
23 Email	Metis Nation of Ontario (Saugeen) Consultation Unit Suite 1100, 66 Slater Street Ottawa, Ontario K1P 5K1	consultations@metisnation.org

	Indigenous	Contact
24 Email	Historic Saugeen Metis 204 High Street Southampton, Ontario N0H 2L0	George Govier Co-ordinator Lands, Resources, and Consultation Direct line: 519-483-4001 Fax: 519-483-4002 Email: saugeenmetisadmin@bmts.com
25 Email	Saugeen Ojibway Nation (SON) Environment Office 10129 Highway 6 Georgian Bluffs, Ontario N0H 2T0	Peggy Mansur Manager 'manager.ri@saugeenojibwaynation.ca' 'manager@saugeenojibwaynation.ca'
26	Saugeen Ojibway Nation Environment Office 25 Maadookii Subdivision Neyaashiinigiing, Ontario N0H 2T0	Mr. Doran Ritchie, Land Use Planning Tel: 519-534-5507 Ext. 226 d.ritchie@saugeenojibwaynation.ca cc: Janna Chegahno, Territorial Resources Tel: 519-534-5507 Ext. 221 j.chegahno@saugeenojibwaynation.ca
	Municipality	Contact
27 Email	Grey County Planning and Development 595 9 th Avenue East Owen Sound, Ontario N4K 3E3	Attention: General Planning planning@grey.ca cc: Scott Taylor, Director of Planning scott.taylor@grey.ca cc: Monica Scribner monica.scribner@grey.ca Administrative Assistant, Planning Department 1-519-372-0219 ext. 1232 cc: Liz Buckton, Senior Planner 'liz.buckton@grey.ca' (Liz responded to PIC No. 1)
28 Email	County of Dufferin W.&M. Edelbrock Centre 30 Centre Street ORANGEVILLE, Ontario L9W 2X1	Chief Building Official / Planner cbo@dufferincounty.ca 519-941-2362 Ext. 2701 Planner@dufferincounty.ca
29 Email	Township of Melancthon 157101 Highway#10 Melancthon, Ontario L9V 2E6	Denise B. Holmes, CAO/Clerk dholmes@melancthontownship.ca 1-519-925-5525 Ext. 102
	Property Owners	Address
30	Assessment Parcel -- Southgate Township	Primary address: 752051 Ida Street, Dundalk, Ontario
31	Green OM Property Management Inc.	4 Peverill Court Bedford, Nova Scotia B4A 4G4
32	Southgate Renewables Holdings Corp.	TD Centre North Tower 77 King Street West, Suite 5000 Toronto, Ontario M5K 1G8
33	Casa Terre Corporation	500 Doris Avenue, Suite 2430 North York, Ontario M2N 0C1
34	2164130 Ontario Inc. / Calhoun	P.O. Box 220 Tara, Ontario N0H 2N0

	Property Owners	Address
35	LITZ, Alana	662 – A Torrence Road Comox, BC V9M 3H7
36	MKSN Holdings Inc. <i>Mail Returned (as Refused)</i>	1100 Angel Road Eagle Lake, Ontario K0M 1M0
37	LITZ, Waldemar & Diane Olive	P.O. Box 265, Station Main Shelburne, Ontario L9V 3L8
38	Gro-Bark Organics Inc. (905-846-1515)	816 Mayfield Road Caledon, Ontario L7C 0Y6
39	Canada Fence and Hardware Inc. Email dometra@gmail.com	7 – 18 Automatic Road Brampton, Ontario L6S 5N5
40	1000163754 Ontario Inc.	569 Perth Street Mount Forest, Ontario N0G 2L1
41	2137569 Ontario Inc.	485387 Sideroad 30 Shelburne, Ontario L9V 3N5
42	RUSSELL, Brent & Holly Email b.russell@dunwood.ca	752111 Ida Street P.O. Box 252 Dundalk, Ontario N0C 1B0
43	ANDELA, Jamie Blaine	752115 Ida Street Dundalk, Ontario N0C 1B0
44	MAJETIC, Emil LANGDON, Susan	752119 Ida Street Dundalk, Ontario N0C 1B0
45	JOHNSTON, Jeffery & Jacqueline (519) 923-6776	752121 Ida Street Dundalk, Ontario N0C 1B0
46	TITUS, Mara	752123 Ida Street Dundalk, Ontario N0C 1B0
47	Briarwood (Dundalk) Ltd.	636 Edward Avenue, Suite 14 Richmond Hill, Ontario L4C 0V4
48	NATALE, Michael LANDERS, Lynn	752165 Ida Street Dundalk, Ontario N0C 1B0
49	AVILA, Cheryl Eileen Email cherylavila@yahoo.ca	752147 Ida Street Dundalk, Ontario N0C 1B0
50	GARBUTT, Brian & Barbara Email bgarbutt@bellnet.ca	P.O. Box 491 Dundalk, Ontario N0C 1B0
51	McRae, Christopher	752155 Ida Street Dundalk, Ontario N0C 1B0
52	WEDDE, Alfredo Otto Email fwedde@sympatico.ca	752159 Ida Street Dundalk, Ontario N0C 1B0
53	AHMAD Enterprises Inc.	15 Noor-Un-Din Court Maple, Ontario L6A 3A5
54	DUARTE, Carlos Mendes GALLO, Erminia Email erminiaduarte@rogers.com	752130 Ida Street Dundalk, Ontario N0C 1B0
55	BISHOP, Andrew and Renee	752124 Ida Street Dundalk, Ontario N0C 1B0
56	WOLSTENHOLME, Jean Margaret	3359 Charmaine Heights Mississauga, Ontario L5A 3C2
57	HAMID, Eldon & Phulmattie (416) 568-9482	25 Pathway Drive Brampton, Ontario L6X 0Z7

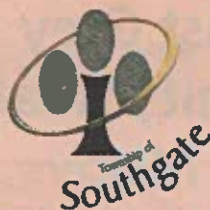
	Additional	
58 Email	Lystek International Inc. critchie@lystek.com (Cambridge Office 519-923-3539)	125 McGovern Drive, Unit #1 Cambridge, Ontario N3H 4H7
59	Crozier & Associates The Harbour Edge Building 40 Huron Street, Suite 301 Collingwood, Ontario L9Y 4R3	Justin L'Abbe jlabbe@cfcrozier.ca
60	Flato Development Inc. 3621 Highway 7 East, Suite 503 Markham, Ontario L3R 0G6 www.flatogroup.com	Shakir Rehmatullah, President shakir@flatogroup.com Tel: 905-479-9292 Ext. 222
61 Email	Envest Corp. 1-416-209-7351	Mark Bell mb@envestcorp.com
62 Email	Wellington Construction Contractors Inc. (519) 343-2456	Jim Koetsier jkoetsier@wellingtonconstruction.on.ca #8718 Wellington Rd #7, R.R.#1 Palmerston, ON, N0G 2P0

E.1.0 – Notice of Commencement

E.1.1 - Notice of Commencement Advertisements

(The Dundalk Herald published May 18 and May 25, 2016)

The Dundalk Herald
Wed., May 18/16
W4609A



TOWNSHIP OF SOUTHGATE
CLASS ENVIRONMENTAL ASSESSMENT
DUNDALK WASTEWATER TREATMENT CAPACITY
NOTICE OF PROJECT COMMENCEMENT

The Township of Southgate owns and operates the Dundalk wastewater treatment facility located at 752051 Ida Street, South in Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.

The Township is initiating a Class Environmental Assessment (Class EA) in order to address the wastewater treatment capacity concerns in Dundalk. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011 and 2015). Public input and comments are invited for incorporation into the planning of this project. Public Information Centres for this project will be held as the project progresses to share information with and solicit input from interested stakeholders.

As part of the public consultation program, a project contact list is being created. Stakeholders included on the list will receive information regarding the project including formal Notices. To be placed on the project contact list, to provide comments or to request further information, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
R.R. #1
Dundalk, ON N0C 1B0
Phone: 519-923-2110
Toll Free: 1-888-560-6607
Fax: 519-923-9262
E-mail: jellis@southgate.ca

Christine Furlong, P. Eng.
Triton Engineering Services Limited
14-105 Queen Street, West
Fergus, ON N1M 1S6
Phone: 519-843-3920
Fax: 519-843-1943
E-mail: cfurlong@tritoneng.on.ca

This Notice first issued May 18, 2016.

Raylene Martell
Clerk
Township of Southgate

The Dundalk Herald
Wed., May 25/16
W4609A



TOWNSHIP OF SOUTHGATE
CLASS ENVIRONMENTAL ASSESSMENT
DUNDALK WASTEWATER TREATMENT CAPACITY
NOTICE OF PROJECT COMMENCEMENT

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Phone: 519-923-2110
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Fax: 519-923-9262
E-mail: jellis@southgate.ca

Christine Furlong, P. Eng.
Triton Engineering Services Limited
14-105 Queen Street, West
Fergus, ON N1M 1S6
Phone: 519-843-3920
Fax: 519-843-1943
E-mail: cfurlong@tritoneng.on.ca

This Notice first issued May 18, 2016.

Raylene Martell
Clerk
Township of Southgate

E.1.2 - Notice of Commencement (Indigenous Communities)

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:43 PM
To: heather.levèque@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (HLevesque) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Heather Levecque
Director, Policy and Consultation Unit
Heather.levecque@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Levecque,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022
Public Information Centre and Open House
Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

Purpose of Public Consultation

The purpose of this Public Information Centre is to update all stakeholders, approval agencies and Indigenous communities on the progress of the project, discuss the evaluation of alternative solutions, and invite you to provide your comments and feedback on the information presented. From Monday, November 14th to Friday, November 18th, 2022, you will be able to view background information and materials regarding the project on the Township's website as noted. You may also choose to attend the Drop-In PIC and Open House on Thursday, November 17th, 2022, details as noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:44 PM
To: 'pauline.wakegijig@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (P.Wakegijig) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Pauline Wakegijig
Executive Assistant (Acting)
Policy and Consultation Unit
Pauline.wakegijig@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Wakegijig,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022
Public Information Centre and Open House
Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

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The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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The Study Process:

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Fax: 519-923-9262
Email: jeellis@southgate.ca

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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: info@hdi.land
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Haudenosaunee Chiefs Council-- NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Haudenosaunee Confederacy
c/o Haudenosaunee Development Institute
16 Sunrise Court, Suite 600
P.O. Box 714
OSHWEKEN, On
N0A 1M0

ATTENTION: Chiefs Council
info@hdi.land

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chiefs Council,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

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<https://www.southgate.ca/Modules/News/en>

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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NOC 1B0
Phone: 519-923-2110 x250
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Email: jeellis@southgate.ca

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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:55 PM
To: molly.mann@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Indigenous Relations & Reconciliation (MMann) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Molly Mann
Manager, Indigenous Relations Unit
Molly.mann@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Mann,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:46 PM
To: jessica.hill2@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Indigenous Relations & Reconciliation - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Jessica Hill
Senior Advisor, Indigenous Relations
Jessica.hill2@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Hill,

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Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 4:21 PM
To: 'consultations@metisnation.org'
Subject: FW: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Metis Nation of Ontario (Saugeen) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

From: Shari Page
Sent: Thursday, November 3, 2022 4:19 PM
To: 'consultation@metisnation.org' <consultation@metisnation.org>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Métis Nation of Ontario (Saugeen)
Consultation Unit
Suite 1100, 66 Slater Street
OTTAWA, Ontario
K1P 5H1

ATTENTION: consultation@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Sir/Madam,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
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The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

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Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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Email: info@tritoneng.on.ca

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November 2, 2022

Métis Nation of Ontario
Consultation Unit
THUNDER BAY, Ontario

ATTENTION: Laura DeSaulniers
Land, Resources and Consultations
LRC Branch Coordinator
LauraD@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. DeSaulniers,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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NOC 1B0
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Fax: 519-923-9262
Email: jeellis@southgate.ca

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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: Stacey.Laforme@mncfn.ca
Cc: Abby.LaForme@mncfn.ca; Mark.LaForme@mncfn.ca; adam.laforme@mncfn.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Mississauga (Chief LaForme) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

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Kind regards,
Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Mississauga of the Credit First Nation
2789 Mississauga Road, R.R. 6
HAGERSVILLE, Ontario
N0A 1H0

ATTENTION: Chief R. Stacey LaForme
Stacey.laforme@mncfn.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chief LaForme,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Abby LaForme, Consultation Coordinator, Mississauga of the Credit First Nation (MNCFN)
Mark LaForme, DOCA, Mississauga of the Credit First Nation (MNCFN)
Adam LaForme, Archaeological Operations Supervisor, MNCFN



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: manager.ri@saugeenojibwaynation.ca; manager@saugeenojibwaynation.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Saugeen Ojibway SON - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Saugeen Ojibway Nation (SON)
Environment Office
10129 Highway 6
GEORGIAN BLUFFS, Ontario
N0H 2T0

ATTENTION: Peggy Mansur,
Manager
manager@saugeenojibwaynation.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Mansur,

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Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate

Emily Martin, Infrastructure and Resources Manager, Saugeen Ojibway Nation (SON)
manager@saugeenojibwaynation.ca



Township of Southgate
Class Environmental Assessment
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Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: 'lonnybomberry@sixnations.ca'
Cc: Tammy Martin; Tayler Hill
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (L.Bomberry) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Mr. Lonny Bomberry
Lands and Resource Director
lonnybomberry@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Bomberry,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022

Public Information Centre and Open House

Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario

Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

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The Problem Statement for this project is as follows:

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Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Tammy Martin, Six Nations of the Grand River tammymartin@sixnations.ca
Tayler Hill, Six Nations of the Grand River tayler.hill@sixnations.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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The Study Process:

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Township of Southgate
185667 Grey County Road 9
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NOC 1B0
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Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
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105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: markhill@sixnations.ca
Cc: Tammy Martin; rvanstone@sixnations.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (Chief Mark Hill) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Chief Mark B. Hill
markhill@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chief Hill,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Tammy Martin, COS, SNGREC, Six Nations of the Grand River
Robbin Vanstone, Consultation Supervisor, Six Nations of the Grand River



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

E.1.3 - Notice of Commencement (Agencies & Public)

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:03 PM
To: eanotification.swregion@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Form - Township of Southgate NOTICE OF PIC Class EA Dundalk WWT Capacity.xlsx; MECP Toronto (EABDirector) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

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Shari

Shari Page



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ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Environment, Conservation and Parks
Environmental Assessment and Approvals Branch
135 St. Clair Avenue West, 1st Floor
TORONTO, Ontario
M4V 1P5

ATTENTION: Director, Class EAs and Declaration Section
EABDirector@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Director,

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Township of Southgate's website
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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Email: jellis@southgate.ca

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105 Queen Street, Unit 14
Fergus, ON
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Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:04 PM
To: 'john.s.ritchie@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Owen Sound District (John S Ritchie) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Environment, Conservation and Parks
Owen Sound District Office
3rd Floor, 101 7th Street East
OWEN SOUND, Ontario
N4K 0A5

ATTENTION: John S. Ritchie
Manager
john.s.ritchie@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Ritchie,

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:06 PM
To: dan.l.thompson@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Natural Resources and Forestry Midhurst (Dan Thompson) - NOTICE OF PIC Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Natural Resources and Forestry
Midhurst District
2284 Nursery Road
MIDHURST, Ontario
L9X 1N8

ATTENTION: Mr. Dan Thompson,
District Manager
dan.l.thompson@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Thompson,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

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Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

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The Problem Statement for this project is as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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The Study Process:

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How to Contact:

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Jim Ellis, Public Works Manager

Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng

Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: scott.taylor@grey.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: County of Grey (S.Taylor, Dir. of Planning) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

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Kind regards,
Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

County of Grey
Planning and Development
595 9th Avenue East
OWEN SOUND, Ontario
N4K 2E3

ATTENTION: Scott Taylor
Director of Planning
scott.taylor@grey.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Taylor,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: clorenz@grandriver.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: GRCA (C.Lorenz Resource Planner) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari

Shari Page



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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Grand River Conservation Authority
400 Clyde Road, P.O. Box 729
CAMBRIDGE, Ontario
N1R 5W6

ATTENTION: Chris Lorenz
Resource Planner
clorenz@grandriver.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Lorenz,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

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Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: 'dholmes@melancthontownship.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Township of Melancthon (D.Holmes CAO) NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
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Consulting Engineers

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Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Township of Melancthon
157101 Highway 10
MELANCTHON, Ontario
L9V 2E6

ATTENTION: Denise B. Holmes
CAO/Clerk
dholmes@melancthontownship.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Holmes,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Project Background

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The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

Purpose of Public Consultation

The purpose of this Public Information Centre is to update all stakeholders, approval agencies and Indigenous communities on the progress of the project, discuss the evaluation of alternative solutions, and invite you to provide your comments and feedback on the information presented. From Monday, November 14th to Friday, November 18th, 2022, you will be able to view background information and materials regarding the project on the Township's website as noted. You may also choose to attend the Drop-In PIC and Open House on Thursday, November 17th, 2022, details as noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

A Public Information Centre and Open House will be held on Thursday, November 17th, 2022, drop-in format, and will include information regarding the alternatives considered and the steps the Township is taking towards a Preferred Alternative. This open house will be held at the Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario between 3:00 p.m. and 7:00 p.m.

How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Tuesday, November 1, 2022 11:47 AM
To: critchie@lystek.com
Subject: NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: LYSTEK - NOTICE of PIC re DUNDALK WASTEWATER TREATMENT CAPACITY.pdf

Good morning,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice has been mailed and will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any further questions or concerns, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

October 31, 2022

LYSTEK INTERNATIONAL INC.
125 McGovern Drive
Unit #1
CAMBRIDGE, Ontario
N3H 4H7
critchie@lystek.com

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Sir/Madam,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022
Public Information Centre and Open House
Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

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inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre
cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

E.1.4 - Notice of Commencement Comments & Responses

Shari Page

From: Lands and Resources Consultation Coordinator <saugeenmetisadmin@bmts.com>
Sent: Thursday, May 19, 2016 10:54 AM
To: Shari Page
Cc: Christine Furlong
Subject: Re: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Your File:
Our File: Southgate Municipality

Good Morning Shari,

Acknowledge your e-mail from earlier this morning regarding the Dundalk Wastewater Treatment Capacity – Class Environmental Assessment.

Our preference would be to receive this type of correspondence by e-mail only. Hard copy duplication is not required.

I trust this may be helpful.

Regards,

George Govier

Co-ordinator Lands, Resources, and Consultation

Historic Saugeen Metis
204 High Street
Southampton, Ontario
N0H 2L0
Direct Line (519) 483-4001
Fax (519) 483-4002
Email saugeenmetisadmin@bmts.com

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From: Shari Page <spage@tritoneng.on.ca>
Date: Thursday, May 19, 2016 at 10:09 AM
To: Saugeen Metis Admin <saugeenmetisadmin@bmts.com>
Cc: Christine Furlong <cfurlong@tritoneng.on.ca>
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

We would like to know your preference for receiving future correspondence for this project whether it be email only, mail only or if you would prefer both. Kindly let us know.

Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Shari Page

From: Joanne Thomas <jthomas@sixnations.ca>
Sent: Thursday, May 19, 2016 10:26 AM
To: Shari Page; Paul General
Cc: Christine Furlong
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

My preference for receiving future correspondence for this project would be mail only. Some packages are too large for our email server to handle. So for this project mail would be better.

Thanks.

JT

Joanne Thomas, B.A. Hon.
Consultation Supervisor
Six Nations Lands and Resources
T: 519-753-0665
Ext: 5411
F: 519-753-3449
E: jthomas@sixnations.ca

This information is directed in confidence solely to the person named above and may not otherwise be distributed, copied or disclosed. Therefore, this information should be considered strictly confidential. If you have received this message in error, please notify me immediately and delete this message.

From: Shari Page [mailto:spage@tritoneng.on.ca]
Sent: May-19-16 10:08 AM
To: Paul General; Joanne Thomas
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

We would like to know your preference for receiving future correspondence for this project whether it be email only, mail only or if you would prefer both. Kindly let us know.

Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
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W4609A
First Nations

Christine Furlong

From: Alikakos, Mary (MOECC) <Mary.Alikakos@ontario.ca>
Sent: September-19-17 2:13 PM
To: Christine Furlong
Cc: Newton, Craig (MOECC)
Subject: RE: Potential Duty to Consult

Hi Christine,

I apologize that I have not contacted you sooner, I was doing a little background work on these projects as I've started with the Ministry in July.

Looking at your list of communities that you have previously contacted, it is not overly surprising that Chief Hill (1695 Chiefswood) has not responded. What would typically happen in FN communities is that Chief & Council would delegate the work to their technicians or consultation coordinators. This may have happened in the Six Nations community.

Please feel free to reach out to either Lonnie Bomberry, Director or Joanne Thomas, Consultation Supervisor at 519-753-0665 to confirm that they have received your notifications.

It also might be helpful to contact the Chiefs Council at the HCCC at 519-445-4222 directly to determine that they too have received your notification.

You are welcome to keep me in the loop of your communication and please feel free to contact me if you have any additional questions.

Have a good day,
Mary

Mary Alikakos | Senior Advisor, Outreach & Program Support
Southwest and West Central Region
Ministry of the Environment and Climate Change | 733 Exeter Rd. London, ON
T: 519-873-5118 | C: 519-381-0957 | E: Mary.Alikakos@ontario.ca

 Please consider the environment before printing this email

From: Brown, Peter (MOECC)
Sent: September 15, 2017 8:34 AM
To: cfurlong@tritoneng.on.ca
Cc: EAASIB, General Inquiry (MOECC); Alikakos, Mary (MOECC)
Subject: FW: Potential Duty to Consult

Dear Christine,

I have forwarded your inquiry to Mary Alikakos (cc'ed), Senior Advisor for Southwestern Region, to respond.

Thank you,

Peter Brown
Indigenous Consultation Advisor
Ministry of Environment and Climate Change
Environmental Approvals Access and Service Integration Branch
peter.brown@ontario.ca
416-326-9608

From: Christine Furlong [<mailto:cfurlong@tritoneng.on.ca>]
Sent: September-14-17 3:29 PM
To: EAASIB, General Inquiry (MOECC)
Subject: Potential Duty to Consult

To Whom it May Concern

Triton Engineering Services is currently completing 2 Municipal Class Environmental Assessments in Southgate Township. One is for additional water supply and one is for additional sewage treatment capacity to service new growth.

The projects are located in the former Village of Dundalk which lies in the Grand River watershed and the community itself is within 6 miles/9.66 km of the Grand River. As a result, the project site is located within a Treaty dispute/land claim area for the Haldimand Proclamation. In addition, the lands are adjacent to the Saugeen River watershed. To date, we have sent project information to the following indigenous communities.

Six Nations of the Grand River Territory

P.O. Box 5000
1695 Chiefswood Road
Ohsweken, Ontario N0A 1M0

Six Nations

2498 Chiefswood Road
P.O. Box 5000
Ohsweken, Ontario N0A 1M0

Haudenosaunee Confederacy

Chiefs Council
2634 6th Line Road
R.R. #2, OHSWEKEN, Ontario N0A 1M0

Historic Saugeen Metis

204 High Street
Southampton, Ontario N0H 2L0

Saugeen Ojibway Nation Environment Office

25 Maadookii Subdivision

Neyaashiinigiing, Ontario NOH 2T0

The Saugeen Metis and Ojibway Nation communities have corresponded back to us asking the municipality for continued correspondence for the projects as they progress but we have not received any return correspondence from the two (2) Six Nation communities or the Haudenosaunee Confederacy. None of the three First Nation communities located in the Grand River watershed listed above have advised the municipality of any aboriginal or treaty rights impacts but we know they are there via the Haldimand Proclamation. It is our intent to continue sending project information to all communities listed above as the project continues to move forward.

We are coming up to the completion of the water supply Class EA and want to make sure that the duties to consult have been fulfilled and would appreciate any advice that your office may have.

Thank-you in advance.

Christine Furlong, P. Eng

Triton Engineering Services Limited

105 Queen Street West, Unit 14 Fergus, ON N1M 1S6

Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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W4609A
Official
File

**Ministry of Tourism,
Culture and Sport**

Heritage Program Unit
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel: 416 314 7147
Fax: 416 212 1802

**Ministère du Tourisme,
de la Culture et du Sport**

Unité des programmes patrimoine
Direction des programmes et des services
401, rue Bay, Bureau 1700
Toronto ON M7A 0A7
Tél: 416 314 7147
Télé: 416 212 1802



June 24, 2016 (EMAIL ONLY)

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON N0C 1B0
E: jellis@southgate.ca

RE: MTCS file #: 0005131
Proponent: Township of Southgate
Subject: Notice of Commencement
Dundalk Wastewater Treatment Capacity
Location: Township of Southgate, Ontario

Dear Mr. Ellis:

Thank you for providing the Ministry of Tourism, Culture and Sport (MTCS) with the Notice of Commencement for your project. MTCS's interest in this EA project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- Archaeological resources, including land-based and marine;
- Built heritage resources, including bridges and monuments; and,
- Cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources.

While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Aboriginal communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Aboriginal communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Municipal Heritage Committees, historical societies and other local heritage organizations may also have knowledge that contributes to the identification of cultural heritage resources.

Archaeological Resources

Your EA project may impact archaeological resources and you should screen the project with the MTCS [Criteria for Evaluating Archaeological Potential](#) to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at archaeology@ontario.ca. If your EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licenced under the OHA, who is responsible for submitting the report directly to MTCS for review.

Built Heritage and Cultural Heritage Landscapes

The MTCS [Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes](#) should be completed to help determine whether your EA project may impact cultural heritage resources. The Clerk for the Township of Southgate can provide information on property registered or designated under the *Ontario Heritage Act*. Municipal Heritage Planners can also provide information that will assist you in completing the checklist.

If potential or known heritage resources exist, MTCS recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, should be completed to assess potential project impacts. Our Ministry's [Info Sheet #5: Heritage Impact Assessments and Conservation Plans](#) outlines the scope of HIAs. Please send the HIA to MTCS for review, and make it available to local organizations or individuals who have expressed interest in heritage.

Environmental Assessment Reporting

All technical heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MTCS whether any technical heritage studies will be completed for your EA project, and provide them to MTCS before issuing a Notice of Completion. If your screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MTCS on this project: please continue to do so through the EA process, and contact me for any questions or clarification.

Sincerely,

Dan Minkin
Heritage Planner
Dan.Minkin@Ontario.ca

Copied to: Christine Furlong, P. Eng., Triton Engineering Services Ltd.

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MTCS makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MTCS be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Please notify MTCS if archaeological resources are impacted by EA project work. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the Ontario Heritage Act and the Standards and Guidelines for Consultant Archaeologists.

If human remains are encountered, all activities must cease immediately and the local police as well as the Cemeteries Regulation Unit of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MTCS should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

Christine Furlong

From: Minkin, Dan (MTCS) <Dan.Minkin@ontario.ca>
Sent: June-24-16 4:29 PM
To: jellis@southgate.ca
Cc: Christine Furlong
Subject: Dundalk Wastewater Treatment Capacity - MTCS Comments
Attachments: 2016-06-24 - Dundalk Wastewater Treatment Capacity - MTCS Comments.pdf

Good afternoon,
Please see attached.

Dan Minkin
Heritage Planner
Ministry of Tourism, Culture and Sport
Culture Division | Programs and Services Branch | Heritage Program Unit
401 Bay Street, Suite 1700
Toronto, Ontario M7A 0A7
Tel. 416.314.7147 | Fax. 416.314.7175

Shari Page

From: Christine Furlong
Sent: Tuesday, June 7, 2016 4:20 PM
To: Shari Page
Subject: FW: Township of Southgate Dundalk Wastewater Environmental Assessment - W4609A
Attachments: Triton Engineering Lystek Response_2016_06_06.pdf

[As promised](#)

From: Connie Ritchie [mailto:critchie@lystek.com]
Sent: June-06-16 12:54 PM
To: Christine Furlong
Cc: Rick Mosher; jellis@southgate.ca
Subject: RE: Township of Southgate Dundalk Wastewater Environmental Assessment - W4609A

On behalf of Rick Mosher, Chief Technology Office at Lystek, please see the attached response to your letter dated May 19, 2016, file number W4609A.

Thank you

Connie Ritchie
Office Manager



Lystek International Inc.
1425 Bishop St. N. Unit 16
Cambridge, Ontario, N1R 6J9

t: (226) 444-0186 x107
c: (519) 806-1425
tf: (888) 501-6508

Toronto: (647) 547-6090

www.lystek.com





1425 Bishop St. N., Unit 16, Cambridge, ON N1R 6J9
T. 226.444.0186 TF. 888.501.6508 E. info@lystek.com

June 6, 2016

Christine Furlong, P.Eng.
Triton Engineering Services Limited
105 Queen Street West, Unit 14
Fergus Ontario,
N1M 1S6

Re: Township of Southgate Dundalk Wastewater Treatment Capacity Class
Environmental Assessment Our File: W4609A

Dear Ms. Furlong

We received your notice of the Class Environmental Assessment (Class EA) in order to address wastewater treatment capacity concerns in Dundalk. We understand that this Class EA is being undertaken as a precursor for a project to expand the wastewater treatment capacity for Southgate Township due to projected significant growth within the Town of Dundalk's municipal boundaries. We are a major stakeholder in the Dundalk community, and our operating facility is located within the EcoPark in close proximity to the existing site. We are very much interested in following the project development and providing input from the perspective of Lystek International Inc. and of our local staff, many of whom reside within this community.

To provide meaningful comment and input, we would like to inquire if there is a design brief or other related documents at this point that provide;

- Descriptions, size, and capacities of all of the existing facilities and related infrastructure;
- Current and projected flows together with any recent annual monitoring reports;
- Any mass balances associated with the current processing train;
- A copy of the current MOECC approvals for the existing site;
- If septage is received at this site, how this would be factored into a program for Dundalk going forward;
- Any studies regarding peaking flows into the wastewater treatment system from non-wastewater sources; and
- Any directions or guidance that have been issued by the MOECC regarding this potential project.



Nothing wasted. Everything to gain.

www.lystek.com
Page 451 of 806



We understand that you may be posting some, of all of the above on a website with public access to such documents. If that is the case then it would be greatly appreciated if you could provide the location of this information as well as any relevant instruction required to access the same.

Again, we appreciate the notice and are supportive of any plan to expand this facility to accommodate the growth and development of the municipality. Please keep us informed as this process moves forward and we will continue to provide our input.

Yours truly,

Frederick (Rick) Mosher, P.Eng.
Chief Technology Officer
Lystek International Inc.

cc: Jim Ellis, Public Works Manager, Township of Southgate



Nothing wasted. Everything to gain.

www.lystek.com

Page 452 of 806

Shari Page

From: Shakir Rehmatullah <shakir@flatogroup.com>
Sent: Wednesday, May 25, 2016 7:40 PM
To: Shari Page
Cc: Christine Furlong; Nazy Majidi
Subject: Re: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Hi Shari,

We have received the notice in the mail today. Thank you for sending it to me. I am requesting for both e-mail and a hard copy in the mail please.

I have reviewed it and have no comments.

Regards

Shakir Rehmatullah

President

Flato Developments Inc.

[3621 Highway 7 East](#)

[Suite 503](#)

[Markham, Ontario L3R 0G6](#)

Tel: [905.479.9292 Ext. 222](#)

Fax: [905.479.9165](#)

www.flatogroup.com

Email: shakir@flatogroup.com

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On May 19, 2016, at 10:16 AM, Shari Page <spage@tritoneng.on.ca> wrote:

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

We would like to know your preference for receiving future correspondence for this project whether it be email only, mail only or if you would prefer both. Kindly let us know.

Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page

<image001.jpg>Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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W4609A
Official File

Christine Furlong

From: Ellis,Jim <JEllis@southgate.ca>
Sent: May-25-16 2:59 PM
To: Newton, Craig (MOECC)
Cc: Munro, Alison (MOECC); Kershaw, Allison (MOECC); Christine Furlong
Subject: RE: MOECC Comments Notice of Project Commencement Dundalk Wastewater Treatment Capacity Class EA, Twp. of Southgate

Good afternoon Craig,

Thank you for the correspondence and at this stage First Nations and Metis communities have been included in the circulation and we will keep the MOECC informed of any consultations through the process.

Regards
Jim

Jim Ellis, CRS I
Public Works Manager
jellis@southgate.ca



Township of Southgate

185667 Grey Road 9
RR #1
Dundalk, ON N0C 1B0
1-888-560-6607 x 224
Fax 519-923-9262

From: Newton, Craig (MOECC) [<mailto:Craig.Newton@ontario.ca>]
Sent: May-25-16 11:21 AM
To: Ellis,Jim
Cc: Munro, Alison (MOECC); Kershaw, Allison (MOECC); cfurlong@tritoneng.on.ca
Subject: MOECC Comments Notice of Project Commencement Dundalk Wastewater Treatment Capacity Class EA, Twp of Southgate

Dear Mr. Ellis:

Please find attached the MOECC's comments on the Notice of Project Commencement for the above noted project. Please note that this serves as the ministry's formal correspondence and will only be delivered via this email. That is, the original will not follow by Canada Post.

Yours truly,

Craig Newton

Regional Environmental Planner / Regional EA Coordinator
Ministry of the Environment & Climate Change
Southwestern Region
(519) 873-5014

Ministry of the Environment
and Climate Change

Ministère de l'Environnement
et de l'Action en matière de
changement climatique



733 Exeter Road
London ON N6E 1L3
Tel: 519 873-5000
Fax: 519 873-5020

733, rue Exeter
London ON N6E 1L3
Tél.: 519 873-5000
Fax: 519 873-5020

May 25th, 2016

Township of Southgate
185667 Grey County Road 9
R.R. #1
Dundalk, Ontario
NOC 1B0

Attention: Mr. Jim Ellis, Public Works Manager

**Re: Notice of Project Commencement, Dnddalk Wastewater Treatment Capacity,
Township of Southgate, Grey County**

Dear Mr. Ellis:

This letter is this ministry's response to the Notice of Project Commencement for the above noted project. This response acknowledges that this study is being planned under Schedule C of the Municipal Engineers Association Municipal Class Environmental Assessment.

Thank you for the opportunity to comment on this project.

As you know, the Class EA planning process includes consultation with interested stakeholders, evaluation of alternatives, assessment of the effects of the proposed works and identification of measures to mitigate any adverse impacts. In addition to public agencies, and the general public, consultation with First Nations and Metis is required.

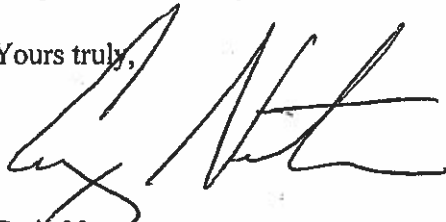
Consultation with First Nation and Metis Communities

The Crown has a duty to consult First Nation and Metis communities if there is a potential impact to Aboriginal or treaty rights. As the proponent of this project, the Township of Southgate has a responsibility to conduct adequate consultation with First Nation and Metis communities as part of the environmental assessment process. The Crown is therefore, delegating the procedural aspects of consultation to the Township of Southgate as outlined in the attached document.

The Township of Southgate must contact the Director, Environmental Approvals Branch if this project may adversely affect an Aboriginal or treaty right. The Ministry will then determine whether the Crown has a duty to consult. Information and resources to assist the Township of Southgate and Triton Engineering Services Limited in fulfilling this requirement are provided as an attachment.

Please keep this office fully informed of the status of this project as it proceeds through the Class EA process. Thank you in advance.

Yours truly,



Craig Newton
Regional Environmental Planner / Regional EA Coordinator
Ministry of the Environment & Climate Change
Southwestern Region
(519) 873-5014

Ms. Christine Furlong, P. Eng., Triton Engineering Services Limited, Fergus
Ms. Alison Munro, Surface Water Evaluator, MOECC SWR
Ms. Allison Kershaw, Acting Water Compliance Supervisor, MOEE Owen Sound District Office

Attachment (1)

ABORIGINAL CONSULTATION INFORMATION

Consultation with Interested Persons under the Ontario Environmental Assessment Act

Proponents subject to the Ontario *Environmental Assessment Act* are required to consult with interested persons, which may include First Nations and Métis communities. In some cases, special efforts may be required to ensure that Aboriginal communities are made aware of the project and are afforded opportunities to provide comments. Direction about how to consult with interested persons/communities is provided in the Code of Practice; Consultation in Ontario's Environmental Assessment Process available on the Ministry's website:

<https://www.ontario.ca/environment-and-energy/consultation-ontario-environmental-assessment-process>

As an early part of the consultation process, proponents are required to contact the Ontario Ministry of Aboriginal Affairs' Consultation Unit and visit Aboriginal Affairs and Northern Development Canada's Aboriginal and Treaty Rights Information System (ATRIS) to help identify which First Nation and Métis communities may be interested in or potentially impacted by their proposed projects.

ATRIS can be accessed through the Aboriginal Affairs and Northern Development Canada website:

http://s1delt-atris.aadnc-aandc.gc.ca/atris_online/

For more information in regard Aboriginal consultation as part of the Environmental Assessment process, refer to the Ministry's website:

www.ontario.ca/government/environmental-assessments-consulting-aboriginal-communities

You are advised to provide notification directly to all of the First Nation and Métis communities who may be interested in the project. You should contact First Nation communities through their Chief and Band Council, and Métis communities through their elected leadership.

Rights-based consultation with First Nation and Métis Communities

Proponents should note that, in addition to requiring interest-based consultation as described above, certain projects may have the potential to adversely affect the ability of First Nation or Métis communities to exercise their established or credibly asserted Aboriginal or treaty rights. In such cases, Ontario may have a duty to consult those Aboriginal communities.

Activities which may restrict or reduce access to unoccupied Crown lands, or which could result in a potential adverse impact to land or water resources in which harvesting rights are exercised, may have the potential to impact Aboriginal or treaty rights. For assistance in determining whether your proposed project could affect these rights, please refer to the attached "Preliminary Assessment Checklist: First Nation and Métis Community Interest."

If there is likely to be an adverse impact to Aboriginal or treaty rights, accommodation may be required to avoid or minimize the adverse impacts. Accommodation is an outcome of consultation and includes any mechanisms used to avoid or minimize adverse impacts to Aboriginal or treaty rights and traditional uses. Solutions could include mitigation such as adjustments in the timing or geographic location of the

v.1.1.4.0

proposed activity. Accommodation may in certain circumstances involve the provision of financial compensation, but does not necessarily require it.

For more information about the duty to consult, please see the Ministry's website at:

www.ontario.ca/government/duty-consult-aboriginal-peoples-ontario

The proponent must contact the Director, Environmental Approvals Branch if a project may adversely affect an Aboriginal or treaty right, consultation has reached an impasse, or if a Part II Order or an elevation request is anticipated; the Ministry will then determine whether the Crown has a duty to consult.

The Director of the Environmental Approvals Branch can be notified either by email with the subject line "Potential Duty to Consult" to EAASIBGen@ontario.ca or by mail or fax at the address provided below:

Email:	EAASIBGen@ontario.ca Subject: Potential Duty to Consult
Fax:	416-314-3452
Address:	Environmental Approvals Branch 135 St. Clair Avenue West, 1 st Floor Toronto, ON, M4V 1P5

Delegation of Procedural Aspects of Consultation

Proponents have an important and direct role in the consultation process, including a responsibility to conduct adequate consultation with First Nation and Métis communities as part of the environmental assessment process. This is laid out in existing environmental assessment codes of practice and guides that can be accessed from the Ministry's environmental assessment website at www.ontario.ca/environmentalassessments

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Where the Crown's duty to consult is triggered, various additional procedural steps may also be asked of proponents as part of their delegated duty to consult responsibilities. In some situations, the Crown may also become involved in consultation activities.

Ontario will have an oversight role as the consultation process unfolds but will be relying on the steps undertaken and information you obtain to ensure adequate consultation has taken place. To ensure that First Nation and Métis communities have the ability to assess a project's potential to adversely affect their Aboriginal or treaty rights, Ontario requires proponents to undertake certain procedural aspects of consultation.

The proponent's responsibilities for procedural aspects of consultation include:

- Providing notice to the elected leadership of the First Nation and/or Métis communities (e.g., First Nation Chief) as early as possible regarding the project;
- Providing First Nation and/or Métis communities with information about the proposed project including anticipated impacts, information on timelines and your environmental assessment process;

v.1.1.4.0

- Following up with First Nation and/or Métis communities to ensure they received project information and that they are aware of the opportunity to express comments and concerns about the project. If you are unable to make the appropriate contacts (e.g. are unable to contact the Chief) please contact the Environmental Assessment and Planning Coordinator at the Ministry's appropriate regional office for further direction.
- Providing First Nation and/or Métis communities with opportunities to meet with appropriate proponent representatives to discuss the project;
- Gathering information about how the project may adversely impact the relevant Aboriginal and/or Treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);
- Considering the comments and concerns provided by First Nation and/or Métis communities and providing responses;
- Where appropriate, discussing potential mitigation strategies with First Nation and/or Métis communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation, which may include providing support to help build communities' capacity to participate in consultation about the proposed project.
- Maintaining a Consultation Record to show evidence that you, the proponent, completed all the steps itemized above or at a minimum made meaningful attempts to do so.
- Upon request, providing copies of the Consultation Record to the Ministry. The Consultation Record should:
 - summarize the nature of any comments and questions received from First Nation and/or Métis communities
 - describe your response to those comments and how their concerns were considered
 - include a communications log indicating the date and times of all communications; and
 - document activities in relation to consultation.

Successful consultation depends, in part, on early engagement by proponents with First Nation and Métis communities. Information shared with communities must be clear, accurate and complete, and in plain language where possible. The consultation process must maintain sufficient flexibility to respond to new information, and we trust you will make all reasonable efforts to build positive relationships with all First Nation and Métis communities contacted.

If you need more specific guidance on Aboriginal consultation steps in relation to your proposed project, or if you feel consultation has reached an impasse, please contact the Environmental Assessment and Planning Coordinator at the Ministry's appropriate regional office.

Preliminary Assessment Checklist: First Nation and Métis Community Interests and Rights

In addition to other interests, some main concerns of First Nation and Métis communities may pertain to established or asserted rights to hunt, gather, trap, and fish – these activities generally occur on Crown land or water bodies. As such, projects related to Crown land or water bodies, or changes to how lands and water are accessed, may be of concern to Aboriginal communities.

Please answer the following questions and keep related notes as part of your consultation record. "Yes" responses will indicate a potential adverse impact on Aboriginal or treaty rights.

When you have identified that your project may trigger rights-based consultation through the following questions, you should arrange for a meeting between you and the Environmental Assessment and Planning Coordinator at the Ministry's appropriate regional office to provide an early opportunity to confirm whether Ontario's duty to consult is triggered and to discuss roles and responsibilities in that event.

	YES	NO
1. Are you aware of concerns from First Nation and Métis communities about your project or a similar project in the area? The types of concerns can range from interested inquiries to environmental complaints, and even to land use concerns. You should consider whether the interest represents on-going, acute and/or widespread concern.		✓
2. Is your project occurring on Crown land, or is it close to a water body? Might it change access to either?		✓
3. Is the project located in an open or forested area where hunting or trapping could take place?		✓
4. Does the project involve the clearing of forested land?		✓
5. Is the project located away from developed, urban areas?		✓
6. Is your project close to, or adjacent to, an existing reserve? Projects in areas near reserves may be of interest to the First Nation and Métis communities living there.		✓
7. Will the project affect First Nations and/or Métis ability to access areas of significance to them?		✓
8. Is the area subject to a land claim? Information about land claims filed in Ontario is available from the Ministry of Aboriginal Affairs; information about land claims filed with the federal government is available from Aboriginal Affairs and Northern Development Canada.	✓	
9. Does the project have the potential to impact any archaeological sites?		

Lystek

Christine Furlong

From: Newton, Craig (MOECC) <Craig.Newton@ontario.ca>
Sent: May-25-16 11:21 AM
To: jellis@southgate.ca
Cc: Munro, Alison (MOECC); Kershaw, Allison (MOECC); Christine Furlong
Subject: MOECC Comments Notice of Project Commencement Dundalk Wastewater Treatment Capacity Class EA, Twp of Southgate
Attachments: MOECC Comments Notice of Project Commencement Dundalk Wastewater Treatment Capacity Class EA, Twp of Southgate.pdf

Dear Mr. Ellis:

Please find attached the MOECC's comments on the Notice of Project Commencement for the above noted project. Please note that this serves as the ministry's formal correspondence and will only be delivered via this email. That is, the original will not follow by Canada Post.

Yours truly,

Craig Newton
Regional Environmental Planner / Regional EA Coordinator
Ministry of the Environment & Climate Change
Southwestern Region
(519) 873-5014

Shari Page

From: Neumann, Carol (OMAFRA) <carol.neumann@ontario.ca>
Sent: Friday, May 20, 2016 9:04 AM
To: Shari Page
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement
Attachments: image001.jpg

Hi Shari;
Email only is fine. Thanks.
Carol

Carol Neumann
Rural Planner, Environmental and Land Use Policy Ontario Ministry of Agriculture, Food and Rural Affairs
6484 Wellington Road 7, Elora, ON NOB 1S0
Tel: 519-846-0941

Agricultural Information Contact Centre
1-877-424-1300 or TTY 1-855-696-2811

From: Shari Page [spage@tritoneng.on.ca]
Sent: May 19, 2016 10:01 AM
To: Neumann, Carol (OMAFRA)
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity, for the community of Dundalk.

We would like to know your preference for receiving future correspondence for this project whether it be email only, mail only or if you would prefer both. Kindly let us know.

Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page

[Description: Description: Description: Description: TRITON-SEAHORSE]Triton Engineering Services Limited

105 Queen Street West, Unit 14 Fergus, ON N1M 1S6 Tel - (519) 843-3920 • Fax - (519) 843-1943 •
www.tritoneng.on.ca<<http://www.tritoneng.on.ca>>

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Shari Page

From: Denise Holmes <dholmes@melancthontownship.ca>
Sent: Thursday, May 19, 2016 10:16 AM
To: Shari Page
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Hi Shari,

You can just send the correspondence by email.


Thanks.

Regards,

Denise



Denise B. Holmes, AMCT | CAO/Clerk | Township of Melancthon | dholmes@melancthontownship.ca | PH: 519-925-5525 ext 101 | FX: 519-925-1110 | www.melancthontownship.ca |

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From: Shari Page [mailto:spage@tritoneng.on.ca]
Sent: Thursday, May 19, 2016 10:13 AM
To: dholmes@melancthontownship.ca
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: spage@tritoneng.on.ca

Message Score: 50
My Spam Blocking Level: High

High (60): **Pass**
Medium (75): **Pass**
Low (90): **Pass**

[Block](#) this sender
[Block](#) tritoneng.on.ca

This message was delivered because the content filter score did not exceed your filter level.

Shari Page

From: Benner, Kim (MNRF) <kim.benner@ontario.ca>
Sent: Thursday, May 19, 2016 1:27 PM
To: Shari Page
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Hi Shari,

Thank you for the notice. You can continue to send these notices to me. I'm the planner here for the review of EAs in Grey County.

Thanks!

Kim

*Kim Benner
District Planner
Midhurst District
Ministry of Natural Resources and Forestry
(705) 725-7534*

From: Shari Page [mailto:spage@tritoneng.on.ca]
Sent: May 19, 2016 9:59 AM
To: Benner, Kim (MNRF)
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

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Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Shari Page

From: Galbraith, David (MAH) <David.Galbraith@ontario.ca>
Sent: Thursday, May 19, 2016 9:58 AM
To: Shari Page
Subject: Automatic reply: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Please be advised that as of Friday August 28, 2015 I am no longer with the Ministry of Municipal Affairs and Housing. For assistance, please contact Scott Oliver, Manager or Planning and Development at scott.oliver@ontario.ca.

If you require immediate assistance, please feel free to call our office at 519-873-4020 or toll free at 1-800-265-4736 and someone will be happy to assist you.

Thank you,

David Galbraith

Shari Page

From: Scherzer, Randy <Randy.Scherzer@grey.ca>
Sent: Thursday, May 19, 2016 10:49 AM
To: Shari Page
Cc: Christine Furlong; Scribner, Monica
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Hi Shari,

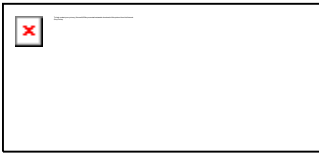
Thanks for your email. Any future correspondence regarding this can be sent to us via email. If you can send it to planning@grey.ca it would be greatly appreciated.

Thanks,
Randy

Randy Scherzer

Director of Planning

Phone: +1 519-372-0219 ext. 1237



From: Shari Page [mailto:spage@tritoneng.on.ca]
Sent: Thursday, May 19, 2016 10:20 AM
To: Scherzer, Randy
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

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Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Shari Page

From: FPP.CA / PPP.CA (DFO/MPO) <fisheriesprotection@dfo-mpo.gc.ca>
Sent: Thursday, May 19, 2016 10:55 AM
To: Shari Page
Subject: RE: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Hello Shari,

Notification via email is sufficient. I should note that we do not often have comments to provide on these packages, but we usually look at them for their proximity to known species at risk locations.

Cheers,

Andrew Geraghty

Fisheries Protection Program Biologist, Central & Arctic Region
Fisheries and Oceans Canada / Government of Canada
Andrew.Geraghty@dfo-mpo.gc.ca / Tel: 905-336-4560

Biologiste, protection des pêches, Région du Centre et de l'Arctique
Pêches et Océans Canada / Gouvernement du Canada
Andrew.Geraghty@dfo-mpo.gc.ca / Tél. : 905-336-4560

From: Shari Page [mailto:spage@tritoneng.on.ca]
Sent: May-19-16 10:02 AM
To: FPP.CA / PPP.CA (DFO/MPO)
Cc: Christine Furlong
Subject: Township of Southgate, Dundalk Wastewater Treatment Capacity, Notice of Project Commencement

Good morning,

On behalf of the Township of Southgate, we have mailed out a hard copy of a project introductory letter including a *Notice of Project Commencement for the Township of Southgate, Class Environmental Assessment, Dundalk Wastewater Treatment Capacity*, for the community of Dundalk.

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Should you require further clarification to any of the information in the package you will receive, please do not hesitate to contact myself or Christine Furlong of our office.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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E.2.0 – Public Information Centre (PIC) No.1

E.2.1 - Advertisements

(The Dundalk Herald published November 2 and 9, 2022)



Township of Southgate

Class Environmental Assessment

Dundalk Wastewater Treatment Capacity

Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Site Location

Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
 Township of Southgate
 185667 Grey County Road 9
 Dundalk, ON
 NOC 1B0
 Phone: 519-923-2110 x250
 Fax: 519-923-9262
 Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
 Triton Engineering Services Limited
 105 Queen Street, Unit 14
 Fergus, ON
 N1M 1S6
 Phone: 519-843-3920 x222
 Fax: 519-843-1943
 Email: dlyttle@tritoneng.on.ca

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

E.2.2 - Notice of PIC #1 (Indigenous Communities)

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:43 PM
To: heather.levèque@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (HLevesque) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Heather Levecque
Director, Policy and Consultation Unit
Heather.levecque@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Levecque,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022
Public Information Centre and Open House
Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



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NOC 1B0
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Fax: 519-923-9262
Email: jellis@southgate.ca

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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:44 PM
To: 'pauline.wakegijig@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (P.Wakegijig) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

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Kind regards,
Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Pauline Wakegijig
Executive Assistant (Acting)
Policy and Consultation Unit
Pauline.wakegijig@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Wakegijig,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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<https://www.southgate.ca/Modules/News/en>

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Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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The Study Process:

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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: info@hdi.land
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Haudenosaunee Chiefs Council-- NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Haudenosaunee Confederacy
c/o Haudenosaunee Development Institute
16 Sunrise Court, Suite 600
P.O. Box 714
OSHWEKEN, On
N0A 1M0

ATTENTION: Chiefs Council
info@hdi.land

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chiefs Council,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

Township of Southgate's website
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Public Information Centre and Open House
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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Email: jellis@southgate.ca

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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:55 PM
To: molly.mann@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Indigenous Relations & Reconciliation (MMann) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari

Shari Page



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Consulting Engineers

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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Molly Mann
Manager, Indigenous Relations Unit
Molly.mann@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Mann,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
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Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 3:46 PM
To: jessica.hill2@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Indigenous Relations & Reconciliation - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Jessica Hill
Senior Advisor, Indigenous Relations
Jessica.hill2@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Hill,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

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Thursday, November 17th, 2022
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Project Background

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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NOC 1B0
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N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Thursday, November 3, 2022 4:21 PM
To: 'consultations@metisnation.org'
Subject: FW: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Metis Nation of Ontario (Saugeen) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

From: Shari Page
Sent: Thursday, November 3, 2022 4:19 PM
To: 'consultation@metisnation.org' <consultation@metisnation.org>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Métis Nation of Ontario (Saugeen)
Consultation Unit
Suite 1100, 66 Slater Street
OTTAWA, Ontario
K1P 5H1

ATTENTION: consultation@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Sir/Madam,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

Township of Southgate's website
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Thursday, November 17th, 2022
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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
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Email: jeellis@southgate.ca

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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Métis Nation of Ontario
Consultation Unit
THUNDER BAY, Ontario

ATTENTION: Laura DeSaulniers
Land, Resources and Consultations
LRC Branch Coordinator
LauraD@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. DeSaulniers,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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NOC 1B0
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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: Stacey.Laforme@mncfn.ca
Cc: Abby.LaForme@mncfn.ca; Mark.LaForme@mncfn.ca; adam.laforme@mncfn.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Mississauga (Chief LaForme) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Mississauga of the Credit First Nation
2789 Mississauga Road, R.R. 6
HAGERSVILLE, Ontario
N0A 1H0

ATTENTION: Chief R. Stacey LaForme
Stacey.laforme@mncfn.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chief LaForme,

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Abby LaForme, Consultation Coordinator, Mississauga of the Credit First Nation (MNCFN)
Mark LaForme, DOCA, Mississauga of the Credit First Nation (MNCFN)
Adam LaForme, Archaeological Operations Supervisor, MNCFN



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: manager.ri@saugeenojibwaynation.ca; manager@saugeenojibwaynation.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Saugeen Ojibway SON - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Saugeen Ojibway Nation (SON)
Environment Office
10129 Highway 6
GEORGIAN BLUFFS, Ontario
N0H 2T0

ATTENTION: Peggy Mansur,
Manager
manager@saugeenojibwaynation.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Mansur,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

Township of Southgate's website
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Project Background

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate

Emily Martin, Infrastructure and Resources Manager, Saugeen Ojibway Nation (SON)

manager@saugeenojibwaynation.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Township of Southgate
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Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
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Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: 'lonnybomberry@sixnations.ca'
Cc: Tammy Martin; Tayler Hill
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (L.Bomberry) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Mr. Lonny Bomberry
Lands and Resource Director
lonnybomberry@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Bomberry,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Tammy Martin, Six Nations of the Grand River tammymartin@sixnations.ca
Tayler Hill, Six Nations of the Grand River tayler.hill@sixnations.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: markhill@sixnations.ca
Cc: Tammy Martin; rvanstone@sixnations.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (Chief Mark Hill) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Chief Mark B. Hill
markhill@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Chief Hill,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate
Tammy Martin, COS, SNGREC, Six Nations of the Grand River
Robbin Vanstone, Consultation Supervisor, Six Nations of the Grand River



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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NOC 1B0
Phone: 519-923-2110 x250
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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

E.2.3 – Notice of PIC #1 (Agency & Public)

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 4:03 PM
To: eanotification.swregion@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Form - Township of Southgate NOTICE OF PIC Class EA Dundalk WWT Capacity.xlsx; MECP Toronto (EABDirector) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Environment, Conservation and Parks
Environmental Assessment and Approvals Branch
135 St. Clair Avenue West, 1st Floor
TORONTO, Ontario
M4V 1P5

ATTENTION: Director, Class EAs and Declaration Section
EABDirector@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Director,

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

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How to Contact:

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Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:04 PM
To: 'john.s.ritchie@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Owen Sound District (John S Ritchie) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, '*Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Consulting Engineers

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Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Environment, Conservation and Parks
Owen Sound District Office
3rd Floor, 101 7th Street East
OWEN SOUND, Ontario
N4K 0A5

ATTENTION: John S. Ritchie
Manager
john.s.ritchie@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Ritchie,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022
Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022
Public Information Centre and Open House
Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario
Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

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The Problem Statement for this project is as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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The Study Process:

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Public Information Centre (PIC) No. 1:

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Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

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Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:06 PM
To: dan.l.thompson@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Natural Resources and Forestry Midhurst (Dan Thompson) - NOTICE OF PIC Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

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Kind regards,
Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Ministry of Natural Resources and Forestry
Midhurst District
2284 Nursery Road
MIDHURST, Ontario
L9X 1N8

ATTENTION: Mr. Dan Thompson,
District Manager
dan.l.thompson@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Thompson,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: scott.taylor@grey.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: County of Grey (S.Taylor, Dir. of Planning) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

County of Grey
Planning and Development
595 9th Avenue East
OWEN SOUND, Ontario
N4K 2E3

ATTENTION: Scott Taylor
Director of Planning
scott.taylor@grey.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Taylor,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

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N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: clorenz@grandriver.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: GRCA (C.Lorenz Resource Planner) - NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

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Kind regards,
Shari

Shari Page



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Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Grand River Conservation Authority
400 Clyde Road, P.O. Box 729
CAMBRIDGE, Ontario
N1R 5W6

ATTENTION: Chris Lorenz
Resource Planner
clorenz@grandriver.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Mr. Lorenz,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Project Background

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The Township of Southgate has commenced with a Schedule C Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This assessment will evaluate the existing WWTF, and alternative solutions to address the wastewater treatment capacity issue. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility are being considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the existing WWTF property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: 'dholmes@melancthontownship.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Township of Melancthon (D.Holmes CAO) NOTICE OF PIC Class EA Dundalk Wastewater Treatment Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

November 2, 2022

Township of Melancthon
157101 Highway 10
MELANCTHON, Ontario
L9V 2E6

ATTENTION: Denise B. Holmes
CAO/Clerk
dholmes@melancthontownship.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Ms. Holmes,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

Monday, November 14th, 2022 – Friday, November 18th, 2022

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/Modules/News/en>

Thursday, November 17th, 2022

Public Information Centre and Open House

Frank Macintyre Building, 250 Owen Sound Street, Dundalk, Ontario

Drop-In format between 3:00 P.M. and 7:00 P.M.

Project Background

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

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The Problem Statement for this project is as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre

cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (WWTF) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred option. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 1:

Consultation with the public, key stakeholders, indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and to discuss the evaluation of alternative solutions and the preliminary preferred alternative. The Virtual Public Open House will provide background and display information materials inviting public response and be open for comments from Monday, November 14th to Friday, November 18th, 2022. This virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/Modules/News/en>

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How to Contact:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeff@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Shari Page

From: Shari Page
Sent: Tuesday, November 1, 2022 11:47 AM
To: critchie@lystek.com
Subject: NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: LYSTEK - NOTICE of PIC re DUNDALK WASTEWATER TREATMENT CAPACITY.pdf

Good morning,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.*

This Notice has been mailed and will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any further questions or concerns, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
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Consulting Engineers

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

October 31, 2022

LYSTEK INTERNATIONAL INC.
125 McGovern Drive
Unit #1
CAMBRIDGE, Ontario
N3H 4H7
critchie@lystek.com

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre
Our File: W4609A

Dear Sir/Madam,

You are invited to the first virtual and in person *Public Information Centre (PIC)* for the above noted project to provide an update regarding the on-going Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

Township of Southgate's website
<https://www.southgate.ca/Modules/News/en>

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre
cc: Jim Ellis, Public Works Manager, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual and Drop-In Public Information Centre

Project Background:

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Township of Southgate
185667 Grey County Road 9
Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jeellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

E.2.4 – PIC #1 Comments & Responses

Shari Page

From: Laura Desaulniers <LauraD@metisnation.org>
Sent: Wednesday, November 2, 2022 4:04 PM
To: Shari Page
Subject: Automatic reply: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Thank you for your email ,I am out of the office until Nov 3rd with limited access to email. Until such time my email response time will be delayed

Shari Page

From: EA Notices to SWRegion (MECP) <eanotification.swregion@ontario.ca>
Sent: Wednesday, November 2, 2022 4:03 PM
To: Shari Page
Subject: Automatic reply: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

This is to acknowledge your email has been delivered to the Regional email account. A Regional EA Coordinator will contact you if additional information is needed. To speak directly to a Regional EA Coordinator, go to the INFO-GO website and under our ministry, select: 1) Drinking Water and Environmental Compliance Division 2) applicable Regional Office 3) Technical Support Section 4) Air, Pesticides, and Environmental Planning 5) Environmental Planner and EA Coordinator

Shari Page

From: OP Habitat (DFO/MPO) <DFO.OPHabitat.MPO@dfo-mpo.gc.ca>
Sent: Wednesday, November 2, 2022 12:37 PM
To: Shari Page
Subject: FFHPP.CA Auto-Reply

Thank you for contacting Fisheries and Oceans Canada, Fish and Fish Habitat Protection Program.

This e-mail is a confirmation of receipt for your submission of a Request for Review form or Code of Practice notification form. Please do not mail a hard copy of your submission to any of our offices at this time unless you are unable to submit a digital version.

Please note that we are currently receiving a higher than normal volume of submissions and inquiries and continue to operate under alternate work arrangements.

We will respond to your email as soon as possible. Thank you for your patience.

Merci d'avoir pris contact avec le Programme de protection du poisson et de son habitat de Pêches et Océans Canada.

Le présent courriel accuse réception du formulaire de demande d'examen ou d'avis de code de pratique que vous avez envoyé. Veuillez ne pas envoyer de copie papier à nos bureaux pour le moment à moins que vous soyez dans l'incapacité d'envoyer une version numérique.

Veuillez noter que nous recevons actuellement un volume d'envois et de demandes supérieur à la normale et que nous continuons à travailler selon des modalités adaptées.

Nous répondrons à votre courriel dès que possible. Nous vous remercions pour votre patience.

Shari Page

From: Ag Info <ag.info.omafra@ontario.ca>
Sent: Monday, November 7, 2022 3:07 PM
To: Shari Page
Subject: FW: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: OMAFRA (Manager Western Ontario) - NOTICE OF PIC Dundalk Wastewater Treatment Capacity.pdf

Hello Shari,

Thank you for contacting the Ministry of Agriculture, Food and Rural Affairs Agricultural Information Contact Centre. We appreciate this opportunity to respond to your enquiry.

We have forwarded your email to OMAFRA's Rural Planner David Marriott.

The Agricultural Information Contact Centre (AICC) takes pride in responding to farm, agri-business and rural business inquiries in a timely fashion. We want to provide you with the best service possible, and in order to help us accomplish this, we would ask that you please take 1-2 minutes to complete our [customer satisfaction survey](#)

Sincerely,

Marnie Webb
Team Lead (A) Agricultural Information Contact Centre
Ministry of Agriculture, Food and Rural Affairs
1 Stone Road West 4NE Guelph ON N1G 4Y2
Toll free: 1-877-424-1300
Cell: 519-400-3297

Please Note: As part of providing [accessible customer service](#), please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Shari Page <spage@tritoneng.on.ca>
Sent: Wednesday, November 02, 2022 12:06 PM
To: Ag Info <ag.info.omafra@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon,

On behalf of the Township of Southgate, please find attached, 'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C for the Township of Southgate, Dundalk Wastewater Treatment Capacity.

This Notice will also appear in the next two (2) consecutive editions of The Dundalk Herald, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



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Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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November 3, 2022

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON, N0C 1B0
jellis@southgate.ca

Dustin Lyttle, P.Eng
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON, N1M 1S6
dlyttle@tritoneng.on.ca

**Re: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment (File W4609A)**

Thank-you for circulating the Grand River Conservation Authority (GRCA) on the above-noted Class Environmental Assessment Notice of Public Information Centre.

Natural Heritage and Natural Hazard Features in the area which may be impacted are as follows:

- James Foley Drain and tributaries
- Floodplain Associated with James Foley Drain and its tributaries
- Melancthon Provincially Significant Wetland (PSW) Complex #1
- Unevaluated GRCA wetlands

The Class EA may propose measures that have the potential to impact these regulated features. As such, the GRCA wishes to stay involved as the EA process moves forward. Please include the GRCA on the Project mailing list.

Should you have any questions or require additional information, please feel free to contact me at 519-621-2763 ext. 2236 or clorenz@grandriver.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Lorenz', is positioned above the typed name.

Chris Lorenz, M.Sc.
Resource Planner
Grand River Conservation Authority



Planning and Development

595 9th Avenue East, Owen Sound Ontario N4K 3E3
519-372-0219 / 1-800-567-GREY / Fax: 519-376-7970

November 29th, 2022

Via Email Only

Jim Ellis, Public Works Manager
Township of Southgate
185667 Grey County Road 9
Dundalk, ON, N0C 1B0
jellis@southgate.ca

And:

Dustin Lyttle, P. Eng.
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON, N1M 1S6
dlyttle@tritoneng.on.ca

**RE: Dundalk Wastewater Treatment Facility
Class Environmental Assessment
Notice of Public Information Centre**

Dear Jim Ellis and Dustin Lyttle:

Grey County has received a Notice of Public Information Centre, indicating that the Township of Southgate has retained Triton Engineering Services Ltd. to complete and document a Schedule C Class EA in accordance with the Municipal Class Environmental Assessment Document, October 2000, as amended in 2015. County planning staff offer the following comments in relation to the Grey County Official Plan and Provincial Policy Statement.

In October 2022, Grey County Council adopted Official Plan Amendment #11, which is an extensive housekeeping update that encompasses a range of amendments to the County's current official plan. At present, OPA-11 is under appeal for a different matter, but staff are hopeful that this may be resolved in the coming weeks. For more information regarding the changes proposed through OPA-11, please see the County's website: <https://www.grey.ca/government/special-projects/proposed-county-official-plan-amendment-11>

One of the proposed amendments via OPA#11 is an update to the County's growth projections, based on the findings of a recent Growth Management Study. The Study includes a variety of projections across a 25-year planning horizon (to 2046), including population growth, household growth,

employment growth and seasonal recreational units, which have been included within the proposed amendment to the County's Official Plan. The findings of the Study have been compared with the recent release of 2021 census data and are acknowledged to be reasonably accurate for the 2021 year. For the Township of Southgate, the projected growth, up to the year 2046, has been broken down in the following four tables:

Table 1: Permanent Population Growth Projections and Allocations to 2046

Year	2021	2026	2031	2036	2041	2046	Growth
Township of Southgate	8610	9500	10330	11140	11930	12780	4170
Grey County	103,320	108,650	113,450	118,150	122,680	127,130	23,810

Table 2: Household Growth Projections and Allocations to 2046

Year	2021	2026	2031	2036	2041	2046	Growth
Township of Southgate	3280	3750	4180	4570	4920	5320	2040
Grey County	43,530	46,550	49,160	51,550	53,650	55,570	12,040

Table 3: Employment Growth Projections and Allocations to 2046

Year	2021	2026	2031	2036	2041	2046	Growth
Township of Southgate	2120	2320	2500	2700	2910	3120	1000
Grey County	43,550	45,360	46,990	48,590	50,420	52,230	8,680

Table 4: Seasonal Recreational Unit Estimate by Municipality to 2046

Year	2021	2026	2031	2036	2041	2046
Township of Southgate	250	240	230	230	230	240

In the case of the above projections, staff note that Southgate is forecasted to continue to grow at a faster-than-historical pace over the planning horizon, increasing its share of the County's overall population and employment. Given proximity to GTA employment, Southgate is poised to experience rapid development in the early part of the forecast period and as such, the County has been advised by the economic consultant to monitor the progress of Southgate's development, particularly the timing of additional wastewater servicing capacity, to ensure the Township's projections can be accommodated. Should a facility upgrade, or expansion be pursued, it is noted that a review of the growth forecasts will likely be required. County staff further acknowledge that the above projections are not an 'exact' science, and it is anticipated that these numbers will be reviewed and updated at regular 5-year intervals going forward.

From a general planning perspective, Grey County is supportive of development on full municipal servicing and supports the Township's intention to consider cost effective sewage collection and treatment alternatives for the Dundalk urban center that will minimize environmental impacts and provide additional wastewater treatment capacity. County staff would encourage the Township and Triton Engineering to make use of the above projected growth numbers in relation to the proposed evaluation of wastewater treatment works, in addition to any other data or resources at the Township's disposal.

Staff note that Section 8.9.1 of the Grey County Official Plan speaks specifically to Services, with municipal sewage and water services being the preferred form of servicing for settlement areas. This is consistent with Section 1.6.6. of the Provincial Policy Statement (PPS, 2020), which further elaborates that sewage and water systems shall be provided in a manner that can be sustained by the water resources upon which such services rely; prepares for the impacts of a changing climate; is feasible and financially viable over their lifecycle; protects human health and safety, and the natural environment; and promotes water conservation and water use efficiency.

Section 8.9.1 (16) of the County's OP states:

16) Local municipalities must comply with recommended buffer separation guidelines as presented in the Ministry of the Environment, Conservation and Parks D-2 Guideline or its successor document, for compatibility between wastewater treatment facilities/sewage treatment works as shown on Appendix A and those outside of but within 400 metres of the Grey County boundaries, and sensitive land uses. Municipalities are encouraged to identify in their official plans and/or zoning by-laws the locations of municipal and communal sewage treatment works as shown as wastewater treatment facilities on Appendix A and those outside of but within 400 metres of the Grey County boundaries.

In this regard, it is recommended that any expansion or upgrading of existing wastewater treatment facilities be considered in relation to the impact on any surrounding, sensitive land uses.

We would appreciate if the Township could keep the County's Planning Department informed of any progress related to this project. Please email any future updates to planning@grey.ca.

If you wish to discuss this matter further, please contact me.

Page 4
November 29th, 2022

Yours truly,

Liz Buckton

Senior Planner

(519) 372 0219 ext. 1298

Liz.Buckton@grey.ca

www.grey.ca

E.2.5 – PIC #1 Presentation Materials

DUNDALK WASTEWATER TREATMENT FACILITY

Schedule "C" Municipal Class
Environmental Assessment

Public Information Centre No.1



November 14 - November 18, 2022

Page 563 of 806



WELCOME

Thank you for your interest in this project. Your input, questions and/or comments on the material presented in this Online PIC are encouraged. This presentation will be available from November 14th through to November 18th.

Upon your review of this material, please submit your input, questions and/or comments on or before **December 1st, 2022** to **jellis@southgate.ca** or **dlyttle@tritoneng.on.ca** . A member of the Project Team will respond to any questions raised.

Comments and information received will be collected under the Ontario Environmental Assessment Act and in accordance with the Freedom of Information and Protection of Privacy Act and, with the exception of personal information, may be included in the project documentation and become part of the public record.



CONTACTS

Project Team members are available to assist with website navigation and submission of comments by mail/phone/email to:

Dustin Lyttle, P.Eng

Consultant

Triton Engineering Services Limited

105 Queen Street W, Unit 14

Fergus, ON, N1M 1S6

Phone: 519-843-3920 x222

Fax: 519-843-1943

Email: dlyttle@tritoneng.on.ca

Jim Ellis, CRS-S

Public Works Manager

Township of Southgate

185667 Grey County Road

RR#1 Dundalk, ON, N0C 1B0

Phone: 519-923-2100 x250

Fax: 519-923-9262

Email: jellis@southgate.ca



MUNICIPAL CLASS EA PLANNING DESIGN PROCESS

Phase 1

Identify the problem or opportunity

Phase 2

Identify alternative solutions to the problem or opportunity

Phase 3

Identify alternative design concepts for the preferred solution

Phase 4

Complete the Environmental Study Report (ESR)

Phase 5

Implement the design

PROJECT BACKGROUND

The Township of Southgate owns and operates the Dundalk Wastewater Treatment Facility (Facility) located at 752051 Ida Street, south of Dundalk. The facility generally consists of four (4) wastewater lagoons followed by filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. Proposed growth in Dundalk will result in allocation of the remaining reserve capacity of the facility to future development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available.



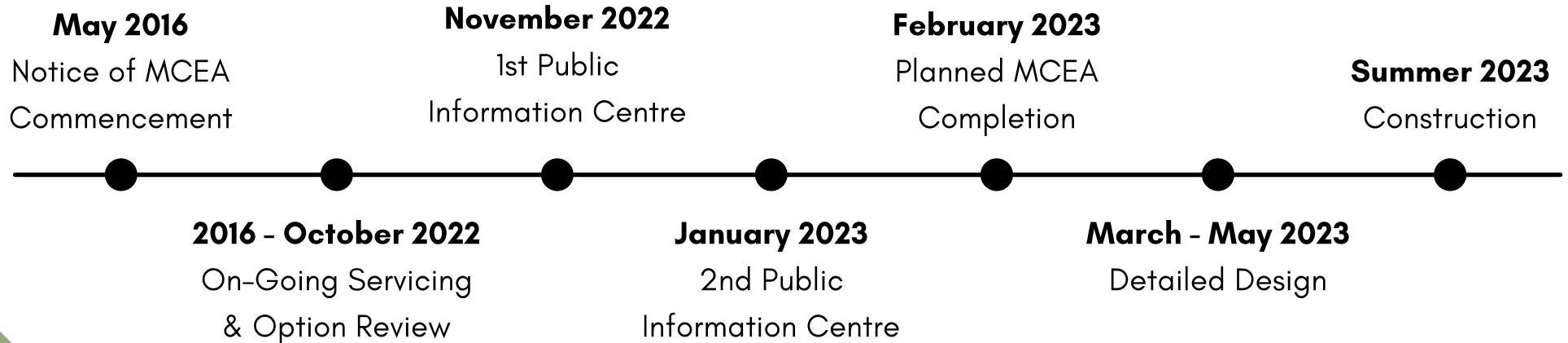
PROBLEM STATEMENT

Based on the project background, the following problem statement was identified as part of Phase 1 of the Class EA process:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”



PROJECT TIMELINE



STUDIES COMPLETED

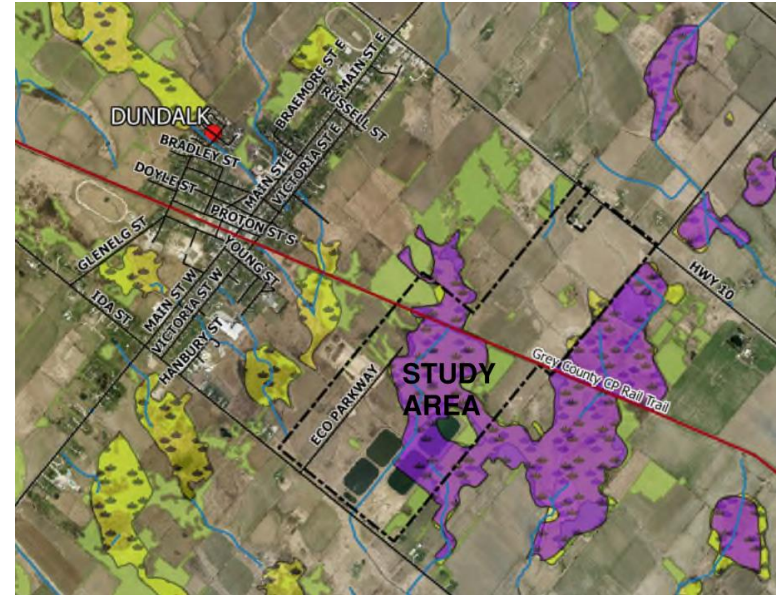
- Environmental Impact Assessment (2017)
- Aquatic Habitat Assessment (2018)
- I&I Study (October 2020)
- Assimilative Capacity Study (2021)



ENVIRONMENTAL IMPACT STUDY

In Spring of 2016 an Environmental Impact Study was initiated that focused on characterizing the existing natural heritage features within the study area, including mapping of significant natural features (wetlands, breeding grounds etc.).

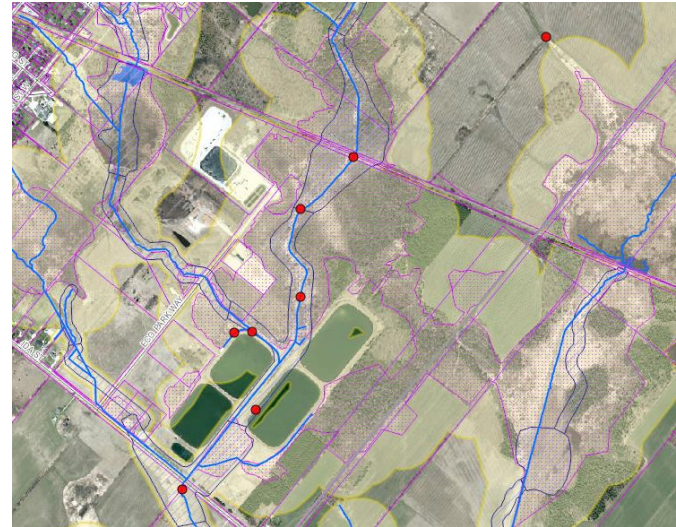
The study of existing conditions indicated that there are significant species, features, and ecological functions within the study area that will require mitigation efforts to preserve. Constraints will be used to inform the detailed design and development criteria.



AQUATIC HABITAT ASSESSMENT

In Fall of 2017 an Aquatic Habitat Assessment was initiated that focused on characterizing the existing environmental features in different tributaries within the study area, including surveying of fish, inspection of habitats, and review of Species At Risk (SAR).

The study of existing conditions indicated that there are viable fish communities and habitats as well as extensive vegetation within the study area. Various management methods will be required to mitigate potential impacts to the vegetation and aquatic species.



ASSIMILATIVE CAPACITY STUDY

In 2017 an Assimilative Capacity Study was initiated that focused on the current and future effluent characteristics of the discharge entering the James Foley Drain, a tributary of the Grand River.

The study indicated that the high-quality effluent discharged from the existing Facility improves conditions downstream in the Foley Drain. The additional flow resulting from the proposed increased capacity has potential to benefit all aquatic life living in the downstream reaches of the Grand River. Effluent criteria was established as part of this study to ensure that potential environmental impacts are mitigated.



EVALUATION CRITERIA

Technical



- Operation and Maintenance Requirements
- Ability to Service Design Growth
- Existing Facility/Site
- Proven Treatment Capability

Social & Cultural



- Temporary Construction
- Neighbouring Land Use
- Indigenous Communities
- Visual Amenity

Economic



- Local Economy
- Capital Costs
- Operational & Maintenance Costs
- Funding Sources

Natural



- Wetlands and Water Courses
- Ground Water Quality & Source Water Protection
- Sensitive Species
- Use of Area by Wildlife
- Air Quality & Noise

ALTERNATIVE SOLUTIONS

- Alternative 1: Do nothing
- Alternative 2: Reduce infiltration and inflow into sanitary sewers
- Alternative 3: Implement water conservation measures
- Alternative 4: Expand and optimize the existing treatment facility
- Alternative 5: Construct a mechanical plant
- Alternative 6: Combination of Alternatives 2, 3 and 4

ALTERNATIVE 1

Do Nothing

- Does not address the problem statement.
- Operational constraints at the existing Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Will result in a Moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, resulting in increased risk to Natural Environment.

ALTERNATIVE 2

Reduce Infiltration and Inflow into Sanitary Sewer Collection System

- Does not address the problem statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing Inflow and Infiltration may allow for some continued development, this will inevitably result in a Moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, resulting in increased risk to Natural Environment.

ALTERNATIVE 3

Implement Water Conservation Measures

- Does not address the problem statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing Inflow and Infiltration may allow for some continued development, this will inevitably result in a Moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, resulting in increased risk to Natural Environment.

ALTERNATIVE 4

Expand and Optimize the Existing Treatment Facility

- Addresses the problem statement.
- Existing operational constraints at the Facility are addressed, while maintaining operator intervention requirements resulting in a highly positive outcome for the Technical Environment.
- Minimal changes to the Social and Cultural Environment.
- Will allow continued Development for the current planned growth, however at an estimated cost between \$4M and \$6M resulting in a net positive outcome for the Economic Environment.
- Effluent quality will improve resulting in a positive outcome for the Natural Environment.

ALTERNATIVE 5

Construct Mechanical Facility

- Addresses the problem statement.
- Existing constraints at the Facility are addressed, however a new plant will require increased operator intervention, net result is a marginally positive outcome for the Technical Environment.
- Decommissioning of existing Facility along with construction of the new plant will have temporary negative impacts, new plant will have additional truck traffic to deal with sludge production, net result is a negative outcome for the Social and Cultural Environment and Natural Environment .
- Will allow continued Development for the foreseeable future, however at an estimated cost between \$10M and \$15M resulting in a net negative outcome for the Economic Environment.

ALTERNATIVE 6

Combination of Alternatives 2, 3 and 4

- Addresses the problem statement
- Allows to maximize positive outcomes

EVALUATION OF ALTERNATIVES

EXPECTED OUTCOME	SCORE
Highly Positive	10
Positive	5
No Change	0
Negative	-5
Highly Negative	-10



EVALUATION OF ALTERNATIVES

Criteria	#1	#2	#3	#4	#5	#6
Problem Statement	-10	5	5	10	10	10
Technical Environment	-25	-10	-10	45	20	45
Social and Cultural Environment	0	0	0	-2	-15	-2
Economic Environment	-10	-7	-5	0	-10	-1
Natural Environment	-5	5	2	8	0	13
TOTAL SCORE	-50	-7	-8	61	5	65



PREFERRED ALTERNATIVE

Alternatives 2, 3 and 4

Based on the evaluation of the alternatives, Alternative 6 is the preferred solution which is a combination of Alternatives 2, 3 and 4. This Alternative will reduce inflow/infiltration to the collection system, implement water conservation measures thereby reducing sewage flows and provide improvements/upgrades to the existing Facility to increase capacity and treatment consistency.

CURRENT STATUS

Facility Improvements

In order to determine how the existing Facility could be improved, optimized and expanded the Township released a Request For Proposal (RFP) to industry . The results of this RFP process were presented to Council, resulting in the selection of preferred technology/treatment strategy which included MBBR, upgraded aeration and improved filtration. The intent is to move forward with the design of the potential improvements to the existing Facility.

THANK YOU!

We welcome your comments and questions. Please provide your comments and questions by December 1th, 2022.

Dustin Lyttle, P.Eng
Consultant

Triton Engineering Services Limited
105 Queen Street W, Unit 14
Fergus, ON, N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Jim Ellis, CRS-S

Public Works Manager

Township of Southgate
185667 Grey County Road
RR#1 Dundalk, ON, N0C 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca



E.3.0 - Virtual Public Information Centre(PIC) No.2

E.3.1 - Advertisements

(The Dundalk Herald published March 8 and 15, 2022)



Township of Southgate

Class Environmental Assessment

Dundalk Wastewater Treatment Capacity

Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2110 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on March 8th, 2023.

E.3.2 - Notice of PIC #2 (Indigenous Communities)

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:19 PM
To: heather.levecque@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (HLevecque) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Thursday, November 3, 2022 3:43 PM
To: 'heather.levecque@ontario.ca' <heather.levecque@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of *The Dundalk Herald*, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Heather Levecque
Director, Policy and Consultation Unit
Heather.levecque@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Levecque,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:19 PM
To: 'pauline.wakegijig@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min of Aboriginal Affairs (P.Wakegijig) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Thursday, November 3, 2022 3:44 PM
To: 'pauline.wakegijig@ontario.ca' <pauline.wakegijig@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of *The Dundalk Herald*, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Aboriginal Affairs
Aboriginal Relations / Ministry Partnerships Branch
9th Floor, 160 Bloor Street East
TORONTO, Ontario M7A 2E6

ATTENTION: Pauline Wakegijig
Executive Assistant (Acting)
Policy and Consultation Unit
Pauline.wakegijig@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Wakegijig,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

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The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 2:29 PM
To: Johnson, Ashley (IAO)
Subject: RE: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Ministry of Indigenous Affairs (A.Johnson) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon Ashley,

Moving forward and as per Pauline's request, I have now included you on our *Official contact list* for this project. I just wanted to reach out and officially send you the attached letter and **Notice of PIC No. 2, Class EA, Schedule C, Dundalk Wastewater Treatment Capacity**.

Please let me know if you wish any further changes to your information. It would be much appreciated.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Wakegijig, Pauline (IAO) <Pauline.Wakegijig@ontario.ca>
Sent: Monday, March 6, 2023 1:47 PM
To: Shari Page <spage@tritoneng.on.ca>
Cc: Johnson, Ashley (IAO) <Ashley.Johnson@ontario.ca>
Subject: RE: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Hi Shari,

Can you kindly change the contact information for these notifications. If you could kindly remove my name and direct the emails to Ashley Johnson, Team Lead, Indigenous Relations and Programs Division, Ministry of Indigenous Affairs, that would be greatly appreciated. Ashley's email address is ashley.johnson@ontario.ca.

Thank you Shari,

Pauline.

Pauline Wakegijig | A/EA to the Director
Indigenous Relations and Ministry Partnerships Branch

Ministry of Indigenous Affairs
160 Bloor Street East, 4th Floor
Toronto, ON M7A 2E6
P: (416) 526-7202

Please Note: As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Shari Page <spage@tritoneng.on.ca>
Sent: March 6, 2023 1:19 PM
To: Wakegijig, Pauline (IAO) <Pauline.Wakegijig@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



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From: Shari Page
Sent: Thursday, November 3, 2022 3:44 PM
To: 'pauline.wakegijig@ontario.ca' <pauline.wakegijig@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, '*Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 6, 2023

Ministry of Indigenous Affairs
160 Bloor Street East, 9th Floor
TORONTO, Ontario
M7A 2E6

ATTENTION: Ashley Johnson
Team Lead
Indigenous Relations and Programs Division
ashley.johnson@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Johnson,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

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Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
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Phone: 519-843-3920 x222
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Email: dlyttle@tritoneng.on.ca

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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:19 PM
To: info@hdi.land
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Haudenosaunee Chiefs Council - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
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Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: 'info@hdi.land' <info@hdi.land>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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On behalf of the Township of Southgate, please find attached, *Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Haudenosaunee Confederacy
c/o Haudenosaunee Development Institute
16 Sunrise Court, Suite 600
P.O. Box 714
OSHWOKEN, ON N0A 1M0

ATTENTION: Chiefs Council
info@hdi.land

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Chiefs Council,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

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The Study Process:

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Public Information Centre (PIC) No. 2:

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Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
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Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:08 PM
To: Laura DeSaulniers
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Metis Nation (L.DeSaulniers) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: 'Laura DeSaulniers' <LauraD@metisnation.org>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Métis Nation of Ontario
Consultation Unit
THUNDER BAY, Ontario

ATTENTION: Laura DeSaulniers
Land, Resources and Consultations
LRC Branch Coordinator
LauraD@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. DeSaulniers,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023
Virtually (online)

Township of Southgate's website

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

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Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:08 PM
To: 'consultations@metisnation.org'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Metis Nation (Saugeen) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Thursday, November 3, 2022 4:21 PM
To: 'consultations@metisnation.org' <consultations@metisnation.org>
Subject: FW: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

From: Shari Page
Sent: Thursday, November 3, 2022 4:19 PM
To: 'consultation@metisnation.org' <consultation@metisnation.org>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Kind regards,
Shari

Shari Page



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Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Métis Nation of Ontario (Saugeen)
Consultation Unit
Suite 1100, 66 Slater Street
OTTAWA, Ontario
K1P 5H1

ATTENTION: consultation@metisnation.org

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Madam/Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
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Phone: 519-843-3920 x222
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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:20 PM
To: molly.mann@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min. of Indigenous Affairs (M.Mann) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

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This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

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Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Thursday, November 3, 2022 3:55 PM
To: 'molly.mann@ontario.ca' <molly.mann@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

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Kind regards,
Shari

Shari Page



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Consulting Engineers

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Molly Mann
Manager, Indigenous Relations Unit
Molly.mann@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Mann,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:19 PM
To: jessica.hill2@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Min. of Indigenous Affairs (J.Hill) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Thursday, November 3, 2022 3:46 PM
To: 'jessica.hill2@ontario.ca' <jessica.hill2@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Indigenous Relations and Reconciliation
Suite 400, 160 Bloor Street East
TORONTO, Ontario
M7A 2E6

ATTENTION: Jessica Hill
Senior Advisor, Indigenous Relations
Jessica.hill2@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Hill,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

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Public Information Centre (PIC) No. 2:

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How to Respond:

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Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:18 PM
To: Stacey.Laforme@mncfn.ca
Cc: Abby.LaForme@mncfn.ca; Mark.LaForme@mncfn.ca; adam.laforme@mncfn.ca; DOCA.Admin@mncfn.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MNCFN (Chief LaForme & ccs) Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 4:04 PM
To: 'Stacey.Laforme@mncfn.ca' <Stacey.Laforme@mncfn.ca>
Cc: 'Abby.LaForme@mncfn.ca' <Abby.LaForme@mncfn.ca>; 'Mark.LaForme@mncfn.ca' <Mark.LaForme@mncfn.ca>; 'adam.laforme@mncfn.ca' <adam.laforme@mncfn.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Kind regards,
Shari

Shari Page



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Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Mississauga of the Credit First Nation
2789 Mississauga Road, R.R. 6
HAGERSVILLE, Ontario
N0A 1H0

ATTENTION: Chief R. Stacey LaForme
Stacey.laforme@mncfn.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Chief LaForme,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2

cc: Jim Ellis, Township of Southgate

Abby LaForme, Consultation Coordinator, Mississauga of the Credit First Nation (MNCFN)

Mark LaForme, DOCA, Mississauga of the Credit First Nation (MNCFN)

Adam LaForme, Archaeological Operations Supervisor, MNCFN



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:17 PM
To: markhill@sixnations.ca
Cc: Tammy Martin; rvanstone@sixnations.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (Chief Mark Hill)- Notice of PIC No. 2 Dundalk WWT Capacity.pdf

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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To: 'markhill@sixnations.ca' <markhill@sixnations.ca>
Cc: Tammy Martin <tammymartin@sixnations.ca>; 'rvanstone@sixnations.ca' <rvanstone@sixnations.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Ontario N1M 1S6
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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Chief Mark B. Hill
markhill@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Chief Hill,

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

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The Study Process:

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Public Works Manager
Township of Southgate
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Email: jellis@southgate.ca

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Triton Engineering Services Limited
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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:17 PM
To: 'lonnybomberry@sixnations.ca'
Cc: Tammy Martin; Tayler Hill
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Six Nations (LBomberry cc TMartin & THill)- Notice of PIC No. 2 Dundalk WWT Capacity.pdf

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Kind regards,
Shari

Shari Page



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To: 'lonnybomberry@sixnations.ca' <lonnybomberry@sixnations.ca>
Cc: Tammy Martin <tammymartin@sixnations.ca>; 'Tayler Hill' <tayler.hill@sixnations.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Six Nations of the Grand River
1695 Chiefswood Road
P.O. Box 5000
OHSWEKEN, Ontario
N0A 1M0

ATTENTION: Mr. Lonny Bomberry
Lands and Resource Director
lonnybomberry@sixnations.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Mr. Bomberry,

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Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2

cc: Jim Ellis, Township of Southgate

Tammy Martin, Six Nations of the Grand River tammymartin@sixnations.ca

Tayler Hill, Six Nations of the Grand River tayler.hill@sixnations.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

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The Study Process:

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Township of Southgate
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Phone: 519-923-2100 x250
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From: Shari Page
Sent: Monday, March 6, 2023 1:18 PM
To: manager.ri@saugeenajibwaynation.ca; manager@saugeenajibwaynation.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: SON (P.Mansur)- Notice of PIC No. 2 Dundalk WWT Capacity.pdf

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Shari

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ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Saugeen Ojibway Nation (SON)
Environment Office
10129 Highway 6
GEORGIAN BLUFFS, Ontario
N0H 2T0

ATTENTION: Peggy Mansur,
Manager
manager@saugeenojibwaynation.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Mansur,

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Dustin C. Lyttle, P. Eng.
Project Manager

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cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

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RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

E.3.3 – Notice of PIC #2 (Agency & Public)

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:17 PM
To: eanotification.swregion@ontario.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Toronto - Class EA Notice of PIC No. 2 Dundalk WWT Capacity.pdf; MECP Form for Notice of PIC_No2.xlsx

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 4:03 PM
To: 'eanotification.swregion@ontario.ca' <eanotification.swregion@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Environment, Conservation and Parks
Environmental Assessment and Approvals Branch
135 St. Clair Avenue West, 1st Floor
TORONTO, Ontario
M4V 1P5

ATTENTION: Director, Class EAs and Declaration Section
EABDirector@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Director,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:13 PM
To: 'john.s.ritchie@ontario.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: MECP Owen Sound - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 12:04 PM
To: 'john.s.ritchie@ontario.ca' <john.s.ritchie@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Environment, Conservation and Parks
Owen Sound District Office
3rd Floor, 101 7th Street East
OWEN SOUND, Ontario
N4K 0A5

ATTENTION: John S. Ritchie
Manager
john.s.ritchie@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:14 PM
To: 'planning@grey.ca'
Cc: scott.taylor@grey.ca; Monica Scribner; liz.buckton@grey.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: GREY County, General Planning (ccs) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: 'scott.taylor@grey.ca' <scott.taylor@grey.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

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Shari

Shari Page



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Consulting Engineers

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Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

**Grey County
Planning and Development**
595 9th Avenue East
OWEN SOUND, Ontario
N4K 2E3

ATTENTION: **General Planning**
planning@grey.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir/Madam,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2

cc: Jim Ellis, Township of Southgate

Scott Taylor, Director of Planning, Grey County scott.taylor@grey.ca

Monica Scribner, Planning Department, Grey County monica.scribner@grey.ca

Liz Buckton, Senior Planner, Grey County Liz.Buckton@grey.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

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Public Information Centre (PIC) No. 2:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
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Phone: 519-843-3920 x222
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Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:13 PM
To: clorenz@grandriver.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: GRCA - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: 'clorenz@grandriver.ca' <clorenz@grandriver.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

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Kind regards,
Shari

Shari Page



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Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Grand River Conservation Authority
400 Clyde Road, P.O. Box 729
CAMBRIDGE, Ontario
N1R 5W6

ATTENTION: Chris Lorenz
Resource Planner
clorenz@grandriver.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023
Virtually (online)

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<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

The purpose of this *virtual* Public Information Centre is to update all stakeholders, approval agencies, and Indigenous communities on the progress of the project, present the preferred solutions, and invite you to provide your comments and feedback on a preferred alternative. From March 15th to March 24th, 2023, you will be able to view a display of background information and materials regarding the project on the Township’s website noted.

We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:14 PM
To: 'dholmes@melancthontownship.ca'
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Melancthon (D.Holmes) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Wednesday, November 2, 2022 12:05 PM
To: 'dholmes@melancthontownship.ca' <dholmes@melancthontownship.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, *Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will also appear in the next two (2) consecutive editions of *The Dundalk Herald*, November 2nd and November 9th, 2022.

Should you have any questions or require further clarification, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Township of Melancthon
157101 Highway 10
MELANCTHON, Ontario
L9V 2E6

ATTENTION: Denise B. Holmes
CAO/Clerk
dholmes@melancthontownship.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Holmes,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

The Problem Statement for this project is as follows:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



Public Information Centre (PIC) No. 2:

Consultation with the public, key stakeholders, Indigenous groups and regulatory agencies is an important component of the Class EA Process. The purpose of this PIC is to solicit feedback and input on the Study, as well as provide an overview of the Study process and discuss the evaluation of the preferred alternative. The Virtual Public Open House will provide background information inviting public input and will be open for comments from **March 15th to March 24th 2023**. The virtual consultation platform can be accessed online through the Township's website at <https://www.southgate.ca/en/municipal-services/planning-applications-public-notices.aspx>

How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:11 PM
To: critchie@lystek.com
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Lystek - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

Should you have any questions, concerns or require further clarification, please refer to the attached notice for the appropriate contacts and information.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Tuesday, November 1, 2022 11:47 AM
To: 'critchie@lystek.com' <critchie@lystek.com>
Subject: NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good morning,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice has been mailed and will also appear in the next two (2) consecutive editions of *The Dundalk Herald*, November 2nd and November 9th, 2022.

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Kind regards,
Shari

Shari Page



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105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

LYSTEK International Inc.
125 McGovern Drive
Unit #1
CAMBRIDGE, Ontario
N3H 4H7

ATTENTION: Mr. C. Ritchie
[critchie@lystek.com](mailto:critchier@lystek.com)

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

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Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

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The Study Process:

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Public Information Centre (PIC) No. 2:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:09 PM
To: jlabbe@cfcrozier.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Crozier & Associates - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Crozier & Associates
The Harbour Edge Building
40 Huron Street, Suite 301
COLLINGWOOD, Ontario
L9Y 4R3

ATTENTION: Justin L'Abbe
jlabbe@cfcrozier.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

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Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. This notice first issued publicly on *March 8th, 2023*.

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 1:11 PM
To: b.russell@dunwood.ca
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: RUSSELL, B&H - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

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Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Shari Page
Sent: Tuesday, November 1, 2022 11:46 AM
To: 'b.russell@dunwood.ca' <b.russell@dunwood.ca>
Subject: NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good morning,

On behalf of the Township of Southgate, please find attached, *'Notice of Virtual and Drop In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice has been mailed and will also appear in the next two (2) consecutive editions of *The Dundalk Herald*, November 2nd and November 9th, 2022.

Should you have any further questions or concerns, please refer to the attached notice for the appropriate contacts.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 ext.258 • Cell - (519) 616-0513 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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**TRITON
ENGINEERING
SERVICES
LIMITED**

Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

RUSSELL, Brent and Holly
752111 Ida Street,
P.O. Box 252
DUNDALK, Ontario
N0C 1B0
b.russell@dunwood.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Mr. and Mrs. Russell,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

<https://www.southgate.ca/en/municipal-services/planning-applications-public-notice.aspx>

Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Township of Southgate has commenced with a *Schedule C* Class Environmental Assessment (Class EA) under Ontario's Municipal Class Environmental Assessment (October 2000 as amended in 2007, 2011, 2015). This review has evaluated the existing WWTF, and alternative solutions to address the wastewater treatment capacity. Based on this, options concerning the reduction of inflow to the system, implementation of water conservation measures, expansion and optimization of the existing facility, and construction of a mechanical facility have been considered and evaluated, leading to the selection of a preferred collection and treatment strategy. A general location plan of the property is contained on the attached *Notice of Public Information Centre* for your reference.

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Purpose of Public Consultation

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

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The Study Process:

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Public Information Centre (PIC) No. 2:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

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E.3.4 - PIC #2 Comments & Responses

Shari Page

From: Shari Page
Sent: Monday, March 6, 2023 2:29 PM
To: Johnson, Ashley (IAO)
Subject: RE: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: Ministry of Indigenous Affairs (A.Johnson) - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Good afternoon Ashley,

Moving forward and as per Pauline's request, I have now included you on our *Official contact list* for this project. I just wanted to reach out and officially send you the attached letter and **Notice of PIC No. 2, Class EA, Schedule C, Dundalk Wastewater Treatment Capacity**.

Please let me know if you wish any further changes to your information. It would be much appreciated.

Kind regards,
Shari

Shari Page



Triton Engineering Services Limited
105 Queen Street West, Unit 14 Fergus, ON N1M 1S6
Tel - (519) 843-3920 Ext 220 • Fax - (519) 843-1943 • www.tritoneng.on.ca

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From: Wakegijig, Pauline (IAO) <Pauline.Wakegijig@ontario.ca>
Sent: Monday, March 6, 2023 1:47 PM
To: Shari Page <spage@tritoneng.on.ca>
Cc: Johnson, Ashley (IAO) <Ashley.Johnson@ontario.ca>
Subject: RE: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Hi Shari,

Can you kindly change the contact information for these notifications. If you could kindly remove my name and direct the emails to Ashley Johnson, Team Lead, Indigenous Relations and Programs Division, Ministry of Indigenous Affairs, that would be greatly appreciated. Ashley's email address is ashley.johnson@ontario.ca.

Thank you Shari,

Pauline.

Pauline Wakegijig | A/EA to the Director
Indigenous Relations and Ministry Partnerships Branch

Ministry of Indigenous Affairs
160 Bloor Street East, 4th Floor
Toronto, ON M7A 2E6
P: (416) 526-7202

Please Note: As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Shari Page <spage@tritoneng.on.ca>
Sent: March 6, 2023 1:19 PM
To: Wakegijig, Pauline (IAO) <Pauline.Wakegijig@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon,

On behalf of the Township of Southgate, please find attached, **Notice of Virtual Public Information Centre (PIC) No. 2, Class Environmental Assessment, Schedule C** for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

This Notice will publicly appear in the next two (2) consecutive editions of *The Dundalk Herald*, March 8th and March 15th, 2023.

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Kind regards,
Shari

Shari Page



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From: Shari Page
Sent: Thursday, November 3, 2022 3:44 PM
To: 'pauline.wakegijig@ontario.ca' <pauline.wakegijig@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

Good afternoon,

On behalf of the Township of Southgate, please find attached, '*Notice of Virtual and Drop-In Public Information Centre, Class Environmental Assessment, Schedule C* for the *Township of Southgate, Dundalk Wastewater Treatment Capacity*.

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Kind regards,
Shari

Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 6, 2023

Ministry of Indigenous Affairs
160 Bloor Street East, 9th Floor
TORONTO, Ontario
M7A 2E6

ATTENTION: Ashley Johnson
Team Lead
Indigenous Relations and Programs Division
ashley.johnson@ontario.ca

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Ms. Johnson,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

March 15th – 24th, 2023

Virtually (online)

Township of Southgate's website

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Project Background

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified as part of the evaluation process. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

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We look forward to receiving your comments and should you have any questions regarding this public consultation, please contact the undersigned. In your response, please confirm your preferred method for receiving future correspondence as it relates to this project.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2
cc: Jim Ellis, Township of Southgate



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

The Township of Southgate has identified treatment capacity limitations with its wastewater treatment facility (WWTF) located in the community of Dundalk. In order to increase capacity and improve performance, the Township is pursuing an expansion to the WWTF utilizing the preferred alternative strategy identified earlier. The proposed works will provide a reliable, cost-effective sewage collection and treatment strategy, which will allow for continued growth and development in the community.

The Study Process:

The Township initiated a Class Environmental Assessment (Class EA) in order to evaluate alternative solutions to address the wastewater treatment capacity concerns and to establish a preferred alternative. The project is being planned under Schedule C of the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015).



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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

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Shari Page

From: Liz Buckton <Liz.Buckton@grey.ca>
Sent: Monday, April 3, 2023 11:41 AM
To: Shari Page
Cc: Dustin Lyttle
Subject: Copy of Dundalk PIC#2 Materials?

Good morning, I hope this finds you well!

We received notice of the March PIC (#2) for the Dundalk Class EA Process, thank you.

Alas, I've missed the timeframe to download the materials from the municipal website and was wondering if you'd mind please forwarding along any presentation or summary document relating to that PIC? I don't anticipate we'd have further comments at this time beyond what was provided in response to the PIC#1 notice, but I'd love to keep tabs on the process overall.

Many thanks!

Have a lovely afternoon,
Liz

Liz Buckton

Senior Planner

Grey County

595 9th Avenue East

Owen Sound, ON N4K 3E3

Phone: +1 519-372-0219 ext. 1298

Fax: +1 519-376-7970

Liz.Buckton@grey.ca

<https://www.grey.ca>

<https://www.visitgrey.ca>

<https://greyroots.com>



Shari Page

From: Ag Info <ag.info.omafra@ontario.ca>
Sent: Wednesday, March 8, 2023 3:07 PM
To: Shari Page
Subject: FW: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY
Attachments: OMAFRA - Notice of PIC No. 2 Dundalk WWT Capacity.pdf

Hello Shari,

Thank you for contacting the Ministry of Agriculture, Food and Rural Affairs Agricultural Information Contact Centre. We appreciate this opportunity to respond to your enquiry.

We have forwarded your email to OMAFRA's Rural Planner David Marriott.

The Agricultural Information Contact Centre (AICC) takes pride in responding to farm, agri-business and rural business inquiries in a timely fashion. We want to provide you with the best service possible, and in order to help us accomplish this, we would ask that you please take 1-2 minutes to complete our [customer satisfaction survey](#).

Thank you again for your inquiry and please do not hesitate to contact us if you have any further questions.

Regards,

Carol McLellan | Information Management Advisor
Ministry of Agriculture, Food and Rural Affairs
Agricultural Information Contact Centre (AICC)
1 Stone Road West, 4NE | Guelph | ON | N1G 4Y2
Toll Free: 1-877-424-1300 | TTY: 1-855-696-2811
E-Mail: ag.info.omafra@ontario.ca
Website: www.ontario.ca/OMAFRA

Please Note: As part of providing [accessible customer service](#), please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Shari Page <spage@tritoneng.on.ca>
Sent: Monday, March 06, 2023 1:15 PM
To: Ag Info <ag.info.omafra@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PIC NO. 2 - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

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Kind regards,
Shari

Shari Page



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From: Shari Page
Sent: Wednesday, November 2, 2022 12:06 PM
To: 'ag.info.omafra@ontario.ca' <ag.info.omafra@ontario.ca>
Subject: TOWNSHIP OF SOUTHGATE, NOTICE OF PUBLIC INFORMATION CENTRE - Class EA, Schedule C, DUNDALK WASTEWATER TREATMENT CAPACITY

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Shari Page



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Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • HARRISTON

March 3, 2023

Ministry of Agriculture, Food and Rural Affairs
(OMAFRA)
1 Stone Road West 4NE
GUELPH, Ontario
N1G 4Y2

ATTENTION: David Marriott,
OMAFRA Rural Planner (Western Ontario)

RE: Township of Southgate
Dundalk Wastewater Treatment Facility
Class Environmental Assessment *Schedule C*
Notice of Public Information Centre (PIC) No. 2
Our File: W4609A

Dear Sir,

You are invited to the second *Public Information Centre (PIC)* that will be held virtually for the above noted project to provide an update regarding the Dundalk Wastewater Treatment Facility, Class Environmental Assessment (Class EA). Formal notice of this information centre has been included. Details for the invite are as follows:

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Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.
Project Manager

Encl. Notice of Public Information Centre (PIC) No. 2

cc: Jim Ellis, Township of Southgate

Marnie Webb, Team Lead (A) Agricultural Information Centre

ag.info.omafra@ontario.ca



Township of Southgate
Class Environmental Assessment
Dundalk Wastewater Treatment Capacity
Notice of Virtual Public Information Centre No. 2

Project Background:

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How to Respond:

If you have any questions, comments, require further information, and/or would like to be added to the project contact list, please contact both of the following:

Jim Ellis, CRS S, Dipl. M.M
Public Works Manager
Township of Southgate
185667 Grey County Road 9
RR#1 Dundalk, ON
NOC 1B0
Phone: 519-923-2100 x250
Fax: 519-923-9262
Email: jellis@southgate.ca

Dustin Lyttle, P.Eng
Project Manager
Triton Engineering Services Limited
105 Queen Street, Unit 14
Fergus, ON
N1M 1S6
Phone: 519-843-3920 x222
Fax: 519-843-1943
Email: dlyttle@tritoneng.on.ca

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E.3.5 – PIC #2 Presentation Materials

Dundalk Wastewater Treatment Capacity

Schedule "C" Municipal Class
Environmental Assessment

Public Information Centre No.2
March 15th – 24th 2023



Welcome

Thank you for your interest in this project. Your input, questions and/or comments on the material presented in this Virtual PIC are encouraged. This presentation will be available from **March 15th – 24th 2023.**

Upon your review of this material, **please submit your input, questions and/or comments on or before Monday, April 24th 2023** to jellis@southgate.ca or dlyttle@tritoneng.on.ca. A member of the Project Team will respond to any questions raised.

Comments and information received will be collected under the Ontario Environmental Assessment Act and in accordance with the Freedom of Information and Protection of Privacy Act and, with the exception of personal information, may be included in the project documentation and become part of the public record.



Contacts

Project Team members are available to assist with website navigation
and submission of comments by mail / phone / email to:

Dustin Lyttle, P.Eng

Project Manager (Consultant)

Triton Engineering Services Limited

105 Queen Street W, Unit 14

Fergus, ON, N1M 1S6

Phone: 519-843-3920 x222

Fax: 519-843-1943

Email: dlyttle@tritoneng.on.ca

Jim Ellis, CRS-S

Public Works Manager

Township of Southgate

185667 Grey County Road

RR#1 Dundalk, ON, N0C 1B0

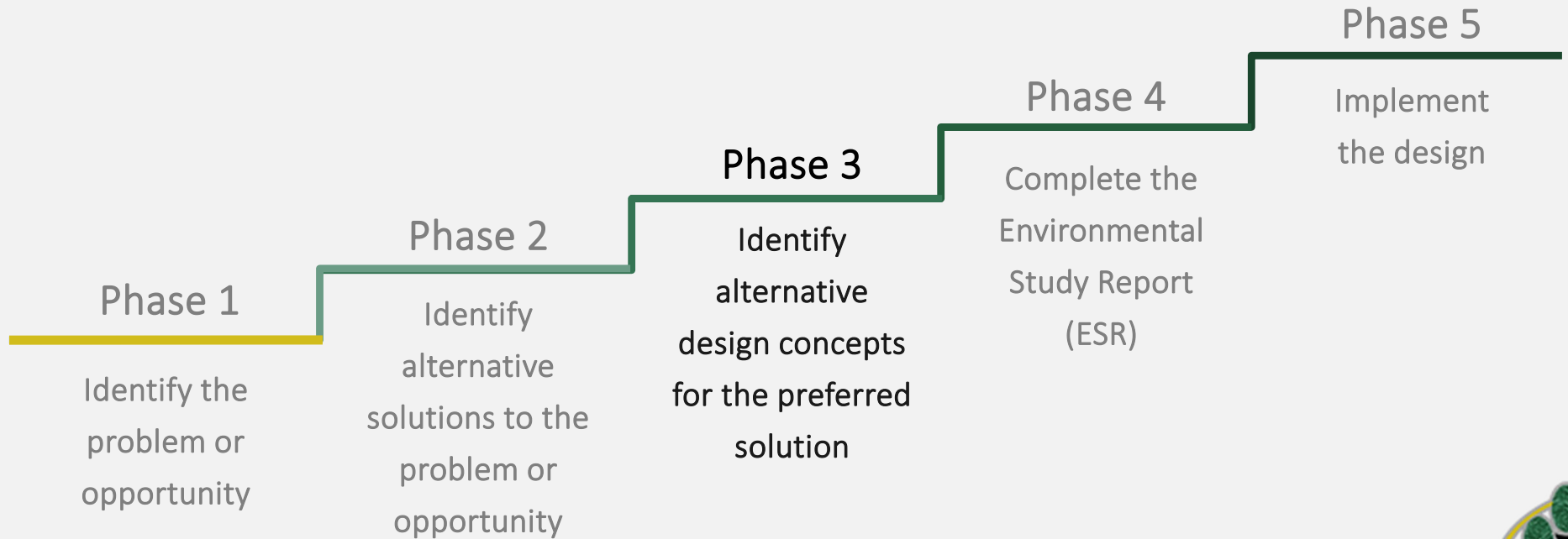
Phone: 519-923-2110 x250

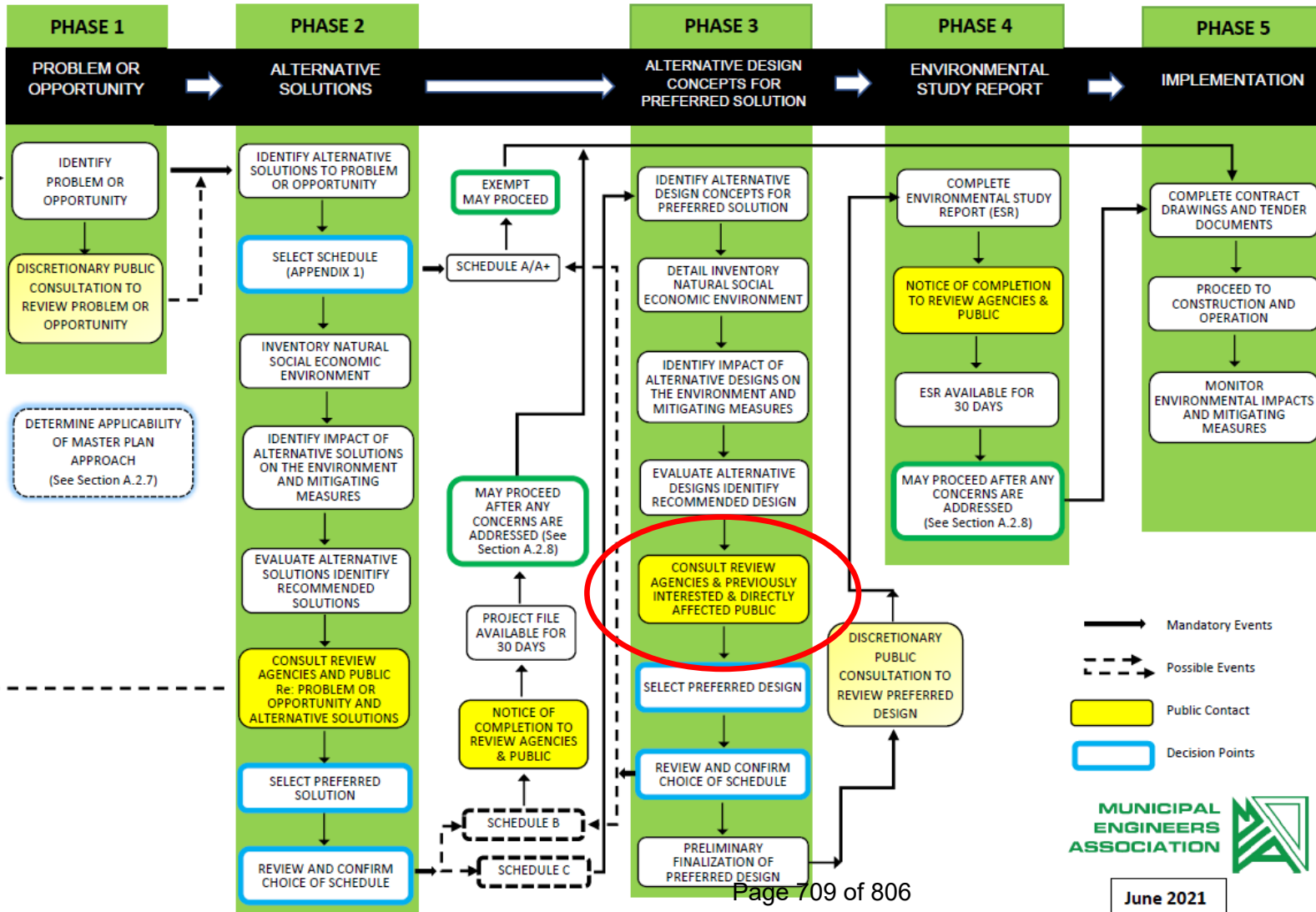
Fax: 519-923-9262

Email: jellis@southgate.ca



Municipal Class EA Planning Design Process





MCEA planning & Design Process



June 2021

Project Background

The Township of Southgate owns and operates the **Dundalk Wastewater Treatment Facility** located at 752051 Ida Street, south of Dundalk.

The facility generally consists of four (4) wastewater lagoons followed by a fifth aeration cell and filtration. The facility discharges to the Foley Drain and ultimately to the Grand River. **Proposed growth in Dundalk** will result in allocation of the remaining reserve capacity of the facility to future development.

As a result, further commitment toward growth and infilling cannot be realized until additional wastewater treatment capacity is made available. **The goal of this Project is to establish additional treatment capacity.**

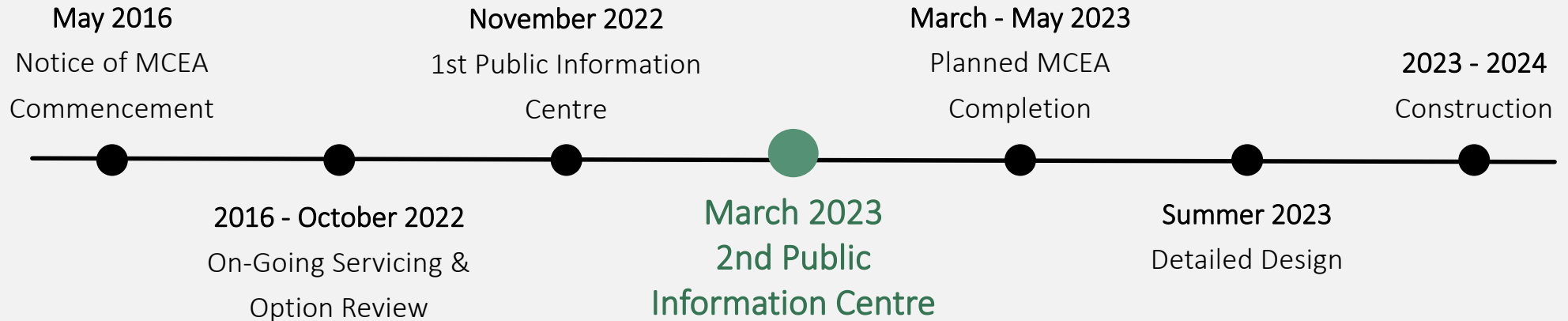


Problem (Opportunity) Statement

Based on the project background, the following problem statement was identified as part of Phase 1 of the Class EA process:

“The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the Dundalk wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity.”

Project Timeline

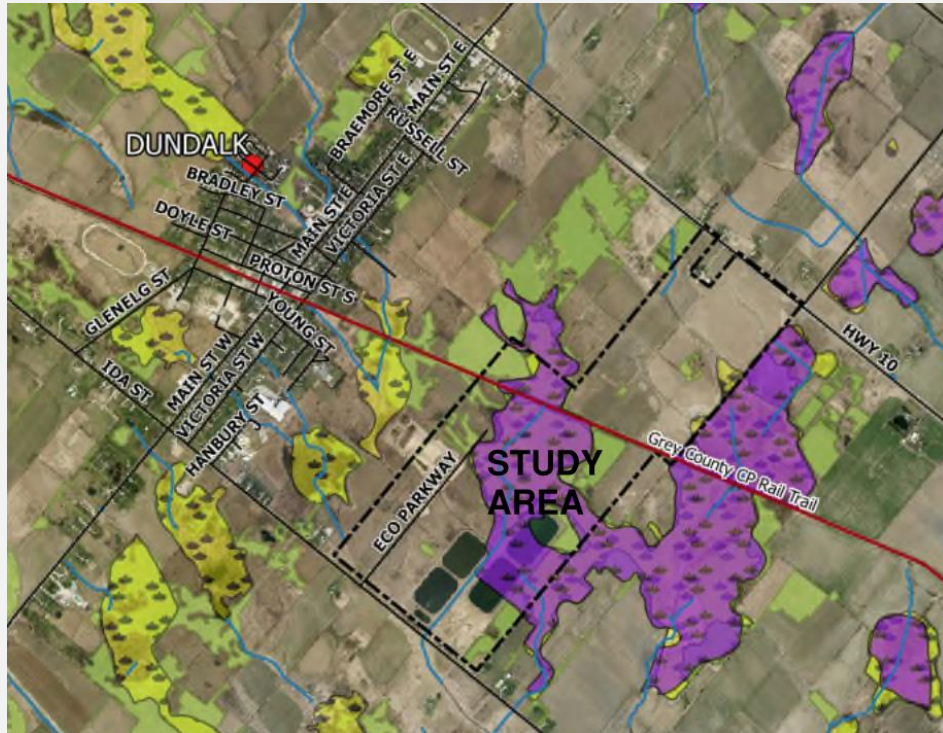


Studies Completed

- Environmental Impact Study - 2017
- Aquatic Habitat Assessment - 2018
- Infiltration & Inflow Study - October 2020
- Assimilative Capacity Study - 2021



Environmental Impact Study



In Spring of 2016 an Environmental Impact Study was initiated that focused on characterizing the existing natural heritage features within the study area, including mapping of significant natural features (wetlands, breeding grounds etc.).

The study of existing conditions indicated that there are significant species, features, and ecological functions within the study area that will **require mitigation efforts to preserve**. Findings from this study will be used to inform the detailed design and

Aquatic Habitat Assessment



In Fall of 2017 an Aquatic Habitat Assessment was initiated that focused on characterizing the existing environmental features in different tributaries within the study area, including **surveying of fish, inspection of habitats, and review of Species At Risk (SAR).**

The study of existing conditions indicated that there are viable fish communities and habitats as well as extensive vegetation within the study area. **Various management methods will be required** to mitigate potential impacts to the vegetation and aquatic species.

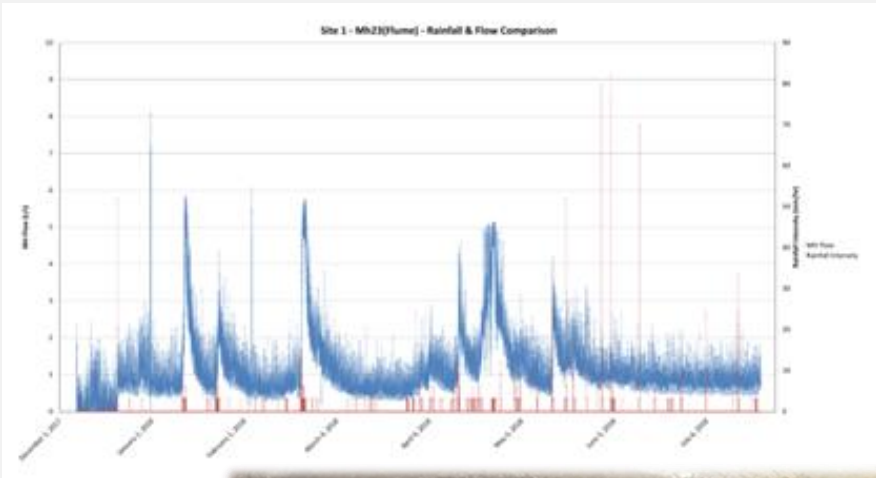
Inflow & Infiltration Study

Sanitary flow rates measured at the Dundalk wastewater treatment facility (WWTF) over several years has indicated that the collection system has significant levels of infiltration and inflow (I/I) when compared to water usage and other similar municipal collection systems. In the late fall of 2020 the Township undertook a significant flow monitoring program in order to better identify the amount and source of the I/I.

The study identified areas of concern recommending these be investigated further to ensure foundation drains are not connected to the sanitary sewer. To prevent this in the future new homes are to include the installation of storm sewer services and the sump pumps are connected to this service as per the Township Municipal Servicing Standards.



Inflow & Infiltration Study



The study further recommended that during the reconstruction of streets that storm sewers are installed for the entire length of the road to accommodate storm sewer services to the property lines of existing homes. Additionally, it recommended that drainage features (i.e., concrete barrier curb and gutter, catchbasins) within the roads be provided and maintained.

The Township has been, and intends to continue implementing these recommendations.

Assimilative Capacity Study



In 2017 an Assimilative Capacity Study was initiated that **focused on the current and future effluent characteristics of the discharge** entering the James Foley Drain, a tributary of the Grand River.

The study indicated that the **high-quality effluent discharged from the existing Facility improves conditions** downstream in the Foley Drain.

The additional flow resulting from the **proposed increased capacity** has **potential to benefit all aquatic life** living in the downstream reaches of the Grand River.

Effluent criteria was established as part of this study to ensure that potential environmental impacts are mitigated.

Evaluation Criteria

Technical



- Operation and Maintenance Requirements
- Ability to Service Design Growth
- Existing Facility/Site
- Proven Treatment Capability

Economic



- Local Economy
- Capital Costs
- Operational & Maintenance Costs
- Funding Sources

Natural



- Wetlands and Water Courses
- Ground Water Quality & Source Water Protection
- Sensitive Species
- Use of Area by Wildlife
- Air Quality & Noise

Social & Cultural



- Temporary Construction
- Neighbouring Land Use
- Indigenous Communities
- Visual Amenity

Alternative Solutions

- Alternative 1: Do nothing
- Alternative 2: Reduce infiltration and inflow into sanitary sewers
- Alternative 3: Implement water conservation measures
- Alternative 4: Expand and optimize the existing treatment facility
- Alternative 5: Construct a mechanical plant
- **Alternative 6: Combination of Alternatives 2, 3 and 4**

Preferred Alternative

Alternative 6: Combination of Alternatives 2, 3 and 4

- Addresses the problem statement
- Allows to maximize positive outcomes

Based on the evaluation of the alternatives, Alternative 6 is the preferred solution which is a combination of Alternatives 2, 3 and 4. This Alternative will **reduce inflow/infiltration** to the collection system, **implement water conservation** measures thereby reducing sewage flows, and provide improvements/upgrades to the existing Facility to **increase treatment capacity and consistency**.

Alternative 2

Reduce Infiltration and Inflow into Sanitary Sewer Collection System

- Does not address the problem statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing Inflow and Infiltration may allow for some continued development, this will inevitably result in a Moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, resulting in increased risk to Natural Environment.

Alternative 3

Implement Water Conservation Measures

- Does not address the problem statement.
- Existing operational constraints at the Facility are not addressed resulting in a negative outcome for the Technical Environment.
- No change for the Social and Cultural Environment.
- Although reducing water usage will reduce sewage flows somewhat, which may allow for some continued development, this will inevitably result in a moratorium on Development in the near future resulting in a highly negative outcome for the Economic Environment.
- Effluent quality may begin to deteriorate with increased flows, resulting in increased risk to Natural Environment.

Alternative 4

Expand and Optimize the Existing Treatment Facility

- Addresses the problem statement.
- Existing operational constraints at the Facility are addressed, while maintaining operator intervention requirements resulting in a highly positive outcome for the Technical Environment.
- Minimal changes to the Social and Cultural Environment.
- Will allow continued Development for the current planned growth, however at an estimated cost between \$4M and \$6M results in a net positive outcome for the Economic Environment.
- Effluent quality will improve resulting in a positive outcome for the Natural Environment.

Current Status

In order to determine how the existing Facility could be improved, optimized, and expanded, the Township released a Request For Proposal (RFP) to the wastewater treatment industry.

The results of this RFP process were presented to Council, resulting in the selection of preferred technology/treatment strategy which included MBBR, upgraded aeration and improved filtration.

The intent is to move forward with the design of the potential improvements to the existing Facility.



Preferred Solution Treatment Process

Step 1: Improved Aeration and Algae Mitigation at Existing Cell 5.

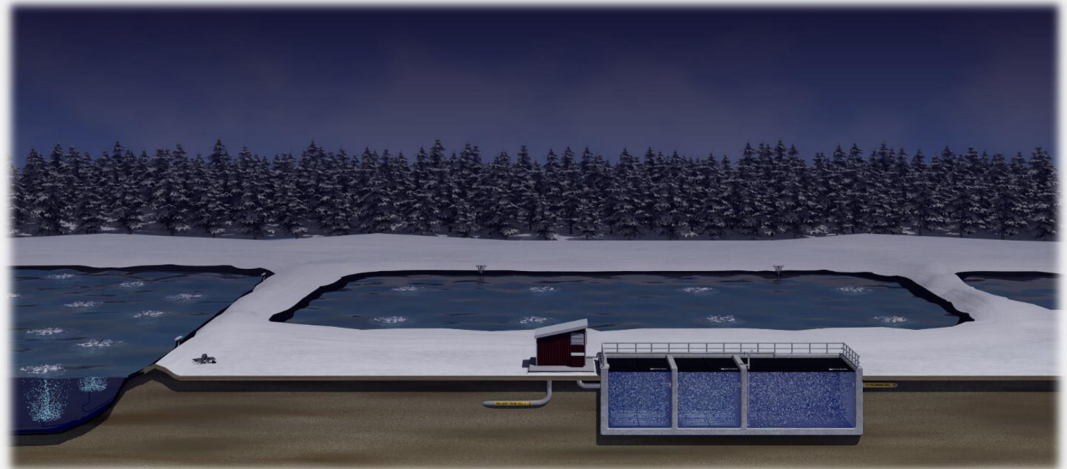
- Supplement the existing aeration equipment within the post aeration cell (Cell 5)
- Injection of Algaecide



Preferred Solution Treatment Process

Step 2: Addition of Moving Bed Biofilm Reactor (MBBR)

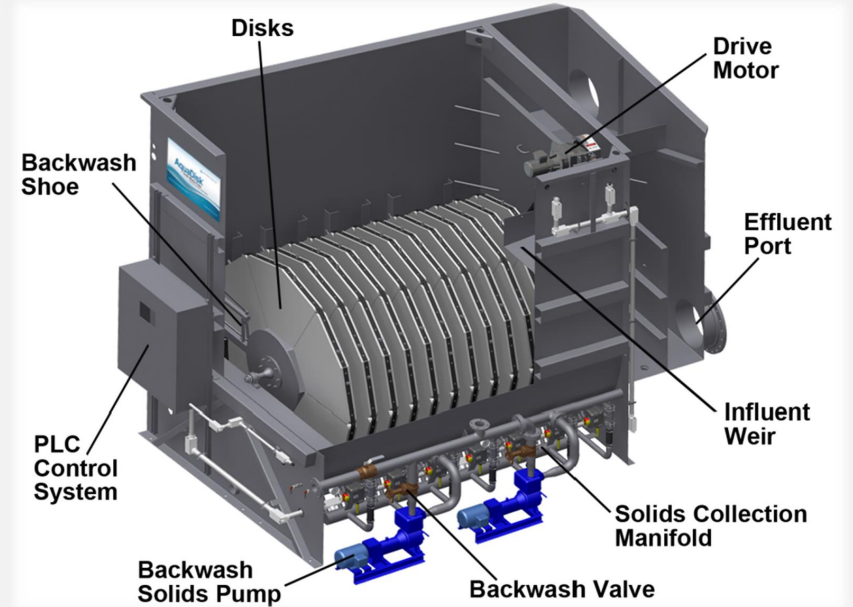
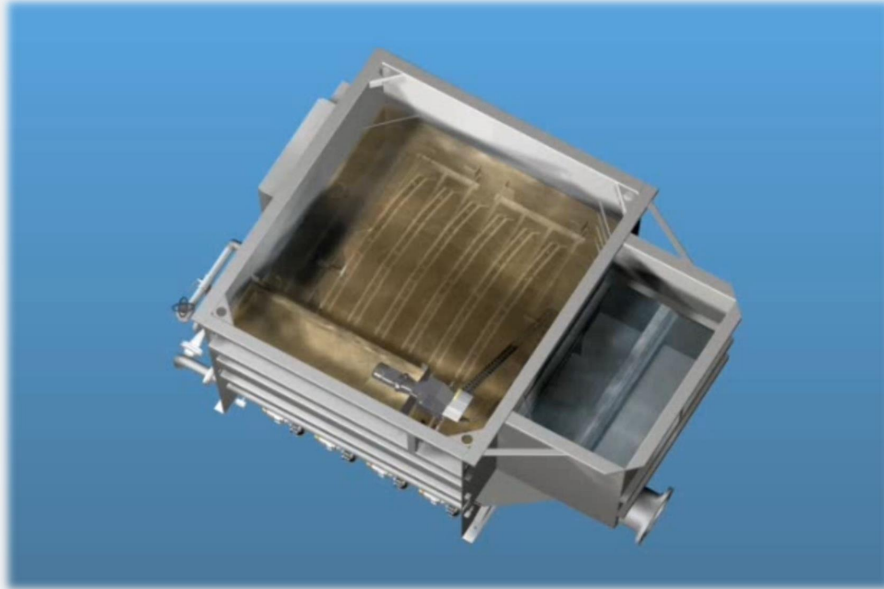
- Addition of an ammonia polishing reactor (MBBR) following Cell 5, before Filter Building



Preferred Solution Treatment Process

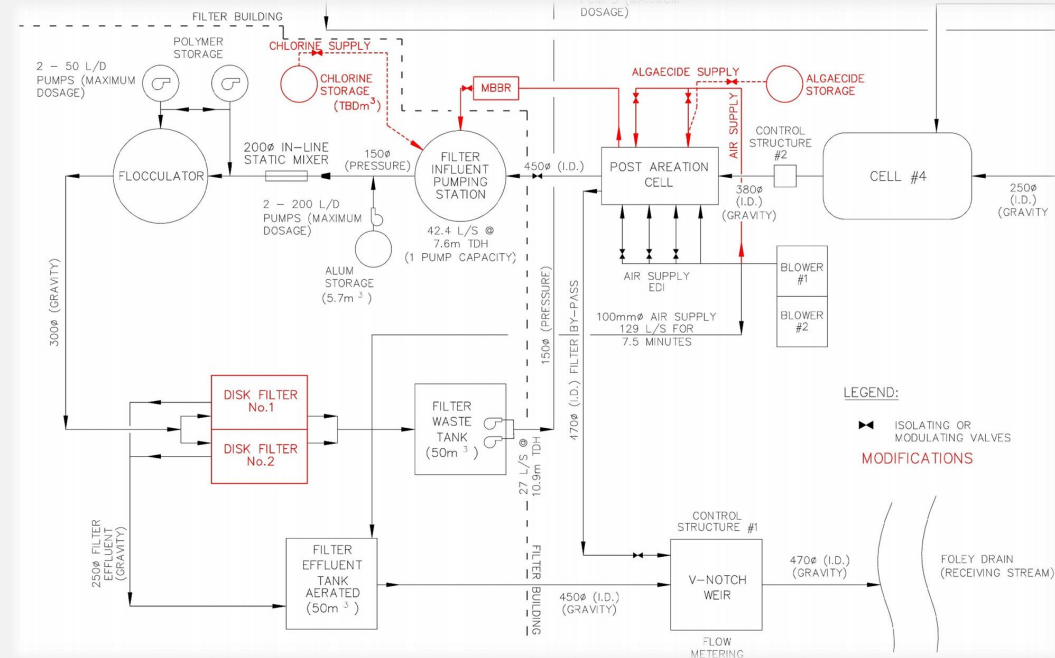
Step 3: Replacement of Existing Tertiary Static Media Filter

- Cloth Media Disk Filter proposed
- Low Level Phosphorus Removal



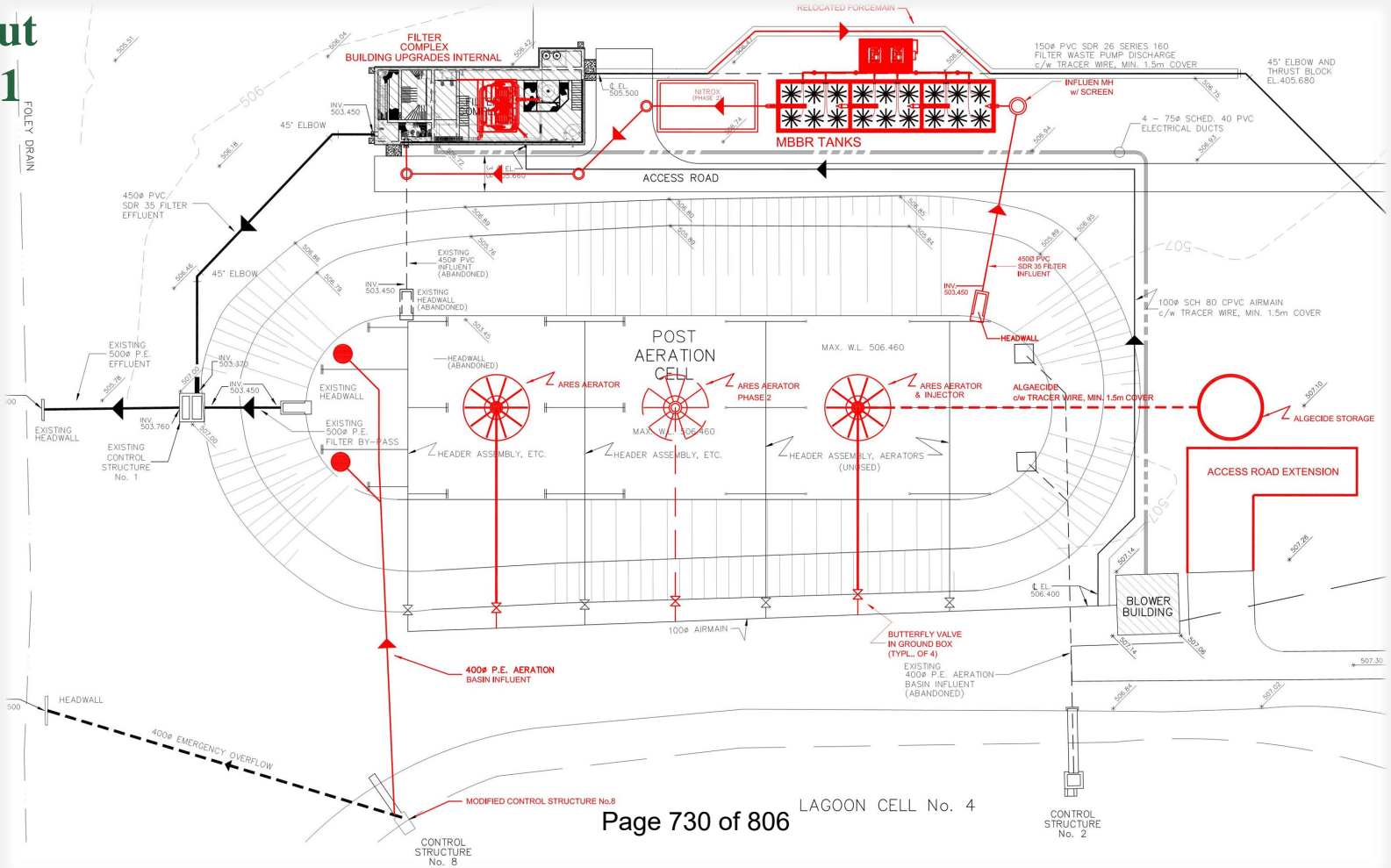
Schematic of Preferred Solutions: Process Flow Schematics

- Treatment process facilities can be accommodated within the existing WWTF site.
- Two site layout schematic have been considered which are presented as Site Plan Options 1 & 2.
- Either Option will provide similar/adequate treatment.
- Selection of Option for final configuration will be based on efficiencies and costs identified during final design phase.



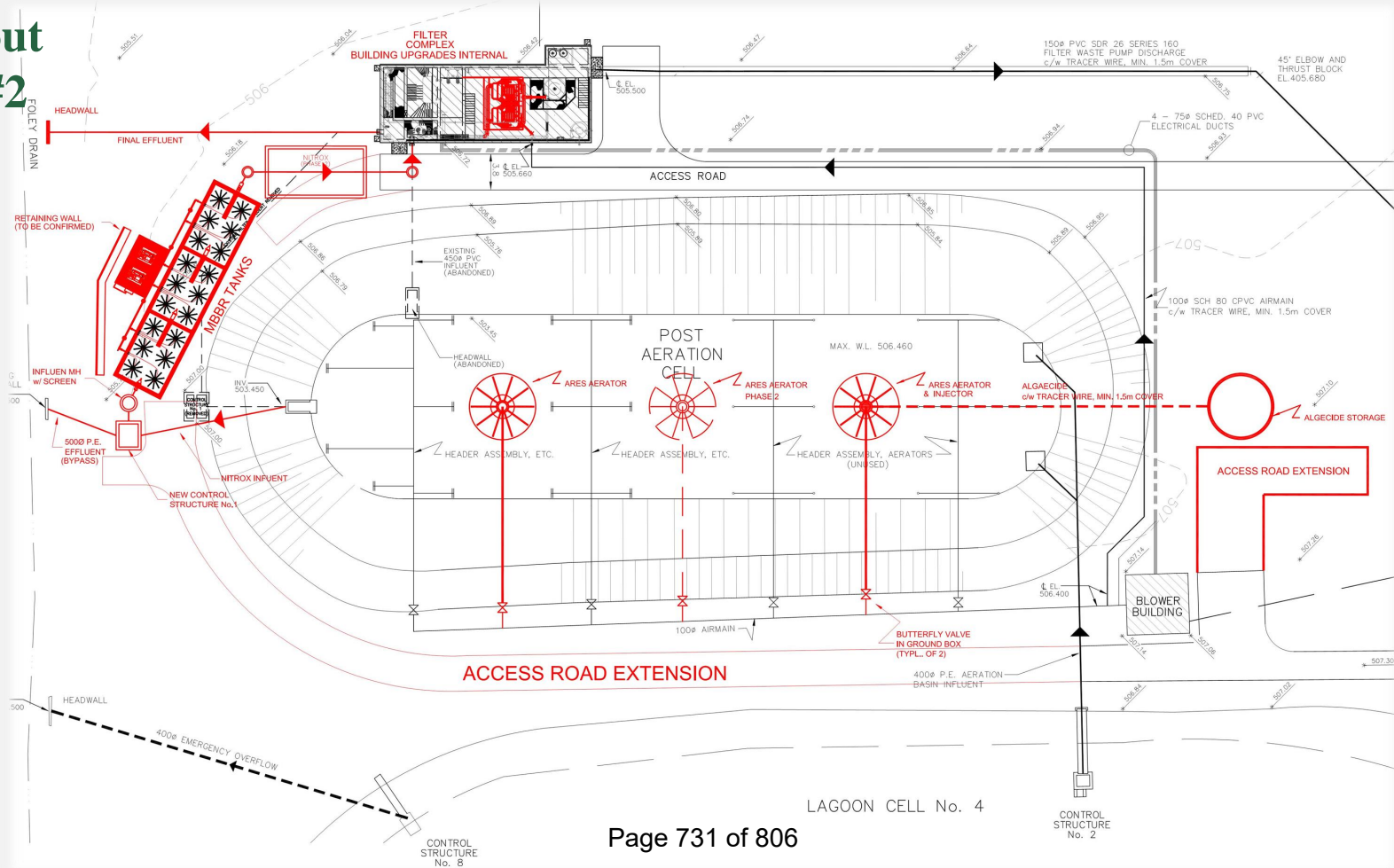
Schematic of Preferred Solution

Site Layout Option #1



Schematic of Preferred Solution

Site Layout Option #2



Thank You!

We welcome your comments and questions.

Please provide your comments and questions by **April 24th 2023.**



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Appendix F - Infiltration and Inflow Monitoring Program



Infiltration and Flow Monitoring Program

October 2020



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APPENDICES

(Refer to separate document)

FIGURES

YEARLY GRAPH DATA

RESERVE CAPACITY CALCULATIONS

FLOW MONITORING INFORMATION

RAIN GAUGE INFORMATION

1.0 Introduction

Sanitary flow rates measured at the Dundalk wastewater treatment facility (WWTF) over several years has indicated that the collection system has significant levels of infiltration and inflow (I/I) when compared to water usage and other similar municipal collection systems. In order to better identify the amount and source of the I/I, the Township undertook a significant flow monitoring program. This report is intended to summarize the findings of this monitoring program and identify areas of potential I/I and the next steps.

2.0 Flow Monitoring Program

Flow Monitoring Methods

Flow monitoring was completed by AMG Environmental Inc. from December 2017 until August 2018 by installing the Flow SIREN loggers combined with dual area-velocity (AV) sensors with pressure depth flow monitors in selected manholes within the Dundalk Sanitary Sewer System (System). The flow monitoring period was then extended within the Flato West Development from December 2018 to April 2019.

Flow Monitoring Locations

The flow monitor installation locations were specifically selected to discretize the system to identify/isolate areas of concern referred to as the “contributing areas”. These locations are indicated in Figure 2.1. The arrowheads indicate which inlet or outlet from the maintenance hole the flow was being monitored. The length and diameter of upstream pipes, service area, cumulative area (in terms of Hectares) and estimated service population (based on Reserve Capacity Calculations people per unit) is indicated in Table 2.1. The service area refers to the area that is upstream of the monitoring location until the next monitor, or end of the system. The cumulative area refers to the total area contributing to the monitoring location. The estimated cumulative population serviced refers to the total population estimated in the cumulative area.

Table 2.1: MH Tributary Area Details

MH	Length of Upstream Sewer (km)	Total Diameter x Length (Cm (ø) x Km)	Cumulative Area (Ha)	Estimated Population Serviced ¹
MH-10A	13.8	340.8	151.9	1,838
MH-15	1.6	285.6	22.5	117
MH-16	8.9	204.1	93.7	1,474
MH-17	4.2	202.4	32.4	745
MH-19	2.0	115.8	16.4	248
MH-22	1.2	53.9	24.7	140
MH-23	0.9	18.6	10.4	219
MH-34	0.6	11.8	9.9	71
MH-208	0.5	12.5	6.8	0
MH-211	1.2	41.6	16.9	0

¹ Cumulative

Expected Infiltration and Inflow

To determine the amount of the I/I in the contributing areas a typical base flow comparison needs to be developed. Historic documents produced by the Ministry of the Environment, Conservation and Parks (MECP) recommends the extraneous (I/I) inflow rate be a maximum of 1,400 L/cm/km/day. That is, 1,400 liters of infiltration for every centimeter of pipe diameter per kilometer of pipe per day.

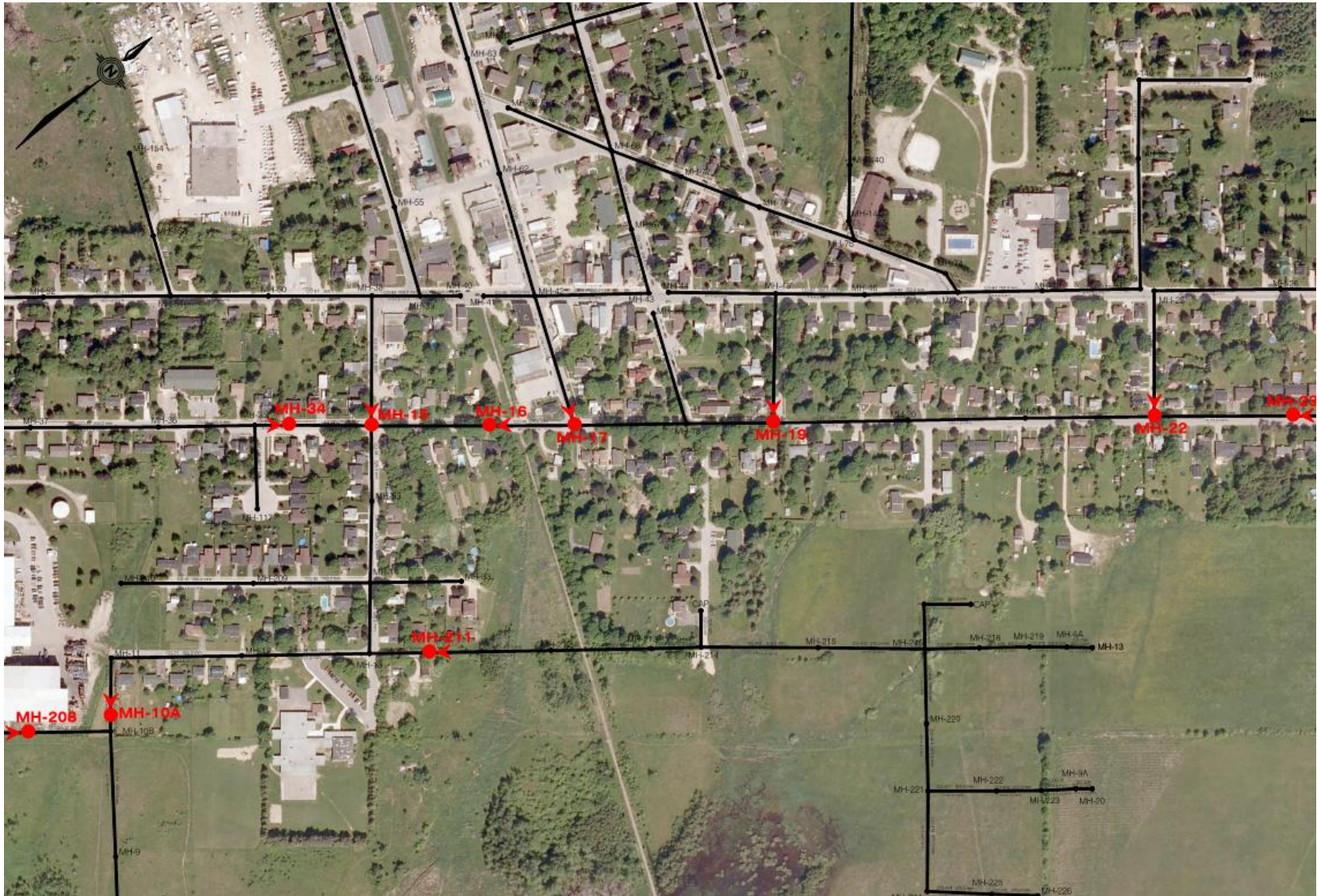
It should be noted that although these guidelines are provided by the MECP, these are based on historic monitoring data, and an ideal system would be subject to less infiltration.

The following table summarizes the total pipe detail inventory and expected I/I for each contributing area based on MECP guidelines.

Table 2.2: Expected I/I

MH	Length of Upstream Sewer (km)	Cm (∅) x Km	Expected I/I (m ³ /day)	Expected I/I (L/s)
MH-10A	13.8	340.8	477.17	5.52
MH-15	1.6	34.9	48.90	0.57
MH-16	8.9	204.1	285.69	3.31
MH-17	3.6	76.0	106.46	1.23
MH-19	2.4	55.1	77.21	0.89
MH-22	1.3	32.7	45.78	0.53
MH-23	0.9	18.6	26.03	0.30
MH-34	0.6	11.8	16.49	0.19
MH-208	0.5	12.5	17.55	0.20
MH-211	1.2	41.6	58.20	0.67

Figure 2.1: Flow Monitoring Locations



3.0 Rain Monitoring Program

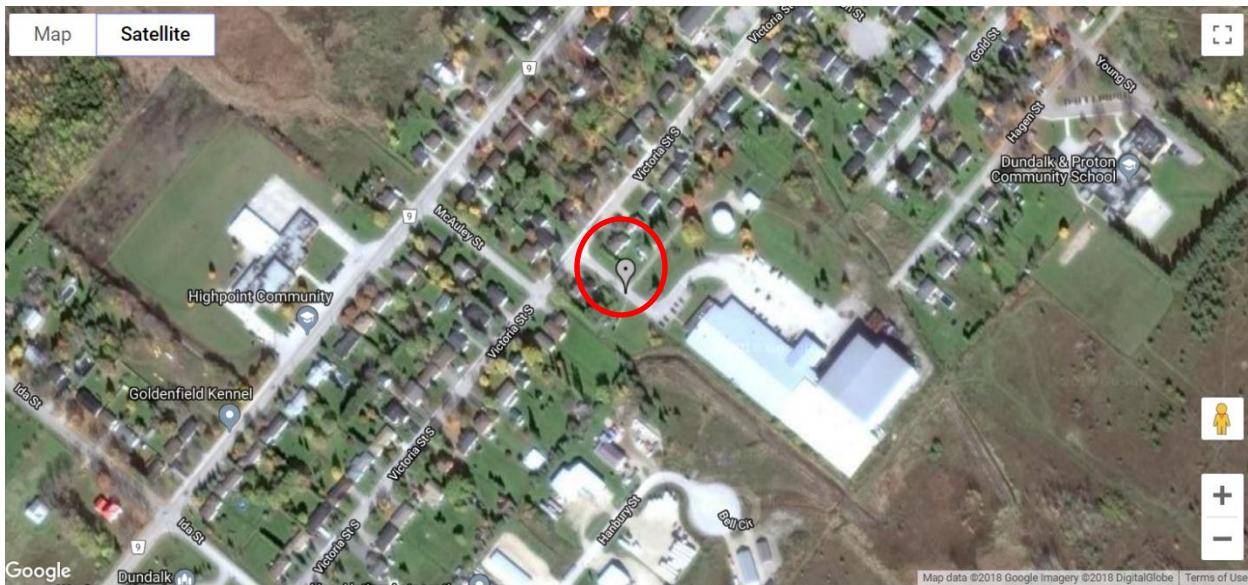
Rainfall Monitoring Methods

Rainfall monitoring was completed by AMG Environmental Inc. from December 2017 until August 2018 by installing one RainSIREN logger with dual 8” RainWise tipping buckets.

Rain Gauge Locations:

The rain gauge was installed in the village of Dundalk, near Well D3. Refer to Figure 3.1 below.

Figure 3.1: Rain Gauge Location



4.0 Sanitary Sewer Model

Model Parameters

The SewerCAD model accounts for extraneous flows using the “Pipe-Rise-Length” calculation method as recommended by the MECP Guidelines. For this reason, residential sanitary loading to the system is modelled using the water usage records as calculated in the Reserve Capacity Calculations.

Definitions of Terms:

- **Loading Unit:** The method used to apply the expected sanitary sewer loading from a particular user. Typically, this is either done by, per person or per unit.
- **Average Daily Flow Rate (Average DFR):** The modelled average daily flow rate.
- **Modelled Peak Flow Rate (PFR):** The modelled maximum flow rate that is expected by multiplying the Average DFR by a peaking factor as described in Table 4.1.

- **Modelled Extraneous Flow:** This is the modelled infiltration and inflow attributed to a sanitary sewer. This is calculated either by the size of the service area or length and diameter of the sanitary sewer.

Table 4.1: Modelled Flow Rates by User

User	Loading Unit	Average DFR (m ³ /day)	Peaking Factor
Existing Residential	Per Unit	1.15	Harman
New Residential	Per Unit	1.15	Harman

The peaking factor for the residential units is calculated using the Harman Formula shown below, which produces a peaking factor based on the population tributary to the area, limited to a maximum of value of 4.

$$PF = 1 + \frac{14}{4 + p^{0.5}}$$

Where:

PF =the Harman Peaking Factor

p = populations (in terms of thousands)

The extraneous flow on a system is modelled using the MECP standard Pipe-Rise-Length calculation shown below.

1,400L/cm/km/day of sewer pipe.

Table 4.2: Modelled Flow Rates at Monitoring Locations

MH	Modelled Sanitary ADF (L/s)	Modelled Extraneous Flow (L/s)
MH-10A	40.87	4.96
MH-15	3.58	0.55
MH-16	32.76	2.77
MH-17	16.73	0.97
MH-19	7.27	0.71
MH-22	3.25	0.38
MH-23	4.8	0.3
MH-34	1.56	0.2
MH-208	0.56	0.2
MH-211	1.88	0.74

5.0 Monitoring Results

Definition of Terms

Infiltration: Water other than sanitary wastewater that enters a sewer system from the ground through defective pipes, pipe joints, connections or maintenance holes. **Infiltration** does not include **inflow**.

Inflow: Water other than sanitary wastewater that enters a sewer from non-approved sources such as downspouts, foundation drains, yard drains, area drains, maintenance hole covers, cross connections between storm and sanitary sewers, and catch basins. **Inflow** does not include **infiltration** or **sanitary flow**.

Data Anomaly: A data point or series of data points that appear to be valid when compared to data points within the same time frame, however are above or below the expected levels.

Flow Rate Error: A data point that appears to be an error as it is a single data point that is extremely outside of the expected levels.

Raw Flow Monitoring & Rain Gauge Data Review

Table 5.1: Measured Flow Rate Anomalies/Errors

Error	MH	Flow Rate Error	Flow Rate Anomaly	Date of Issue	Data Treatment
F1	MH 23	N/A	Localized Zero Flow Rate Data	2017-12-01 to 2017-12-20	Omit from Analysis
F2	MH22	N/A	2.93	2018-05-16, 7:10am 2018-05-22, 4:20am	Omit from Analysis
F3	MH19	0	N/A	2018-03-16 3:20am to 2018-03-21 7:45am	Omit from Analysis
F4	MH19	N/A	Localized High Flow Rate Data	2018-06-18 to 2018-07-23	Indicative of Inflow
F5	MH208	N/A	Significant Flow Increase	2018-01-06 Onward	Assume Use Change
F6	MH23	N/A	Significant Flow Increase	2018-04-20 Onward	Assume Use Change

Table 5.2: Concern Rain Gauge Data

Rain Gauge Error (mm/hr)	Date of Rain Gauge Error	Data Treatment
51.82	2017-12-20, 8:55am	Omit from Analysis
70.1	2018-06-13, 1:40pm	Omit from Analysis

Error Assessment

F1: MH23 experienced a series of flow rates near or at zero from December 1, 2017 to December 20, 2017. As the tributary area to MH23 is large, the flow rate is never expected to be at zero. It is expected that this error was a result of technical malfunction and the data is omitted from flow calculations and analysis.

F2: Flow through the monitor at MH22 remains continuous at 2.93 L/s for nearly 6 days. It is expected that over this time period there would be variation in flow. Therefore, this data is a result of technical malfunction and is omitted from flow calculations and analysis.

F3: MH19 experiences a drop in the flow rate from 0.79L/s to zero for over 5 days and then proceeds to have a flow of 0.66L/s. It is expected that this error was a result of technical malfunction and the data is omitted from flow calculations and analysis.

F4: MH19 experiences localized high flow rates (upwards of 10L/s) from June 18 to July 23 intermittently, however, the data points appear to be correct as they are not inconsistent. The data during this time frame suggests this sewer system may be subject to significant inflow as it corresponds with rainfall events. This data is considered valid and will remain as part of the data for analysis.

F5: MH208 experiences a large increase in flow on January 16th. Initially, it appears that the increase is the result of a rain event, however, following the end of the rainfall the flow continues to oscillate near 0.6 L/s (greater than the previous flows of 0.2L/s prior to January 16th). As MH208 is tributary to an industrial area, it is expected that industry operations in the area changed resulting in the flow increase. This data is considered valid and will remain as part of the data for analysis.

F6: MH211 experiences a large flow increase on April 20th. As MH211 is tributary to a new development (Flato West Subdivision), it is expected that occupancy or new unit connections were made during that time. A follow up flow monitoring program was instigated to confirm this data collected.

6.0 Data Assessment

Base Sanitary Flow Assessment (BSF)

This is the average flow over 3 days, from 6am to 11:59pm that includes residential, commercial, institutional, and industrial sewage and specifically excludes **infiltration** and **inflow**. This is determined by first finding a period of dry weather (7 days without rain) during the highest expected groundwater condition. Since there is no rain during the BSF Assessment period, inflow is expected to be zero. In order to remove infiltration flows, the average night time (midnight to 6am) flows is subtracted from the average 3-day flow stated above. It is expected that sewer flows experienced within the night time hours are primarily infiltration due to low user activity. The expected seasonal high ground water condition is expected to occur during the spring months (March to May). Therefore, the suggested time period to determine the most accurate BSF is from March 25, 2018 at 11:10am to March 27, 2018 at 8:30am.

Average Dry Weather Flow Assessment (ADW)

The **ADW** is the flow during a minimum period of 7 days without rain and is during the expected seasonal high groundwater condition. The time period used to assess the **ADW** was from March 20 to March 27, as this is the only available data set that enables a previous 3-day dry period (no precipitation from March 17 to March 20) followed by 7 days without precipitation and occurs during the assumed seasonal high groundwater level condition.

Significant Rain Event (SRE):

For the purposes of **inflow** analysis, the precipitation event with the highest intensity and longest duration is determined. The **SRE** that was used for analysis began on February 19 at 8:20pm and ended February 22 at 11:05am. This event had a duration of 2 days, 14 hours and 45 min with a maximum intensity of 15.24 mm/hr.

Average Groundwater Infiltration (GWI):

The **GWI** rate is taken to be the 3-day average flow through the MHs from 12:00am to 6am during seasonal high groundwater and after a minimum of 7 days without rain. The assumption is that the sanitary flows during this time are negligible and all flow through the MH is caused by infiltration. The seasonal high groundwater occurs when the ground thaws and the snow melts, and March 2018 had an average daily high temperature of 1.4 degrees Celsius¹. Therefore, the time period that is assumed to have the high groundwater levels suitable for analysis is March 17 to March 27.

Pre-Storm GWI:

Prior to a significant rain event that will be used for **Inflow** (see below) calculation, the **GWI** is to be measured. This will be the 2-day average of the low nighttime flows (midnight to 6am) minus significant industrial or commercial nighttime flows (as applicable).

Inflow Assessment:

The **Inflow** is taken to be the flow through a MH minus the **Pre-Storm GWI** and **BSF** flow rate. The **Inflow Volume** can then be calculated by determining the volume of water contributed to the system by **Inflow**. The **Inflow Volume** is calculated by multiplying the flow rate through the manhole by the inflow duration and then subtracting the **Pre-Storm GWI** and **BSF** over that same duration. The inflow duration is taken from the start of the **SRE** until 24 hours after the **SRE** has ended.

Table 6.1, 6.2, and 6.3, list the average Base Sanitary Flow, average Groundwater Infiltration, and inflow during the SRE, calculated per definition above for each maintenance hole service area. Table 6.4 gives the estimated combined I/I volume during the SRE.

¹ As recorded by The Weather Network

Table 6.1: Base Sanitary Flow Assessment

MH	BSF (L/s)
MH-10A	2.78
MH-15	0.32
MH-16	2.61
MH-17	0.12
MH-19	0.63
MH-22	0.64
MH-23	0.28
MH-34	0.14
MH-208	0.03
MH-211	Omitted

Table 6.2: Average Groundwater Infiltration Assessment

MH	Average GWI (L/s)	Average GWI (m³/day)
MH-10A	7.48	646.27
MH-15	0.2	17.28
MH-16	1.75	151.20
MH-17	0.66	57.02
MH-19	1.29	111.46
MH-22	0.94	81.22
MH-23	0.43	37.15
MH-34	0.21	18.14
MH-208	0.67	57.89
MH-211	Omitted	

Table 6.3: Inflow Assessment

MH	SRE Duration (days)	Inflow Volume ² (m ³)	Inflow (m ³ /day)	Inflow (L/s)
MH-10A	2.61	11,223	4300.00	49.77
MH-15	2.61	1,413	541.38	6.27
MH-16	2.61	5,452	2088.89	24.18
MH-17	2.61	5,513	2112.26	24.45
MH-19	2.61	1,319	505.36	5.85
MH-22	2.61	961	368.20	4.26
MH-23	2.61	700	268.20	3.10
MH-34	2.61	684	262.07	3.03
MH-208	2.61	200	76.63	0.89
MH-211	Omitted			

Table 6.4: Combined I/I Assessment

MH	Infiltration (L/s)	Inflow (L/s)	Combined I/I (L/s)
MH-10A	7.48	49.77	57.25
MH-15	0.2	6.27	6.47
MH-16	1.75	24.18	25.93
MH-17	0.66	24.45	25.11
MH-19	1.29	5.85	7.14
MH-22	0.94	4.26	5.20
MH-23	0.43	3.10	3.53
MH-34	0.21	3.03	3.24
MH-208	0.67	0.89	1.56
MH-211	Omitted		

7.0 Water Usage / Wastewater Flow Comparison

The preceding sections were generally aimed at utilizing instantaneous flows to identify areas on the system that are experiencing significant I/I. However, in order to put the influence of I/I in perspective of the impact on the Township’s wastewater treatment, it is necessary to consider the total volume of I/I on a typical day since this is what will affect the available WWTP Reserve Capacity.

² Based on volume of inflow contributed during the February 2018 SRE.

In order to quantify the amount of I/I volume, a comparison between water delivered into the distribution system (i.e. well production) is compared to the flows experienced at the WWTP. This comparison is based on the 2019 annual water and sanitary reports. Based on this data, the flows are as follows:

Average Water Supply: **569 m³/day**
 Average Wastewater Flows: **1,114 m³/day**

Based on these results, there is potentially **545 m³/day** of I/I in the system which would equate to **556** ERUs of additional Wastewater Reserve Capacity. Although it would be impossible to completely remove I/I from the system, from the above analysis, it can be seen that the impacts of I/I on the system are significant.

8.0 Conclusions:

Table 8.1 gives a comparison of the total expected I/I and measured I/I calculated. The ratios indicate that, for most of the areas, the actual I/I is much higher than what MECRP recommends. Based on the combined Measured/Expected I/I Ratio, area upstream of MH-34 is the one with the most concern, having measured I/I 17 times higher than the expected I/I. Next in ranking are areas upstream of MH-23, MH-10A, which are about equally affected with measured I/I about 10 times higher than the expected I/I. Subsequently, areas upstream of MH-208, MH-17, MH-16, and MH-22 are about equally affected with measured I/I about 7 times higher. Lastly, areas upstream of MH-19 and MH-15 have measured I/I 3.8 times and 1.4 times higher than the expected I/I respectively.

Rankings are established for each service area with 1 being the most affected.

Table 8.1: Expected I/I and Measured I/I Comparison

MH	Length of Upstream Sewer (km)	Cm (ø) x Km	Expected I/I (L/s)	Measured I/I (L/s)	Measured/Expected I/I Ratio	Ranking
MH-10A	13.8	340.8	5.52	57.25	10.4	3
MH-15	10.2	285.6	0.57	6.47	1.4	8
MH-16	8.9	204.1	3.31	25.93	7.8	4
MH-17	4.2	202.4	1.23	25.11	7.7	5
MH-19	2.0	115.8	0.89	7.14	3.8	7
MH-22	1.2	53.9	0.53	5.20	6.0	6
MH-23	0.9	18.6	0.30	3.53	11.7	2
MH-34	0.6	11.8	0.19	3.24	17.0	1
MH-208	0.5	12.5	0.20	1.56	7.7	5

To identify whether an area is more affected by infiltration or inflow, the BSF for each area is compared to the groundwater infiltration and then inflow separately in Table 8.2 and Table 8.3.

Based on the ratios from both tables, it can be interpreted that the inflow during the significant rain event contributes more to the extraneous flow in the sanitary system than the infiltration.

Rankings are established for each service area with 1 being the most affected.

Table 8.2: Measured Infiltration vs BSF

MH	BSF (L/s)	Infiltration (L/s)	Infiltration/BSF Ratio	Ranking
MH-10A	2.78	7.48	2.7	3
MH-15	0.32	0.2	0.6	7
MH-16	2.61	1.75	0.7	6
MH-17	0.12	0.66	5.5	2
MH-19	0.63	1.29	2.0	4
MH-22	0.64	0.94	1.5	5
MH-23	0.28	0.43	1.5	5
MH-34	0.14	0.21	1.5	5
MH-208	0.03	0.67	22.3	1

Table 8.3: Measured Inflow vs BSF

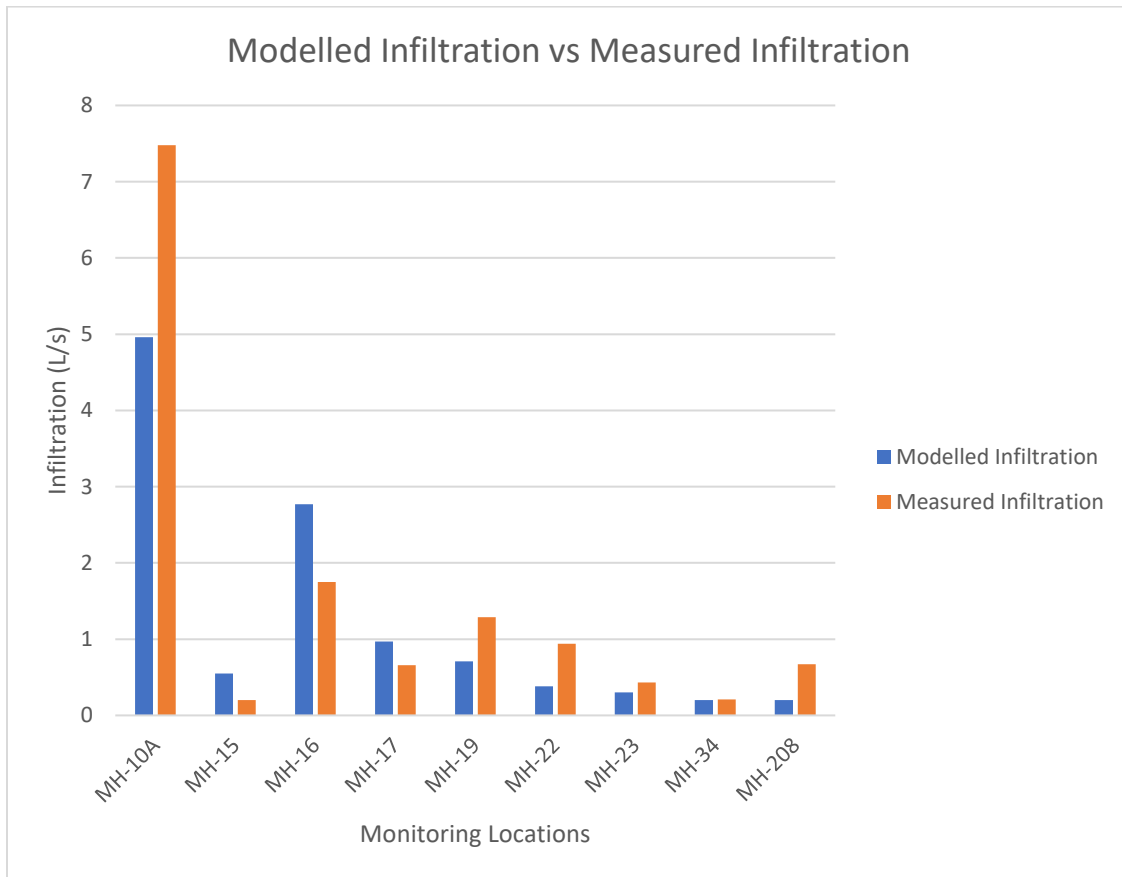
MH	BSF (L/s)	Inflow (L/s)	Inflow/BSF Ratio	Ranking
MH-10A	2.78	49.77	17.9	5
MH-15	0.32	6.27	19.6	4
MH-16	2.61	24.18	9.3	7
MH-17	0.12	24.45	203.7	1
MH-19	0.63	5.85	9.3	7
MH-22	0.64	4.26	6.7	8
MH-23	0.28	3.10	11.1	6
MH-34	0.14	3.03	21.7	3
MH-208	0.03	0.89	29.6	2

Infiltration results from the sanitary sewer model are compared with the measured average groundwater infiltration in Table 8.4 and Figure 8.1. Both results show a similar trend overall, with MH-10A service area having the most infiltration as expected as it is at the bottom end of the system. Modelled (i.e. expected) infiltrations for MH-10A, MH-19, MH-22, MH-208 are significantly less than the measured infiltrations, indicating issues with the sanitary systems upstream of these maintenance holes. It is recommended that inspections be completed through these parts of the system in order to isolate the source. Modelled infiltrations for MH-15, MH-16, and MH-17 are higher than the measured infiltrations, indicating that the piping systems upstream of these maintenance holes are unlikely to be a source of significant infiltration.

Table 8.4: Modelled Infiltration vs Measured Infiltration

MH	Modelled Infiltration (L/s)	Measured Average GWI (L/s)
MH-10A	4.96	7.48
MH-15	0.55	0.20
MH-16	2.77	1.75
MH-17	0.97	0.66
MH-19	0.71	1.29
MH-22	0.38	0.94
MH-23	0.3	0.43
MH-34	0.2	0.21
MH-208	0.2	0.67

Figure 8.1: Modelled and Measured Infiltration Comparison



Areas of Concern:

Infiltration Areas:

MH-208 area is of most concern for infiltration based on Table 7.2. It is tributary to an industrial area and may be subject to poor service connections. This area should be investigated further by means of CCTV inspection during high groundwater conditions (i.e. Spring).

MH-19 is tributary to an area where the sanitary sewer runs through an open field. The sewer system in this area may be damaged or have unauthorized installed leads which permit surface drainage to enter the system. It is recommended that the length of pipe running below the open field be investigated with CCTV during high groundwater conditions (i.e. Spring) and possible unauthorized connections.

Inflow Areas:

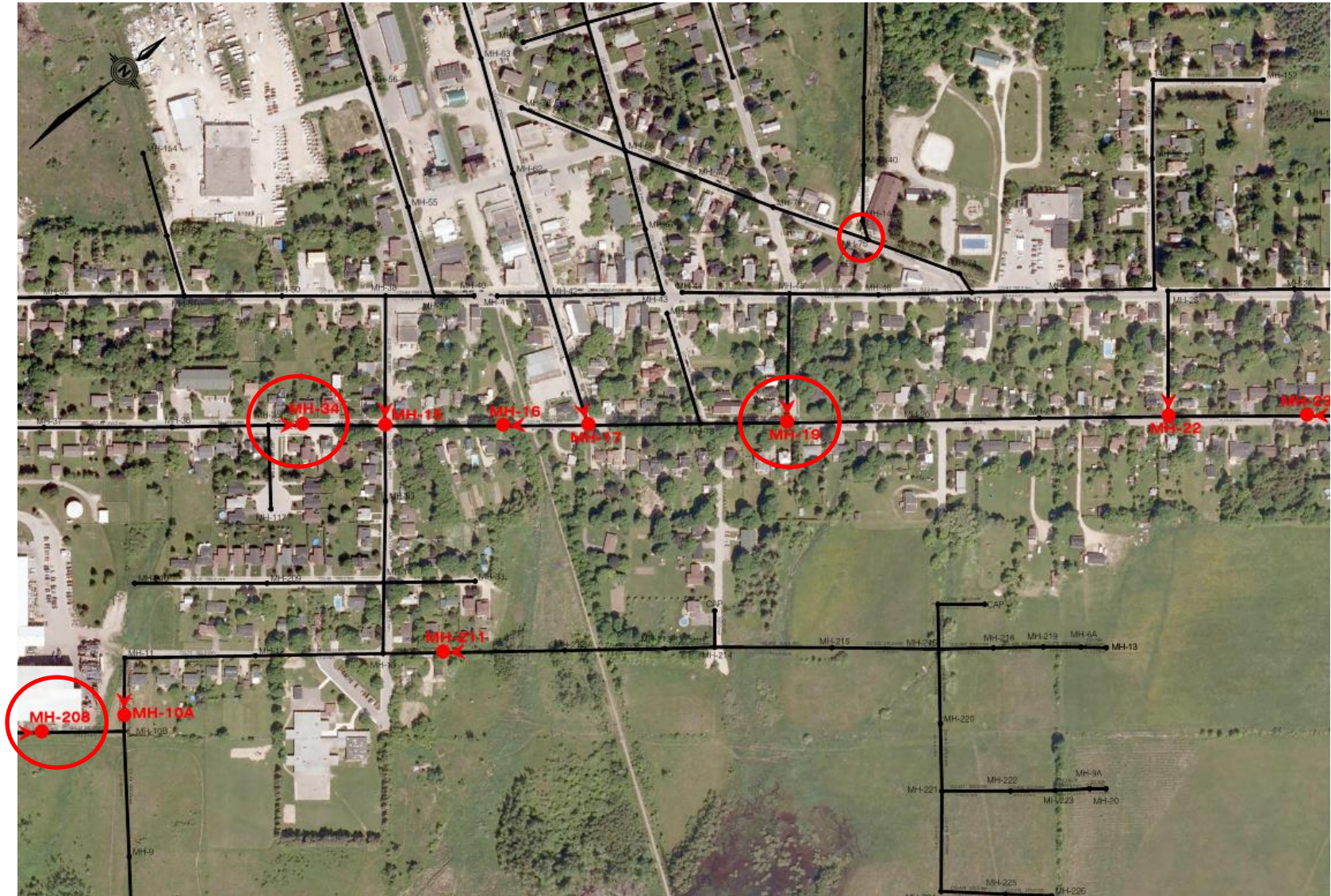
MH-17 has significantly higher inflow, and it is likely due to connections to the downtown area of Dundalk which were noted to be in poor conditions during the recent reconstruction of the downtown area. As part of this reconstruction, many of the sources of infiltration and inflow on Main Street have already been repaired. Therefore, this area is no longer considered a priority for I/I investigations. However, it is recommended to inspect MH-17 during wet period to confirm flows rates are satisfactory.

As discussed above, MH-208 is tributary to an industrial area, therefore it is suspected that there may be some parking lot area drains connected to the system, or maintenance holes/covers damaged, causing significant inflow to the sewer system. Inspection of these maintenance holes, and lateral CCTV inspection is recommended to identify significant inflows or cross connections.

MH-34 is part of the Victoria Street system which had a high Inflow ratio, therefore the degradation of the maintenance holes/covers conditions along with potential cross connections is suspected as well. Maintenance holes inspection is recommended during wet periods to try to isolate the source, following which CCTV inspection may be required.

MH19 has a large tributary area which makes it difficult to isolate the inflow source(s). However, there is an area upstream of MH-75 (north of Owen Sound Street) that runs to an open field and ditch. This area should be visually inspected to determine if there are any open connections to the surface. If visual investigation does not identify any significant source, it may be necessary to complete a CCTV inspection.

Figure 8.1: Areas of Concern



Recommendations:

It is recognized that eliminating I/I from the system entirely is not feasible, however, the goal should be to reduce the amount of I/I in the most practical, cost-effective way. In order to do this, it is necessary to further isolate parts of the system which are contributing to the majority of the I/I. This is a multi-step process which can be time and labour intensive; therefore, it makes sense to start with the areas which are exhibiting the most I/I.

The following strategy is recommended:

- The simplest first step is to visually examine sewer flows in each MH starting at the downstream end. If there is significantly more flow in one incoming sewer over the other, follow this higher flow to the next upstream MH and continue until the higher flow source can be isolated to a specific reach(s) of sewer. This process will need to consider the amount of service area tributary to that sewer as this will affect the flow rate. This process should be completed following a significant rainfall event(s) and/or during high groundwater conditions.
- Inflow detection testing should be completed for the identified high I/I reaches. Techniques include storm sewer dye testing, smoke testing, etc.
- Once the high inflow sewer reaches have been identified, the next step would be to CCTV these sewers during a wet period to determine the exact location of the inflow.
- Following CCTV, any sources of I/I are to be investigated which may include storm sewer dye testing, smoke testing, inspections of individual homes and sanitary service lateral inspections. A list of findings is to be prepared.
- Following the investigation, a workplan is to be prepared identifying all the deficiencies and how best to address them.

This process would be completed for all areas identified as having high I/I.

Remedial works to address high I/I in the system typical include the following:

- Complete house to house inspections of foundation drain and sump pump connections to ensure they are not connected to the sanitary sewer. If so, these connections are to be disconnected and rerouted to a storm service if it exists, or to surface discharge.
- Ensure that new homes include the installation of storm sewer services and the sump pumps are connected to this service as per the Township Municipal Servicing Standards.
- During the reconstruction of streets, ensure that storm sewers are installed for the entire length of the road to accommodate storm sewer services to the property lines of existing homes. The Township will need to weigh the costs and benefits of extending storm services on private property, to remove foundation drains and sump pump connections from the sanitary sewer system on a case by case basis.
- Drainage features (i.e. concrete barrier curb and gutter, catchbasins) within the roads are to be provided and maintained (i.e. snow, trash, leaves removed) to ensure that roads do not flood resulting in flood water entering sanitary MH's.

- Install maintenance hole inserts/pans in all maintenance holes which may be susceptible to surface flooding.
- Repair all sewer and maintenance holes with identified deficiencies. This may include parging of cracks in maintenance holes, replacement of brick/moduloc works, grouting or lining leaking sewers and tees.

Implementation of these works needs to consider the following:

- Who will complete the repairs (i.e. Township or contractor)? Government funding programs are often available for these types of works, this should be investigated.
- Will the deficiencies be undertaken on a street by street basis over an extended period as part of a typical reconstruction program, or, completed as a specific project whose goal is to correct these problems in a timely manner. Obviously, the latter will be more expensive and disruptive, however, it will reduce the I/I issues quickly instead of waiting years.

Once the Township has had a chance to review this information, we suggest a meeting to consider “next steps”.

Respectfully submitted,



Dustin Lyttle, E.I.T



Ray Kirtz, P.Eng

Appendix G - Dundalk WWTF RFP Response Evaluation



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ORANGEVILLE • FERGUS • HARRISTON

March 30, 2022

Township of Southgate
185667 Grey County Road 9
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Dundalk, Ontario
N0C 1B0

Attention: Jim Ellis
Public Works Manager

RE: Dundalk Wastewater Treatment Facility
Request for Proposal (RFP)
Proposal Response Evaluation

In response to the Dundalk Wastewater Treatment Facility Expansion RFP issued on September 20, 2021, including one addendum issued October 6, 2021, eight (8) proposals from various technology suppliers were received. After reviewing the proposals, four (4) suppliers were shortlisted based on the proposal completeness and their systems' ability to achieve effluent criteria as a stand-alone system. Additional information was requested from the shortlisted suppliers, this information was provided at the end of January.

This letter provides an overview and evaluation of these shortlisted proposals. These assessments are based primarily on the proposed technology's ability to efficiently and effectively assist the Township in addressing the problem statement identified within the Dundalk Wastewater Treatment Capacity Municipal EA (MCEA) which reads as follows:

"The Township of Southgate is committed to delivering responsive and cost-effective municipal services that provide for the economic, social and environmental well-being of its ratepayers now and in the future. Proposed growth in the Dundalk urban centre will result in the allocation of the remaining reserve capacity of the wastewater treatment facility to residential development. As a result, further commitment toward growth and infilling cannot be realized until additional wastewater capacity is made available. The objective of this Class Environmental Assessment is to consider cost effective sewage collection and treatment alternatives for the Dundalk urban centre that will minimize environmental impacts and provide additional wastewater treatment capacity."

The operational and capital costs as well as the completeness of the system as outlined in the proposal was also considered in the assessment.

Summary of Proposals:

1. OPTAER Partial Mix, Settling Cells & SAGR (Nexom Treatment Equipment Supply):

Summary

Nexom Treatment Supply (Nexom) proposes the installation of a fine bubble aeration system within Cell 1 (Phase 1) and ultimately Cell 2 for Phase 2, chemical dosing for phosphorus removal in Cell 3, a SAGR Nitrification Reactor and a BluePro Total Phosphorus Removal filter.

Contact: Byron Heppner – byron.heppner@nexom.com (204) 471-3720



Treatment

The technologies proposed by Nexom are expected to achieve the following effluent concentrations with a performance guarantee as noted.

Parameter	Objective (mg/L)		Proposed (mg/L)	
	Phase 1	Phase 2	Phase 1 ¹	Phase 2
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	5	5	5
Total Suspended Solids (TSS)	5	5	5	5
Total Phosphorus (TP)				
Temperature > 5°C	0.21	0.17	0.21	0.17
Temperature < 5°C	0.43	0.35	0.43	0.35
Dissolved Oxygen (DO)	> 5	> 5	3.0	3.0
Un-Ionized Ammonia (NH ₃ -N)	0.05	0.05	0.05	0.05
pH ²	6.5 - 8.5	6.5 - 8.5	Not Provided	Not Provided

¹ Phase 1 effluent parameters provided with a 60-month performance guarantee, subject to terms and conditions.

² It is expected that effective treatment will result in adequate pH Levels being achieved.

Schedule

The proposal does not include installation of the technologies and therefore does not include an installation timeline, however provides a materials delivery schedule of **22-24 weeks**.

Supply & Operation Costs

Based on the proposal received, the expected energy usage, technology supply and annual chemical costs are as follows. All costs presented are in Canadian dollars and do not include HST. These costs do not include installation or supporting infrastructure required for the implementation of this technology.

Phase	Annual Energy Consumption (kWh)	Technology Supply Cost ¹	Chemical Consumption (Alum)
Phase 1	623,640	\$2,293,600	170,820 Liters
Phase 2	1,036,320	\$797,000	237,259 Liters

¹ Supply and construction of the SAGR Filter granular material, necessary buildings and liners **has not** been included. Shipping to site included.

² Alum required for Total Phosphorus Removal. To be confirmed based on bench testing.

2. Ares 750T Aerator, NitrOx and AquaDisk Media Filter (Triplepoint):

Summary

Triplepoint proposes a series of improvements to the existing WWTF including the replacement of the existing aeration equipment within the post aeration cell (Cell 5) with the Area 750T Aerator system, addition of a NitrOx lagoon ammonia polishing reactor (MBBR) prior to the final filter, replacement of the existing sand filter with a AquaDisk Media Filter.

Contact: Patrick Hill (patrick@lagoons.com) – (574) 339-6781

Treatment

The technologies proposed by Triplepoint are expected to achieve the following effluent concentrations. A performance guarantee has not been provided.



Parameter	Objective (mg/L)		Proposed (mg/L)	
	Phase 1	Phase 2	Phase 1	Phase 2
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	5	5	5
Total Suspended Solids (TSS) ¹	5	5	5 <	5 <
Total Phosphorus (TP)				
Temperature > 5°C	0.21	0.17	0.21	0.17
Temperature < 5°C	0.43	0.35	0.21	0.21
Dissolved Oxygen (DO)	> 5	> 5	Not Applicable ²	
Un-Ionized Ammonia (NH ₃ -N)	0.05	0.05	0.05	0.05
pH	6.5 - 8.5	6.5 - 8.5	Not Provided	Not Provided

¹ To achieve any effluent TSS effluent requirement will require that the owner manage algae properly prior to disk filter. Filter design based on an average 15 mg/L and maximum 20mg/L TSS influent concentration.

² System is proposed to continue use of existing Dissolved Oxygen Trench which will ensure DO requirements are met.

Schedule

The equipment is expected to be delivered within **20 weeks** upon ordering. The total construction time is expected to be a minimum of **4 to 6 months**, with typical times being **8 to 12 months**.

Supply & Operation Costs

Based on the proposal received, the expected energy usage, technology supply and annual chemical costs are as follows. All costs presented are in Canadian dollars and do not include HST. These costs do not include installation or supporting infrastructure required for the implementation of this technology.

Phase	Energy Consumption (kWh)	Technology Supply Cost	Chemical Consumption (Polymer)	Chemical Consumption (Alum)
Phase 1 (Annual)	468,868	\$1,135,498	3,150 Liters	29,361 Liters
Phase 2 (Annual)	645,581	\$348,641	4,380 Liters	41,136 Liters

3. ADS Aeration, LagoonGuard MBBR & Hydrotech Discfilter (Veolia Water Technologies):

Summary

Veolia proposes a series of improvements to the existing WWTF including additional of a fine bubble aeration system in existing Cell 3, addition of a moving bed biological reactor (MBBR) subsequent the existing post aeration cell and an optional discfilter to replace the existing sand filter for Phase 2.

Contact: David Pearce (david.pearce@veolia.com) – (905) 286-4846

Treatment

The technologies proposed by Veolia are expected to achieve the following effluent concentrations. A performance guarantee has been provided.



Parameter	Objective (mg/L)		Proposed (mg/L)	
	Phase 1	Phase 2	Phase 1	Phase 2
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	5	5	5
Total Suspended Solids (TSS)	5	5	5	5
Total Phosphorus (TP)				
Temperature > 5°C	0.21	0.17	0.21	0.17
Temperature < 5°C	0.43	0.35	0.43	0.35
Dissolved Oxygen (DO)	> 5	> 5	> 5	> 5
Un-Ionized Ammonia (NH ₃ -N)	0.05	0.05	0.05	0.05
pH	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5
E. coli (#/100mL)	100	100	100	100

Schedule

The proposal does not include installation of the technologies and therefore does not include an installation timeline, however provides a delivery schedule of **43 – 50 weeks** for all components. It is expected that construction can begin prior to all equipment being delivered.

Supply & Operation Costs

Based on the proposal received, the expected energy usage, technology supply and annual chemical costs are as follows. All costs presented are in Canadian dollars and do not include HST. These costs do not include installation or supporting infrastructure required for the implementation of this technology.

Phase	Annual Energy Consumption (kW)	Technology Supply Cost	Chemical Consumption (Ferric Sulfate) ¹
Phase 1	307,608	\$1,138,468	179,945 Liters
Phase 2	418,787	\$576,900	250,025 Liters

¹ Estimated additions of Ferric Sulfate for pH adjustment and Phosphate removal. There is no expected change in Alum dosing.

4. Ideal MBBR and DAF System (World Water Works):

Summary

World Water Works (WWW) proposes the installation of a Moving Bed Biofilm Reactor (MBBR) and Dissolved Air Floatation System. The proposal has not indicated if the technologies will replace the existing WWTF systems.

Contact: Tonya Van Dyke – (tvandyk@cmeti.com) - (262) 358-0853

Treatment

The technologies proposed by WWW are expected to achieve the following effluent concentrations. No effluent guarantee has been provided.



Parameter	Objective (mg/L)		Proposed (mg/L)	
	Phase 1	Phase 2	Phase 1	Phase 2
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	5	5	5 (BOD)	5 (BOD)
Total Suspended Solids (TSS)	5	5	5	5
Total Phosphorus (TP)				
Temperature > 5°C	0.21	0.17	Removed Chemically	Removed Chemically
Temperature < 5°C	0.43	0.35	Removed Chemically	Removed Chemically
Dissolved Oxygen (DO)	> 5	> 5	Not Indicated	Not Indicated
Un-Ionized Ammonia (NH ₃ -N)	0.05	0.05	0.022	0.022
pH	6.5 - 8.5	6.5 - 8.5	Not Indicated	Not Indicated

Schedule

The proposal does not include installation of the technologies and therefore does not include an installation timeline, however provides a delivery schedule of **24 – 29 weeks**.

Supply & Operation Costs

Based on the proposal received, the expected energy usage, technology supply and annual chemical costs are as follows. All costs presented are in Canadian dollars and do not include HST. These costs do not include installation or supporting infrastructure required for the implementation of this technology.

Phase	Annual Energy Consumption (kW)	Technology Supply Cost	Chemical Consumption (Polymer) ¹	Chemical Consumption (Alum) ¹
Phase 1	467,795	\$3,186,300	1,658 Liters	1,976 Liters
Phase 2	565,819	\$162,500	2,308 Liters	2,750 Liters

¹ Chemical consumption associated with Total Phosphorus removal not included.

Technology Proposal Assessment:

After receiving the responses from the shortlisted suppliers, a more thorough review of the costs associated with the technology, the operation and maintenance requirements, and energy usage was completed.

Treatment:

All of the technologies, except for the one proposed by World Water Works, have indicated their ability to achieve the effluent criteria parameters. World Water Works has not clearly confirmed all of the parameters of the expected effluent (i.e., TP) from the WWTF. Rather they indicate it will be removed chemically which implies an additional treatment process is required. It is noted that to achieve the desired effluent TSS requirement, the owner will be required to manage algae properly prior to final filtration. This issue will be considered as part of detailed design.

Schedule:

The supply/delivery time of technologies ranged from 10 to 50 weeks from order date, this does not include duration for construction or implementation of the technology. The shortest supply/delivery schedule is 20 weeks provided by Triplepoint. An estimated total implementation schedule will be provided following preliminary design.



Estimated Capital Costs:

Although suppliers were requested to provide estimates for implementation (i.e., construction, buildings, site works etc.) of their respective systems, most indicated that there were too many unknowns specific to the project at this early stage to reasonably estimate an overall cost of the project. However, some suppliers indicated that the total overall cost of each phase could be 2 to 3.5 times the technology supply cost. Although, this is a large range, it does imply that there are significant costs over/above the supply figures put forward by the proposals. The Township will need to be aware of this when updating capital budgets for this project.

Overall project costs will need to be estimated once a preliminary design is completed using the selected technology.

Description	Supply Cost		Total
	Phase 1	Phase 2	
OPTAER Partial Mix, Settling Cells & SAGR (Nexom)	\$2,293,600	\$797,000	\$3,090,600
Ares 750T Aerator, Nitrox & AquaDisk (Triplepoint)	\$1,135,498	\$348,641	\$1,484,139
ADS Aeration, LagoonGuard MBBR & Hydrotech Discfilter (Veolia)	\$1,138,468	\$576,900	\$1,715,368
Ideal MBBR and DAF System (WWW)	\$3,186,300	\$162,500	\$3,348,800

Energy Usage:

In all cases the technology proposed will require energy usage. The technology proposed by Veolia will require the least amount of energy, while the technology proposed by Nexom will be the highest as outlined below.

Description	Phase 1		Phase 2 (Total)	
	kWh	Cost	kWh	Cost ¹
OPTAER Partial Mix, Settling Cells & SAGR (Nexom)	623,640	\$62,640	1,036,320	\$103,632
Ares 750T Aerator, Nitrox & AquaDisk (Triplepoint)	468,868	\$46,887	645,581	\$64,558
ADS Aeration, LagoonGuard MBBR & Hydrotech Discfilter (Veolia)	307,608	\$30,761	327,683	\$32,768
Ideal MBBR and DAF System (WWW)	467,795	\$46,780	565,819	\$56,582

¹Assume Hydro Cost is \$0.10/kWh.

Consumables & Treatment:

All proposals received indicate that chemical treatment or regular filter replacements will be required in order to meet the effluent requirements. The estimated costs of these annual consumables are listed below.

Technology	Annual Chemical Usage Cost	
	Phase 1	Phase 2 (Total)
OPTAER Partial Mix and Settling Cells (Nexom)	\$85,410	\$118,630
Ares 750T Aerator, Nitrox & Aqua Disk (Triplepoint)	\$35,000	\$69,500
ADS Aeration, MBBR & Discfilter (Veolia)	\$89,972.50	\$125,012.50
Ideal MBBR and DAF System (WWW) ¹	\$1,438	\$2,000



¹ Costs associated with meeting all effluent requirements (i.e., TP) were not provided.

Current Installations:

As requested by the RFP document, the proposals submitted included references to existing comparable projects where the proposed technology has been implemented. These references have been reviewed and summarized below.

OPTAER Partial Mix, Settling Cells & SAGR (Nexom)

The technology proposed by Nexom including the OPTAER, SAGR and BluePro system has been successfully implemented in a number of comparable Canadian Municipalities, including Long Plain First Nation (MB), Sundridge (ON) and Perth (ON) with average daily flow capacities of 998m³/day, 1,192m³/day and 7,731m³/day, respectively. The technology was involved in the Township of Mapleton, but was recently cancelled due to a number of factors not related to technology cost or qualifications.

Ares 750T Aerator, NitrOx & AquaDisk Filter (Triplepoint)

The various components proposed by Triplepoint have been installed in a number of communities, however a specific reference showing a community where this combination has been implemented was not provided.

The NitrOx system has been successfully implemented in De Soto, Iowa, Hill Crest, and Villages Missouri, with average daily flow capacities of 2,384m³/day, 227m³/day and 378m³/day respectively. The full scale NitrOx system is currently installed in 25 places in North America, five of which are in cold weather conditions. The system is MECP approved.

Further to this, the AquaDisk Filter has also successfully been installed in Dochester, Kitchener and Orillia, Ontario with average daily flow capacities of 1,199m³/day, 123,025m³/day and 27,300m³/day respectively.

ADS Aeration, LagoonGuard MBBR & Hydrotech Discfilter (Veolia)

The technology proposed by Veolia has been successfully implemented in a number of communities with similar design requirements, including Wray Colorado, Marbleton Wyoming and Trenton Illinois with average daily flow capacities of 2,000m³/day, 3,000m³/day and 2,000m³/day respectively.

Further to this, there are number of other installations of the various components of this technology within Canadian applications where the technology treatment train is similar to that proposed for Dundalk WWTP.

Ideal MBBR and DAF System (WWW)

The technology proposed by World Water Works has not been installed anywhere in Canada. The system has been selected and improved in Brighton, Ontario. It was not indicated if the system is MECP approved.

Operation & Maintenance Requirements:

An important aspect of the technologies proposed is the amount of operator intervention required to operate, monitor and maintain the system. As such, the proposals provided have been assessed based on operator involvement that is expected to be required. Generally, the operator intervention requirements for the various systems considered are low, requiring infrequent simple maintenance and regularly inspections to confirm normal operation. Descriptions of operator requirements provided for each system below.

OPTAER Partial Mix, Settling Cells & SAGR (Nexom)

The aeration and SAGR systems as proposed by Nexom will require one operator approximately ½ hour per week for routine inspection and maintenance. The aeration system may require minor adjustments (tension/weight adjustment) periodically and the SAGR step-feed valve must be changed semi-annually. Additionally, the aeration system blowers will require maintenance such as oil changes, bearing greasing, belt replacements and inlet filter changes. These requirements are similar to those of the existing aeration system and are typical for all these technologies considered

The BluePro Sand Filter will also require approximately ½ hour per weekday of maintenance and inspection.



Ares 750T Aerator, NitrOx & AquaDisk Filter (Triplepoint)

The systems proposed by Triplepoint will require minimal maintenance (either monthly or annually). The lubrication of the filter will contribute to the estimated 3.3 hours of maintenance per year. The equipment will require regular checks as an operator would perform during their normal routine.

ADS Aeration, LagoonGuard MBBR & Hydrotech Discfilter (Veolia)

The system proposed by Veolia will require 29.9 hours of maintenance each year for the Discfilter. It is indicated that the MBBR will require minimal maintenance.

Ideal MBBR and DAF System (WWW)

The system proposed by World Water Works did not include specific details regarding the level of operator intervention that will be required. They indicated that the system will require part time operation for maintenance checks and monitoring.

Preferred Alternative:

Although any of the various technologies could achieve the effluent criteria, based on the information provided by the various suppliers, some technologies/suppliers would appear to be better suited to the Dundalk WWTP expansion application. Given the early stage of the project, there are various unknowns related to the implementation of each technology. These unknowns will be addressed as part of the detailed design of the project; however, a preferred technology will need to be selected to proceed to the detailed design stage. Given this, it is critical that the technology be adaptable and that the supplier be knowledgeable of treatment processes, not just their specific system, but how it interacts and can be integrated with the other parts of the treatment train, especially lagoon systems. From this critical standpoint, the Triplepoint proposal, and subsequent meeting with their design team, has demonstrated clear understanding of what the needs/issues of the overall treatment system are and how these can be effectively addressed by their proposal treatment system.

Other considerations as outlined previously (i.e., costs, experience, O&M, schedule) were compared for the various technologies. Although there are many unknowns/variables that may affect these as the design progresses, our evaluation was based on the information provided. Triplepoint was not necessarily the best system in every consideration, but it was consistently at or near the top amongst the various suppliers. Triplepoint’s treatment system including the Ares 750T Aerator, NitrOx MBBR and AquaDisk Filter system has various existing installations, the lowest capital costs with minimal O&M requirements, and the potential to expand beyond Phase 2 using existing infrastructure.

Upon review of the shortlisted proposals and additional information it was determined that Triplepoint has the necessary abilities/experience and technologies to satisfy the sewage treatment requirements as outlined in the RFP in an efficient and cost-effective manner.

Total (Supply and Implementation) Cost:

Project Component	Phase 1		Phase 2	
	Supply Cost	Installation Cost	Supply Cost	Installation Cost
AquaDisk System	\$377,930	\$400,000	Not Required	
Ares & NitrOx	\$757,568	\$1,329,635	\$348,641	\$657,425
AquaDisk Pre-Screen	\$6,000	\$10,000	Not Required	
Engineering Allowance		\$500,000	\$200,000	
Contingency		\$265,925	\$131,485	
HST (13%)		\$474,118	\$173,882	
Preliminary Total Estimated Costs:		\$4,121,176	\$1,511,433	



Next Steps:

Supplier Engagement:

Triton/Township will prepare a service agreement with the selected supplier to ensure the estimated equipment supply only costs are honored throughout the project duration, with an allowance for market fluctuations. This agreement will further provide provisions aimed at formalizing a partnership with the Township, Triton and the supplier to ensure the necessary engagement/assistance with the overall design/implementation of the selected technology.

Additionally, the supplier will be relied upon to assist in making the necessary applications to the MECP to finalize the on-going Dundalk Wastewater Treatment Capacity MCEA.

Schedule:

Based on the above, Triton has prepared a preliminary project schedule.

Award of RFP to Supplier: **April 2022**

Preliminary Design Concept of Complete System: **April 2022 and May 2022**

1st Public Information Centre: **May 2022**

Preliminary Submission to the MECP: **June 2022**

Detailed Design of Complete System: **July to September 2022**

2nd Public Information Centre: **September 2022**

Notice of Completion & EA Design Report: **September to October 2022**

Detailed Design Submission to MECP for ECA: **October 2022**

Preparation of Contract Documents: **September – November 2022**

Tendering: **December 2022- January 2023**

Construction: **March 2023 – Fall 2023**

If you have any questions or concerns, please do not hesitate to contact us.

Respectfully,

Triton Engineering Services Limited



Dustin C. Lyttle, P. Eng.

Encl.

cc. Dave Milliner, CAO, Township of Southgate



Appendix H – GRCA Special Studies

$$= 4,571 \text{ L/min}$$

3. The backwash rate in terms of m³/m²·min (Filter area: 8.48 m²), is calculated using the following formula as an example:

$$\text{Backwash rate} \left(\frac{\text{L}}{\text{min}} \right) = \frac{\text{Backwash rate (L/min)}}{\text{Filter area (m}^2\text{)}} \\ = \frac{4,571 \text{ (L/min)}}{8.48 \text{ (m}^2\text{)}}$$

$$= 539 \text{ (L/m}^2 \cdot \text{min)} / \left(\frac{1000\text{L}}{\text{m}^3} \right)$$

$$= \mathbf{0.54 \text{ m}^3/\text{m}^2 \cdot \text{min}}$$

The backwash rates for each backwash trial are summarized in Table 2: Summary of Backwash data. Figure 5 outlines the typical air and water backwash rates used with sand and anthracite filters.

Table 11-12
Typical air and water backwash rates used with sand and anthracite filters^a

Medium	Medium characteristics		Backwash sequence	Backwash rates, m ³ /m ² ·min	
	Effective size, mm	Uniformity coefficient		Air	Water
Sand and anthracite ^b	0.65(s)	1.4	1st – air	0.9–1.5	
	1.2(a)	1.4	2nd – air + water 3rd – water	0.9–1.5	0.3–0.5 0.6–1.0
Sand	1	1.4	1st – air + water 2nd – water	0.9–1.5	0.25–0.3 0.5–0.6
Sand	2	1.4	1st – air + water 2nd – water	1.8–2.4	0.4–0.6 0.8–1.2
Anthracite	1.7	1.4	1st – air + water	1.0–1.5	0.35–0.5 0.6–0.8
			2nd – water		

^aAdapted from Dehab and Young (1977) and Cleasby and Logsdon (2000).

^bDual medium filter bed is fluidized.

Note: m³/m²·min × 24.5424 = gal/ft²·min

m³/m²·min × 3.2808 = ft³/ft²·min

Figure 5: Typical Backwash Rates from (Metcalf & Eddy, 2003)

Table 2: Summary of Backwash data

	Backwash Number	Before Level (m)	After Level (m)	Difference (m)	Volume Pumped (L)	Backwash Run Time (mm:ss)	Run Time (min)	Pump Rate (L/min)	Backwash Rate (m ³ /m ² /min)
1	10:15 am backwash (filter #2)	1.045	3.83	2.785	47,234	10:20	10.33	4,571	0.54
2	11:55 am backwash (filter #1)	1.05	4.07	3.02	51,219	10:02	10.03	5,105	0.60



Figure 11: Filter Media Expansion Measurement Tool. In the background: the rod used measure media depth



Figure 12: Backwash #1 media expansion results for filter #2. All tubes were filled with filter media



Figure 13: Backwash #2 media expansion result for filter #1 showing media in seven of eight tubes filled with media.

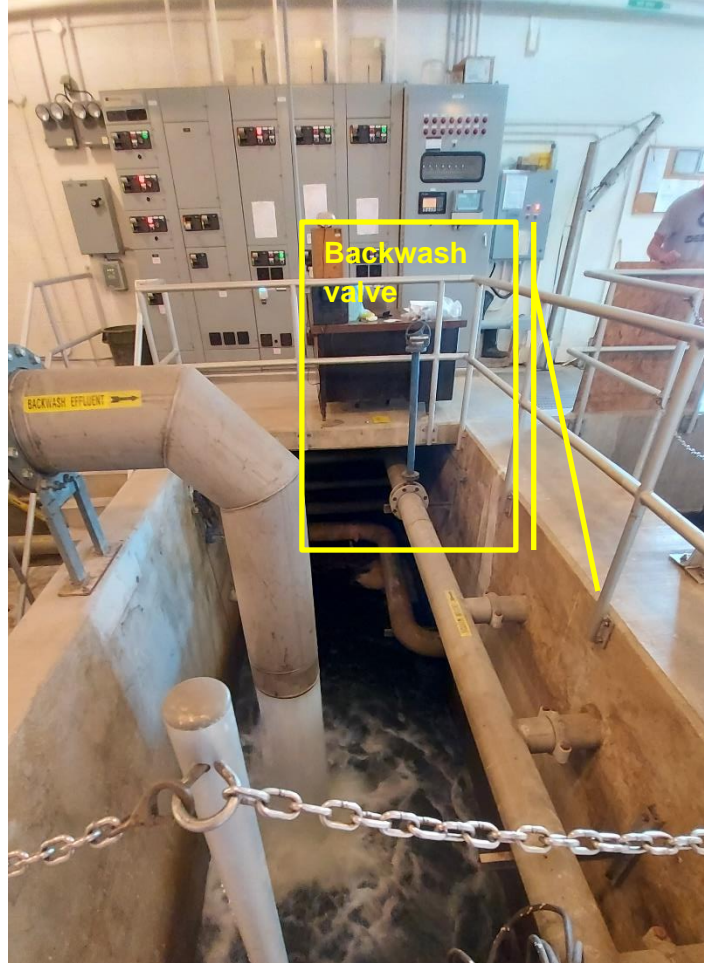


Figure 14: Backwash line and backwash valve

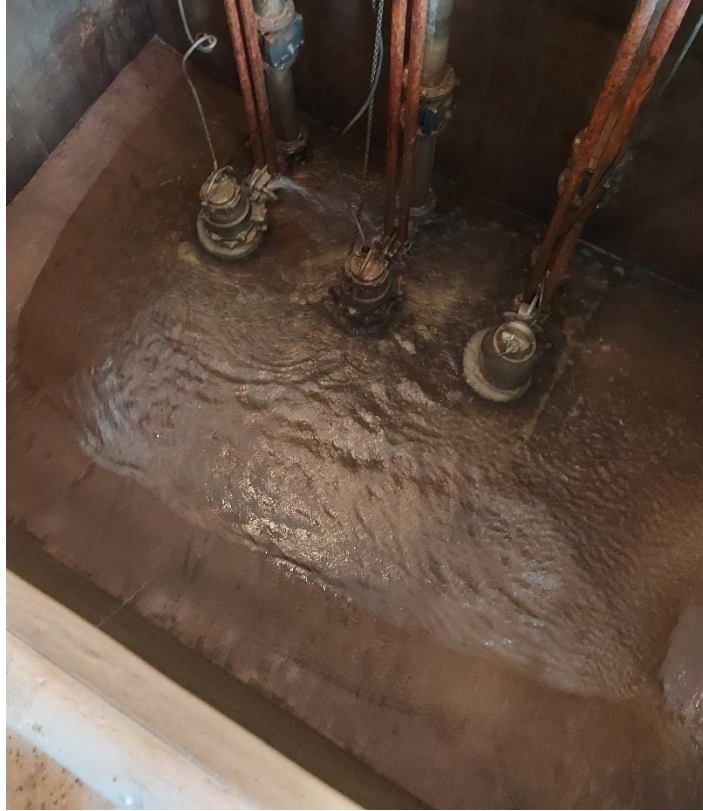


Figure 15: Effluent tank following backwash

Dundalk Lagoons

Filters Capacity and Performance Evaluation

Simion Tolnai & Mark Anderson, GRCA

(Fergus November 14, 2019)

Design Evaluation

Comparison with textbook values (*Metcalf & Eddy, Fourth Edition, 2003*)

Table 1. Dundalk lagoons filter bed configuration compared to typical design data for dual depth filters

Dual Medium Depth Filter	Anthracite		Silica Sand	
	Dundalk Filters	M&E Fourth Edition (2003)	Dundalk Filters	M&E Fourth Edition (2003)
Media Layer Depth (mm)	360	360-900 (720)	250	180 - 360 (360)
Effective Size (mm)	1.1 - 1.2	0.8 -2.0 (1.3)	0.45 - 0.55	0.4 -0.8 (0.65)
Uniformity Coefficient (unitless)	NA	1.3 - 1.6 (≤ 1.5)	NA	1.2 -1.6 (≤ 1.5)
Filtration Rate ($m^3/m^2/day$)	216	115.2 - 576 (288)	216	115.2 - 576 (288)

Table 2. Dundalk lagoons filtration rate

Filter Design	Filtration Rate ($L/m^2/min$)			Filtration Rate ($m^3/m^2/day$)		
	Min	Max	Typical	Min	Max	Typical
Mono – medium*	80	240	120	115.2	345.6	172.8
Dual – medium*	80	400	200	115.2	576	288

Napier-Reid		150	216
Dundalk filter size (m^2)	8.48	Design Capacity: 1,832 m^3/day Secondary Effluent TSS <40 mg/L (2015 Dundalk Sewage Treatment Plant O&M Manual)	

*from Metcalf & Eddy Table 11-8 & 11-9

Performance Evaluation

Table 3. TSS and TP concentrations before and after filtration

	Max pH	TSS						TP		
		Before Filter (In-house)	After filter (In-house)	%	Before Filter (Outside lab)	After Filter (Outside lab)	% Rem.	Before Filter (Outside lab)	After Filter (Outside lab)	%
Jan-18	7.6	14.2	8	44%		5		0.05		
Feb-18	7.7	15.3	9.9	35%	8	6	25%	0.1	0.09	10%
Mar-18	8.2	12.3	9.2	25%	7	6	14%	0.11	0.09	18%
Apr-18	8.3	22.3	17.6	21%	16	13	19%	0.07	0.08	-14%
May-18	7.2	18.5	14.5	22%	19	15	21%	0.09	0.11	-22%
Jun-18	8.0	17.7	11.8	33%	14	10	29%	0.18	0.08	56%
Jul-18	7.3	11.5	5.6	51%	9	6	33%	0.13	0.12	8%
Aug-18	7.2	8.6	3.6	58%	4	3	25%	0.23	0.15	35%
Sep-18	7.7	5.4	1.9	65%	26	3	88%	0.4	0.2	50%
Oct-18	8.3	8.2	2.3	72%	3	3	0%	0.14	0.13	7%
Nov-18	8.3	9.3	2.3	75%	6	4	33%	0.13	0.05	62%
Dec-18	8.3	7.9	3.3	58%	2	2	0%	0.1	0.08	20%
Jan-19	8.2	11.7	6.2	47%	8	3	63%	0.36	0.33	8%
Feb-19	8.0	23	14.4	37%	11	16	-45%	0.86	0.78	9%
Mar-19	7.4	24.2	14.7	39%	10	10	0%	1.26	1.06	16%
Apr-19	7.7	15.5	9.9	36%	8	14	-75%	0.66	0.52	21%
May-19	8.2	13.3	6.6	50%	12	13	-8%	0.14	0.1	29%
Jun-19	9.0	4.8	2.4	50%	8	3	63%	0.18	0.13	28%
Jul-19	6.3	12	5	58%	3	3	0%	0.22	0.23	-5%
Min	6.3	4.80	1.90	21%	2.00	2.00	0%	0.07	0.05	29%
Max	9.0	24.20	17.60	75%	26.00	16.00	88%	1.26	1.06	16%
Average	7.8	13.46	7.85	46%	9.67	7.26	25%	0.30	0.23	23%

Table 4. Summary of 2018 filter performance data (Dundalk, Fergus, Caledonia and Hagersville)

WWTP	2018 ADF (m ³ /d)	Solids loading rate (kg/m ²)	Filter Loading Rate (m ³ /m ² /d)	Average Secondary Effluent TSS (mg/L)	Average Final Effluent TSS (mg/L)	% removal
Dundalk	1,107	0.84	65.27	12.82	7.59	41%
Fergus*	4,592	0.46	27.60	16.63	6.93	58%
Caledonia	3,611	0.12	18.96	6.07	2.30	62%
Hagersville	2,401	0.21	16.67	12.72	2.78	78%

* Fergus data only available from Jan-Mar 2018

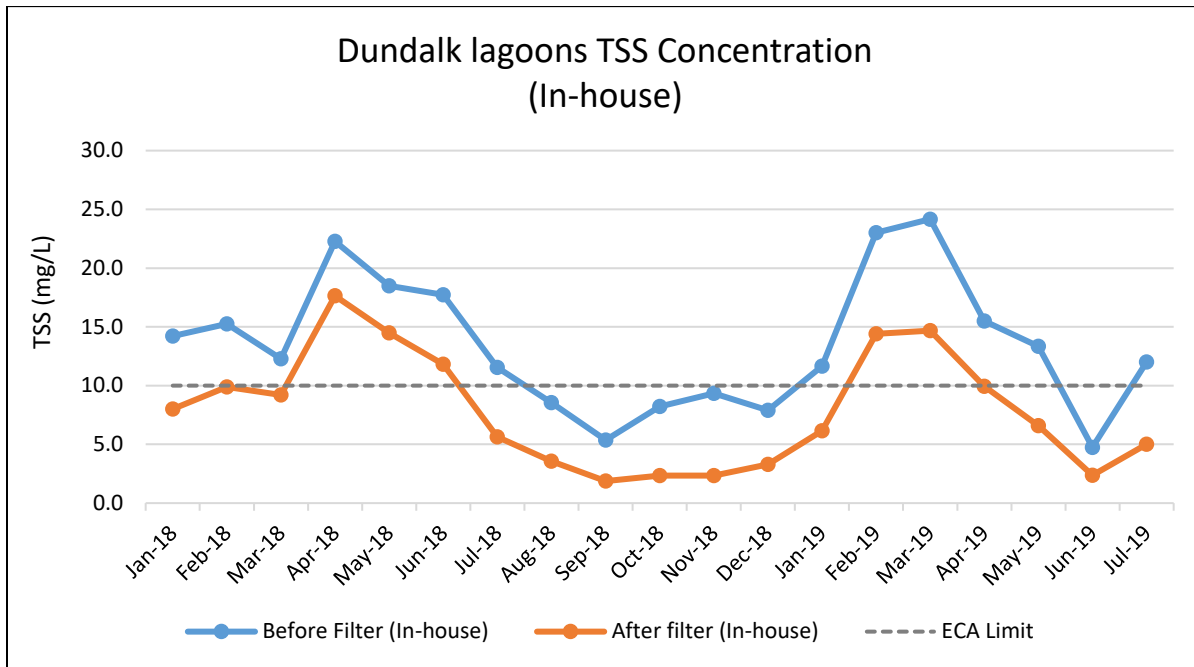


Figure 1. Dundalk WWTP Effluent TSS before and after filters (January 2018 – July 2019)

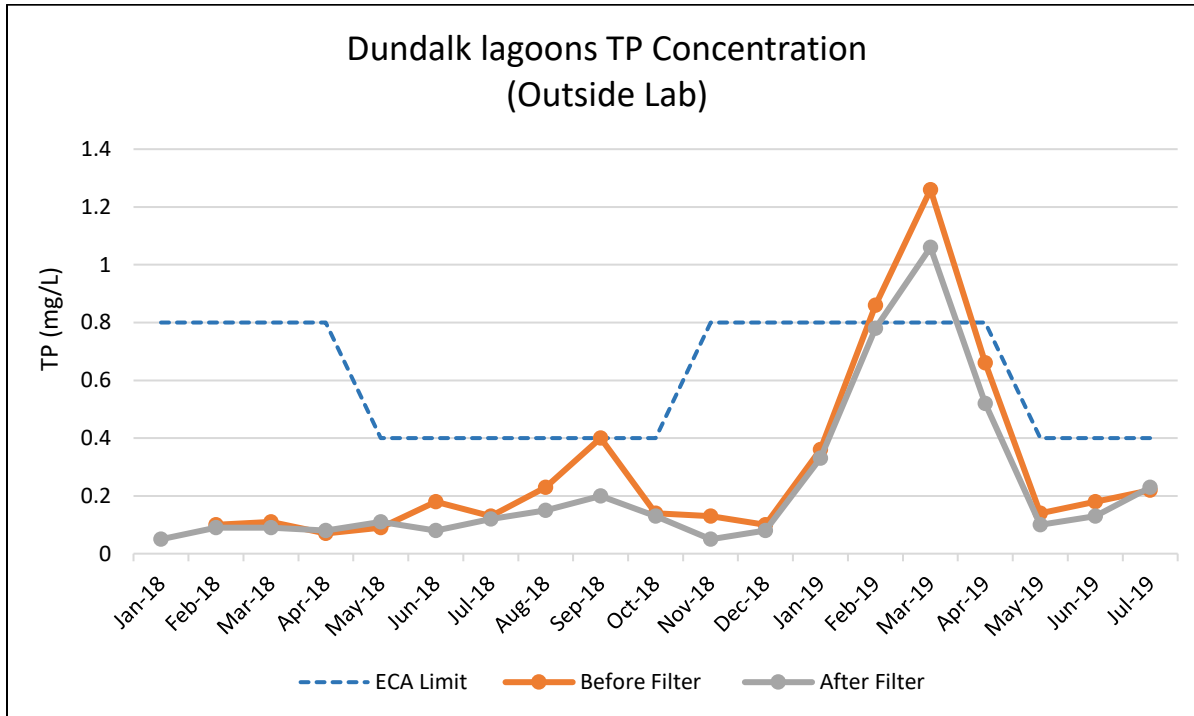


Figure 2. 2018 Dundalk WWTP Effluent TP before and after filters (January 2018 – July 2019)

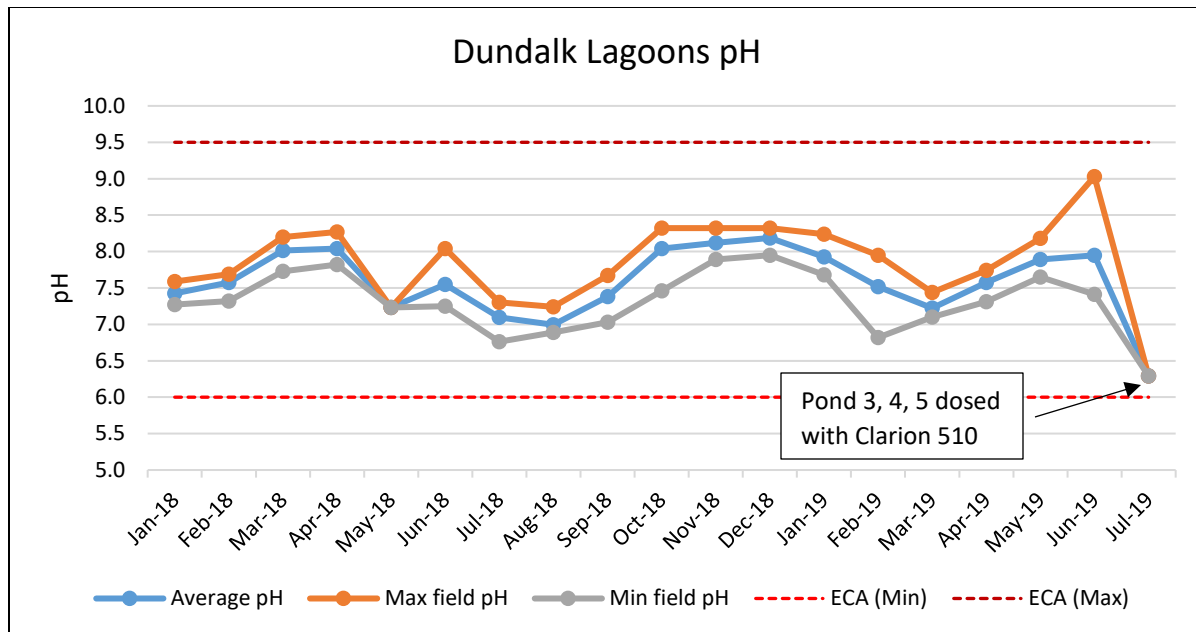


Figure 3. Dundalk WWTP Effluent pH filters (January 2018 – July 2019)

Conclusions

After reviewing the performance data from January 2018 to July 2019 provided by Dundalk staff, the following conclusions can be drawn:

- Dundalk lagoons system encounters difficulties in removing TSS in early spring when ice break-up occurs and the lagoon water is exposed to sunlight and the water temperature increases.
- Based on 2018 data, Dundalk lagoons have experienced unusually high TSS values compared with other tertiary plants in the Grand River watershed (Annex 1)
- Outside lab data shows that if the secondary effluent TSS exceeds 10 mg/L the filters are not efficient in removing the suspended solids. Adjusting the chemical addition is required (alum or alum & polymer) Table 3
- A spike in TSS can also be noticed in June-July when the lagoons experience algal bloom. The changes in TSS and TP concentration before and after the filters are depicted in Figures 1 and 2.
- Total phosphorus (TP) and TSS follow the same seasonal trend
- As depicted in Table 3, the two available anthracite and sand filters have a removal capability for TSS ranging from 21% to 75% with an average of 46% based on in-house data and an average reduction of 25% based on outside lab results
- Based on a previous memo (Table 4), the solids and the filter loading rates and effluent TSS are higher compared with other WWTP's evaluated (Kelly Hagan, 2019)
- pH values are higher when algal bloom is in effect. In July, 2019, ponds 3,4 and 5 were dosed with Clarion 510 to help reduce the pH

Annex 1

2018 GR Watershed Tertiary WWTPs Effluent TSS

	Dundalk	Arthur	Grand Valey	Mapleton	Ayr	Caledonia	Guelph	Conestogo	Drumbo	Elmira	Elora	Fergus	Galt	Heilderberg	New Hamburg	St. George	St. Jacobs	Wellesley
January	5.0	3.2	2.6		2.6	2.8	2.0	3.8	5.7	3.5	2	3.2	8.1	2.3	4.4	2.50	3.3	6.4
February	6.3	2.5	3.5		2.3	4.0	2.0	3.1	4.5	2.6	2.8	4.5	5.4	2.4	5.1	2.00	4.0	19.9
March	6.0	3.0	3.8	2.3	2.0	3.3	2.0	2.6	5.0	2.4	1	3	4.6	2.1	3.0	2.00	9.0	2.4
April	13.3	5.3	5.6	12.0	2.1	2.0	2.0	2.0	2.3	2.0	1.8	2.5	7.4	2.7	5.2	2.00	3.9	2.1
May	15.3		7.4		3.6	2.2	2.0	2.2	3.0	2.3	2.6	2.8	6.4	2.0	3.3	3.33	3.3	2.0
June	10.1		7.0		2.0	1.8	2.0	2.0	4.8	2.1	3	3.5	7.4	2.0	15.2	3.50	2.1	2.3
July	5.5		3.0		2.0	2.0	2.0	2.1	4.8	2.2	3.8	3.4	8.0	2.0	3.7	2.00	2.0	3.1
August	2.5		2.3		2.1	1.8	2.0	2.2	6.5	2.1	4.5	3	8.0	2.0	2.1	2.50	2.1	2.0
September	2.5		2.3		2.0	2.3	2.0	2.1	4.4	2.0	6	4.5	8.5	2.0	2.3	2.00	2.0	2.0
October	2.5	3.8	2.6	5.3	2.0	2.3	2.0	2.0	21.2	2.0	4.8	4.4	7.2	2.0	3.8	3.00	2.0	2.0
November	4.0	3.8	4.0	6.0	2.0	2.0	2.1	2.0	5.0	2.2	4.8	2.8	9.5	2.1	6.9	2.00	2.1	2.0
December	2.0	3.8	3.5	5.5	2.0	2.5	3.5	2.1	4.5	2.2	3.8	5	9.5	2.0	3.3	4.00	2.0	2.0
Min	2.0	2.5	2.3	2.3	2.0	1.8	2.0	2.0	2.3	2.0	1.0	2.5	4.6	2.0	2.1	2.0	2.0	2.0
Max	15.3	5.3	7.4	12.0	3.6	4.0	3.5	3.8	21.2	3.5	6.0	5.0	9.5	2.7	15.2	4.0	9.0	19.9
Median	5.3	3.8	3.5	5.5	2.0	2.2	2.0	2.1	4.8	2.2	3.4	3.3	7.7	2.0	3.7	2.3	2.1	2.0
Average	6.3	3.6	4.0	6.2	2.2	2.4	2.1	2.3	6.0	2.3	3.4	3.6	7.5	2.1	4.8	2.6	3.2	4.0

Summary:

Min	1.0
Max	21.2
Median	2.6
Average	3.7

Grand River Conservation Authority - Memorandum

File Number: Dundalk WWTP Performance Improvement

Date: October 2019

To: Mark Anderson, Dave Chapman, Jim Ellis, and Cory Henry

From: Simion Tolnai

Re: Dundalk Lagoons - Proactive Operational Monitoring

Objective

The purpose of this memo is to review the performance, with respect to Total Suspended Solids (TSS) and Total Phosphorus (TP), at the Dundalk WWTP and provide Southgate Township staff with basic operational monitoring requirements for proactive operation of the lagoons.

Background

The Dundalk WWTP is a continuous discharge lagoon system with four facultative treatment cells and a post aeration cell. Alum is added for removal of total phosphorus, and the plant has tertiary filters prior to discharge. The facility has a nominal design capacity of 1.832 m³/d, services a population of approximately 1.559 and discharges to Foley Drain – a tributary of the Grand River. The Dundalk lagoon effluent filtration system is comprised of a two-cell fixed volume automatic backwash, granular media filter. Staff measure TSS before and after the filter in-house as well as an external lab. (Kelly Hagan, 2019)

Sampling and Testing

Table 1 summarizes effluent limits for Dundalk WWTP as set out in ECA #5657-9D9LYE, issued on December 2, 2013.

Table 1. Dundalk WWTP Effluent Limits

Effluent Parameter	Concentration Objective (mg/L)	Effluent Limits	
		Monthly Average Concentration (mg/L)	Monthly Average Loading (kg/d)
CBOD ₅	5.0	10.0	18.32
TSS	5.0	10.0	18.32
TP (T > 5°C)	0.3	0.4	0.73
TP (T < 5°C)	0.5	0.8	1.47
DO	5.0	4.0	N/A

Un-ionized Ammonia	0.05	0.1*	N/A
pH	6.0-9.5 at all times		
Samples are sent to an outside for lab analysis Sampling Frequency: Twice a month grab samples *(single sample result)			

Besides the compliance sampling required by ECA, Dundalk staff perform an additional set of sampling as per Table 2.

Table 2. Dundalk WWTP Additional Sampling and Testing

Parameter	Type of Sampling	Minimum Frequency
Raw Influent		
BOD5	Grab	Twice per month (outside lab)
TSS	Grab	Twice per month (outside lab)
TP	Grab	Twice per month (outside lab)
TKN	Grab	Twice per month (outside lab)
Final Effluent		
TSS	Grab	Twice per week (in-house)
TP	Grab	Twice per week (in-house)
e-coli	Grab	Twice per month (outside lab)
pH	Grab*	Twice per week (in-house) Twice per month (outside lab)
Temperature	Grab*	Five times per week (in-house)
D.O.	Grab*	Five times per week (in-house - monitor reading)
TAN	Grab*	Twice per week (in-house) Twice per month (outside lab)
UIA	Grab	Twice per week (in house)
TKN	Grab	Twice per month (outside Lab)
Filter influent		
CBOD5	Grab	Twice per month (outside lab)
TSS	Grab	Twice per week (in-house) Twice per month (outside lab)
TP	Grab	Twice per week (in-house) Twice per month (outside lab)

Lagoon cells		
Liquid levels measurements	NA	1-2 per week

*(for un-ionized ammonia)

TSS Testing

In terms of TSS analysis, samples are sent to an external lab, approximately twice per month. In addition the staff are testing TSS in-house using a photometric method with results in turbidity reading (NTU) which is correlated to TSS whereas the outside lab method is gravimetric. The two methods are different and must be compared using split sample. For more information regarding TSS testing, please refer to the Appendix section.

TP Testing

The effluent is analyzed for TP by an external lab. Additionally in April 2019 the Dundalk WWTP staff with GRCA support started to perform total reactive phosphorus and soluble (dissolved) reactive phosphorus testing twice per week using the in-house available HACH Phosphorus Orthophosphate (Reactive) test kit. (Simion Tolnai, 2019)

Performance

After reviewing the performance data from January 2018 to July 2019 provided by Dundalk staff, the following conclusions can be drawn:

- Dundalk lagoons system encounters difficulties in removing TSS in early spring when ice break-up occurs and the lagoon water is exposed to sunlight and the water temperature increases.
- Based on the outside lab data, if the secondary effluent TSS exceeds 10 mg/L the filters are not efficient in removing the suspended solids (Table 3)
- A spike in TSS can also be noticed in June-July when the lagoons experience algal bloom. The changes in TSS and TP concentration before and after the filters are depicted in Figures 1 and 2.
- Total phosphorus (TP) and TSS follow the same seasonal trend
- As depicted in Table 3, the two available anthracite and sand filters have a removal capability for TSS ranging from 21% to 75% with an average of 46% based on in-house data and an average reduction of 25% based on outside lab results
- Based on a previous memo (Table 4), the solids and the filter loading rates and effluent TSS are higher compared with other WWTP's evaluated (Kelly Hagan, 2019)
- pH values are higher when algal bloom is in effect. In July, 2019, ponds 3,4 and 5 were dosed with Clarion 510 to help reduce the pH

Table 3. TSS and TP concentrations before and after filtration

	Max pH	TSS						TP		
		Before Filter (In-house)	After filter (In-house)	%	Before Filter (Outside lab)	After Filter (Outside lab)	% Rem.	Before Filter (Outside lab)	After Filter (Outside lab)	%
Jan-18	7.6	14.2	8	44%		5			0.05	
Feb-18	7.7	15.3	9.9	35%	8	6	25%	0.1	0.09	10%
Mar-18	8.2	12.3	9.2	25%	7	6	14%	0.11	0.09	18%
Apr-18	8.3	22.3	17.6	21%	16	13	19%	0.07	0.08	-14%
May-18	7.2	18.5	14.5	22%	19	15	21%	0.09	0.11	-22%
Jun-18	8.0	17.7	11.8	33%	14	10	29%	0.18	0.08	56%
Jul-18	7.3	11.5	5.6	51%	9	6	33%	0.13	0.12	8%
Aug-18	7.2	8.6	3.6	58%	4	3	25%	0.23	0.15	35%
Sep-18	7.7	5.4	1.9	65%	26	3	88%	0.4	0.2	50%
Oct-18	8.3	8.2	2.3	72%	3	3	0%	0.14	0.13	7%
Nov-18	8.3	9.3	2.3	75%	6	4	33%	0.13	0.05	62%
Dec-18	8.3	7.9	3.3	58%	2	2	0%	0.1	0.08	20%
Jan-19	8.2	11.7	6.2	47%	8	3	63%	0.36	0.33	8%
Feb-19	8.0	23	14.4	37%	11	16	-45%	0.86	0.78	9%
Mar-19	7.4	24.2	14.7	39%	10	10	0%	1.26	1.06	16%
Apr-19	7.7	15.5	9.9	36%	8	14	-75%	0.66	0.52	21%
May-19	8.2	13.3	6.6	50%	12	13	-8%	0.14	0.1	29%
Jun-19	9.0	4.8	2.4	50%	8	3	63%	0.18	0.13	28%
Jul-19	6.3	12	5	58%	3	3	0%	0.22	0.23	-5%
Min	6.3	4.80	1.90	21%	2.00	2.00	0%	0.07	0.05	29%
Max	9.0	24.20	17.60	75%	26.00	16.00	88%	1.26	1.06	16%
Average	7.8	13.46	7.85	46%	9.67	7.26	25%	0.30	0.23	23%

Table 4. Summary of 2018 filter performance data (Dundalk, Fergus, Caledonia and Hagersville)

WWTP	2018 ADF (m ³ /d)	Solids loading rate (kg/m ²)	Filter Loading Rate (m ³ /m ² /d)	Average Secondary Effluent TSS (mg/L)	Average Final Effluent TSS (mg/L)	% removal
Dundalk	1,107	0.84	65.27	12.82	7.59	41%
Fergus*	4,592	0.46	27.60	16.63	6.93	58%
Caledonia	3,611	0.12	18.96	6.07	2.30	62%
Hagersville	2,401	0.21	16.67	12.72	2.78	78%

* Fergus data only available from Jan-Mar 2018

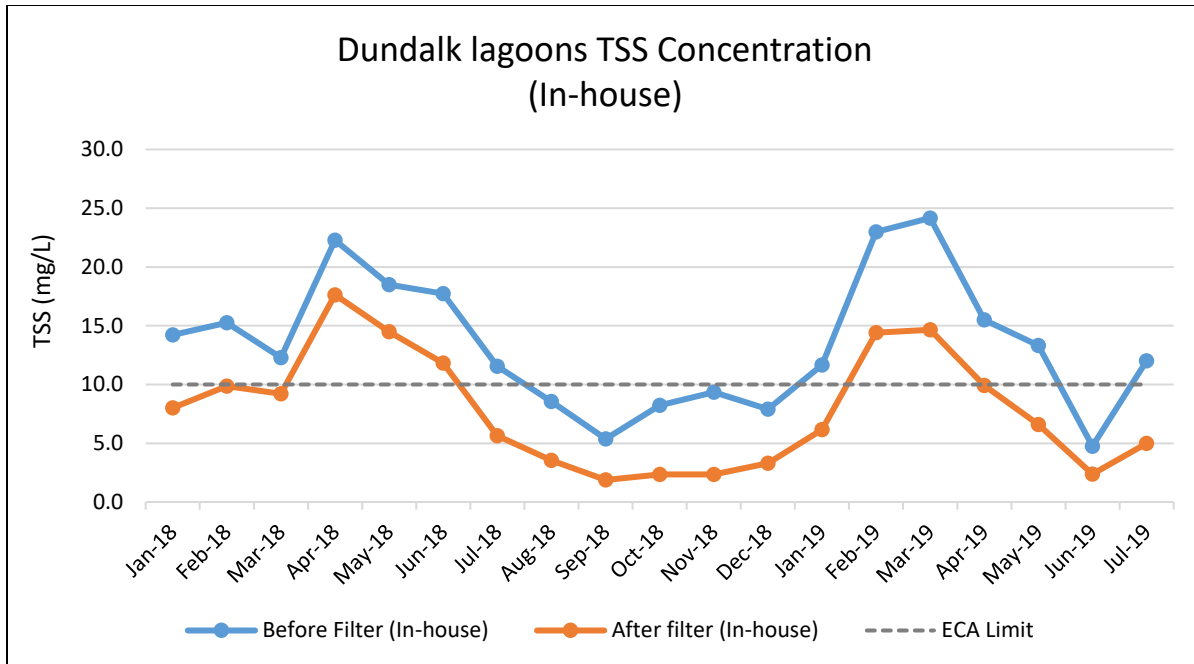


Figure 1. Dundalk WWTP Effluent TSS before and after filters (January 2018 – July 2019)

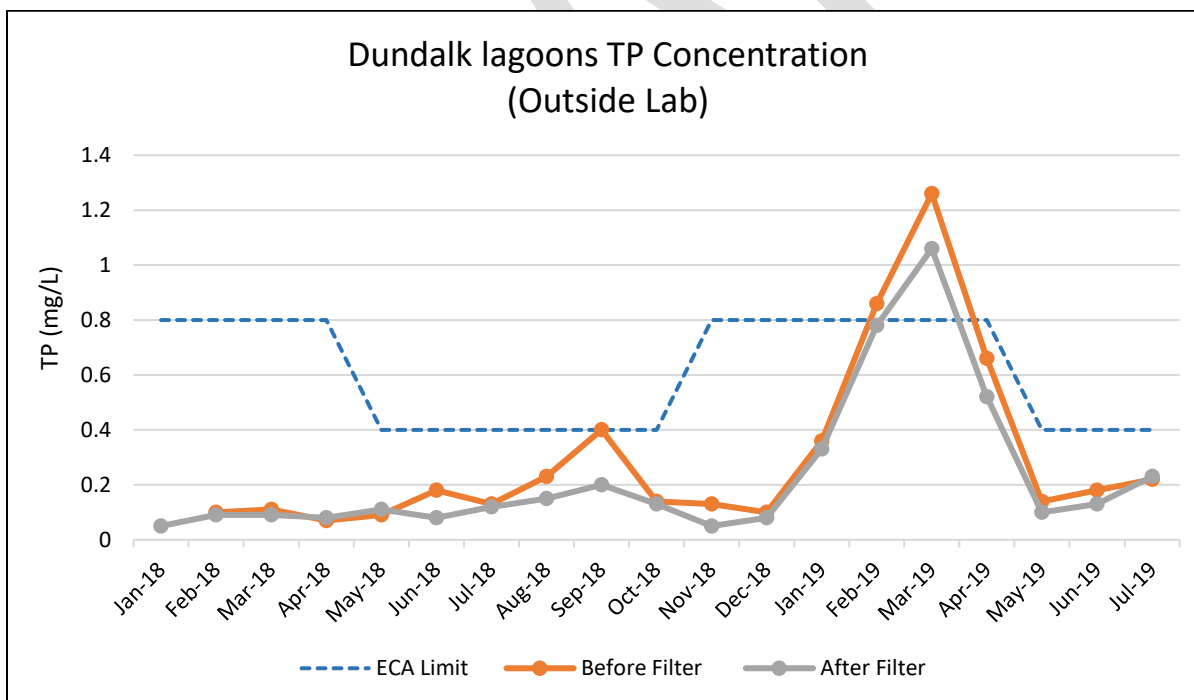


Figure 2. 2018 Dundalk WWTP Effluent TP before and after filters (January 2018 – July 2019)

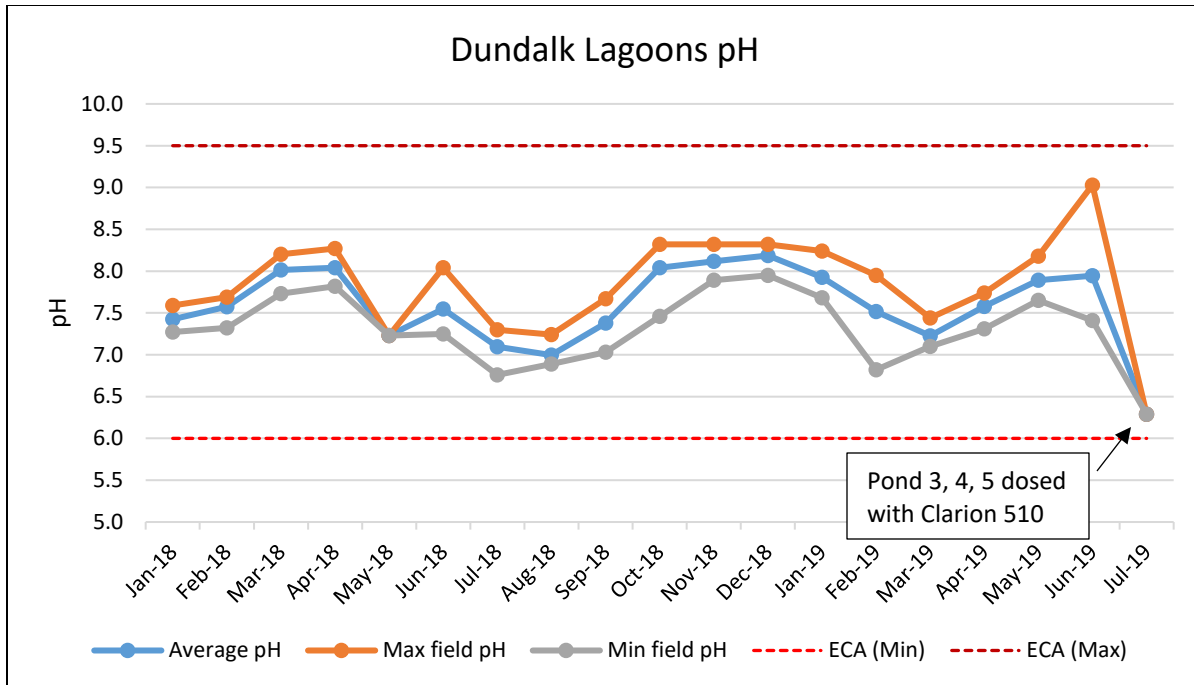


Figure 3. Dundalk WWTP Effluent pH filters (January 2018 – July 2019)

Observations

- As depicted in Figure 1, the TSS exceeded the ECA limit of 10 mg/L in both springs of 2018 and 2019
- TSS lab results are available for the operations staff a week or more after samples are sent to the external lab, resulting in difficulties to adjust plant operations accordingly
- In-house TSS testing procedure is not accurate but can offer the operators valuable trending information
- Figure 2 shows that in 2018 TP values exceeded the ECA limit of 0.8 mg/L in March, 2019
- In house dissolved (soluble) reactive phosphorus testing will help operators to adjust the alum dosing in timely manner

Recommendations

Dundalk WWTP staff should adopt a proactive strategy in order to keep the effluent discharges in within ECA limits by performing in-house testing as follows:

- In addition to TSS lab testing, TSS should be tested in house at least twice a week using the available photometric method and calibrate the in-house TSS method with a gravimetric test.

- For the purpose of establishing a reasonable TSS factor (TSS_i), in-house testing should be performed on the same sample as the sample sent to the external lab
- Southgate Township should budget and purchase a gravimetric scale and work with GRCA staff to improve the accuracy of in-house TSS measurements.
- Continue the in-house total and dissolved reactive phosphorus testing especially in spring. TP values tend to be higher in colder season, particularly in the months of January to March and also in June-July when the algae bloom is in effect
- Record in-house and outside lab data into the spreadsheets and review the graphs for pH, TSS and TP trending regularly
- Use the in-house TSS and TP data to adjust WWTP operations
- Follow the Q&M Manual regarding the actions required when TSS loading to the filters are higher (p.17) (Southgate Township , 2015)

Bibliography

- Kelly Hagan. (2019). Dundalk Lagoons - Lab vs In-house TSS comparison. *Memorandum*. Cambridge: Grand River Conservation Authority.
- Kelly Hagan. (2019). *Filter Performance - Dundalk Lagoons*. Cambridge: Grand River Conservation Authority - Memorandum.
- Metcalf & Eddy / AECOM. (2014). *Wastewater Engineering: Treatment and Resource Recovery, Fifth Edition*. New York: McGraw-Hill Education.
- Simion Tolnai. (2019). *Dundalk lagoons - Alum Dosing Special Study*. Cambridge: Grand River Conservation Authority.
- Southgate Township . (2015). Dundalk Sewage Treatment Plant Operating and Maintenance Manual.

Appendix

The current in-house test method for TSS is a photometric method where a 500mL sample is blended in a blender and corresponding TSS is read from a Hach kit in NTUs. The outside lab testing is performed using a gravimetric method. In order to compare the two methods, the staff need to use a split sample.

A previous special study performed by GRCA staff, compared in-house and lab samples taken on the same day. The results revealed that in-house TSS results are higher than lab results, on average two times for TSS before filters and 1.5 times higher after the filters. (Kelly Hagan, 2019)

In general, there is no relationship between turbidity and the concentration of total suspended solids in untreated wastewater. In settled and filtered secondary effluent there is a reasonable relationship between turbidity and total suspended solids that can be calculated as follows:

$$\text{TSS (mg/L)} \approx (\text{TSS}_f)(T)$$

TSS = total suspended solids

TSS_f = factor used to convert turbidity readings to total suspended solids

(mg TSS/L)/NTU

T = Turbidity (NTU)

(Metcalf & Eddy / AECOM, 2014)

Filter Bed Expansion Special Study

Study Details

Author: Simion Tolnai & Mark Anderson

Date: Jul 31, 2019

Location: Dundalk WWTP

Hypothesis

The purpose of this special study is to measure the filter bed expansion during the backwash and determine if the expansion is sufficient. Bed fluidization is an important factor in filter backwash ability to remove dirt from media.

Approach

- Construct a bed expansion measuring device (modified Secchi disc)
- Determine the total depth of the sand & anthracite media (fluidizable media)
- Prior to backwash: use the bed expansion measuring tool to measure the distance from the media and a fixed point to the top of the media (filter)
- During the backwash: lower the disc again until disappears into fluidized anthracite and measure the distance from the reference point.
- Calculate the bed expansion by subtracting the measurement taken during the high rate backwash from the measurement recorded before backwash

Resources

The actual media depth measurements before calculating the percent expansion, measurement tape, bed expansion measuring tool (modified Secchi disk), flash light, marker

Duration of study

The study will take place over one backwash cycle

Expected results

The bed expansion test can be a useful tool in helping the operator determine the proper backwash rate. If the bed expansion is insufficient, the backwash flowrate is too low.

Based on the American Waterworks Association (AWWA), the filter bed expansion during the maximum backwash rate are expected to be between 15 and 30%. (Greg McGlohorn, 2003)

If bed expansion is too low, the filter media will not be properly cleaned, on the other hand if the expansion is too high, media will be lost over the weirs.

Summary

Table 1. Bed Expansion Worksheet

Parameter	Result	Units
Filter Number	#2	NA
Date of Test	July 31, 2019	NA
Time	11:30	NA
Evaluator	Grayson Hannivan (Township of Southgate), Mark Anderson and Simion Tolnai (GRCA)	NA
Depth to Top of Media before Backwash	217	cm
Depth to Top of Media during Backwash	214	cm
Total depth of Fluidizable Media (sand & anthracite)	62.5	cm
% Bed Expansion	5	%
Water Temperature	23.2	C°
Backwash Control Valve (% Open)	?	%
(Greg McGlohorn, 2003)		

Calculations

Calculate the bed expansion as a percentage of the total bed using the following equations:

EQ1:

$$\mathbf{Bed\ expansion\ (cm) = bed\ size\ before\ BW\ (cm) - bed\ size\ during\ BW\ (cm)}$$

$$Bed\ expansion\ (cm) = 217(cm) - 214\ (cm)$$

$$Bed\ expansion = 3\ (cm)$$

EQ2:

$$\mathbf{Bed\ Expansion\ (\%) = \frac{bed\ expansion\ (cm)}{total\ depth\ of\ sand\ \&\ anthracite\ (cm)} \times 100\%}$$

$$Bed\ Expansion\ (\%) = \frac{3\ (cm)}{62.5\ (cm)} \times 100\%$$

$$Bed\ Expansion = 5\%$$

Conclusions

The bed expansion was calculated at 5%, below of recommended (15-30%). The result was not conclusive due to a series of challenges met during the special study as follow:

- The total depth of sand & anthracite was measured at the site visit by penetrating the fluidizable media with a metal rod until the gravel layer was met. A more accurate measurement needs to be performed. This can be accomplished by digging down through the media and measuring the media depths. Required equipment are ladder, piece of plywood to stand on, shovel, measuring tape.
- Measuring the bed expansion was challenging due to dirty water. During the measurement the white disk attached at the end of the measuring rod was not visible, therefore the depth of the media was determined by lowering the rod until some resistance was met. Typically

measurement of bed expansion is made when most of the turbidity has cleared during backwash. A Secchi disk helps determine bed expansion. Lower disk until it is no longer visible.

- May need to raise and lower a few times to find interface of expanded media.
- Other options for bed expansion measurement tools need to be investigated and used for the next evaluations
- The density of water changes with temperature affecting filtration rate therefore, it is expected that filter production will be affected by changes in seasonal temperatures
- The quantity of the backwash water required to achieve the same bed expansion will increase with the temperature
- If the filter is backwashed at 10°C (in the winter), the required backwash rate is approximately 75% of the backwash rate required during the summer when the water is 25°C. (Greg McGlohorn, 2003)

Implementation

- It is recommended to perform the bed expansion measurement for both filters over the summer and winter. This special study will be repeated at the next site visit and also by the operators using different approaches in order to get more reliable results.
- At Dundalk WWTP, operators should consider studies to determine effective backwash rates at different water temperatures.

References

Greg McGlohorn. (2003, December). Filter Assessment Manual. South Carolina, USA.

Filter Visual Backwash Observation Special Study

Study Details

Author: Simion Tolnai & Mark Anderson

Date: July 31, 2019

Location: Dundalk WWTP

Hypothesis

The purpose of this special study is to visually assess the filter backwash and identify any potential problems that may be exposed during the backwash process. This special study is part of a broader filter surveillance program directed to identify potential factors with impact on filter performance.

Approach

- Develop a check list with potential problems to be observed throughout the backwash cycle
- Initiate a filter backwash
- Record observations
- Identify problems that might impact the filter effluent quality and rank

Resources

One filter backwash cycle initiation, flash light, camera and measuring tape

Duration of study

The study will take place over one backwash cycle for each of the two filters

Expected results

The results of this special study will help narrow down the potential problems with the filter operation and will focus operator's attention in addressing these issues.

Summary

Table 1. Checklist of the observed problems during a backwash cycle

#.	Visual Back Wash (BW) Observations	Potential Causes	Yes/No
1.	At the beginning of BW cycle: water come up through the filter media uneven and violent manner?	Filter boils? Air entrainment? High flow rate?	The BW was On when the visual inspection started
2.	Is the BW flow gradually increased to the maximum rate?	Backwash flow rate	Yes
3.	Massive air surges occurring during BW, especially at the beginning?	Air binding, air entrapment in the piping?	The BW was On when the visual inspection started
4.	Zones that do not appear to be cleaned thoroughly?	Media dead zones? Plugged underdrains? Inadequate cleaning of media?	No
5.	Are the BW troughs submerged? It should be at least 2 in freeboard between water level in the filter and water level in the trough during BW	Submerged BW troughs/displaced media	No
6.	Is the media being lost over the trough during backwash?	Media loss? Backwash rate too high?	Small quantity of sand have been spotted

7.	Does the media and the BW wastewater look dirty after the BW is complete?	Media/BW wastewater appearance? Backwash cycle inadequate?	Very hard to determine (wastewater) Monitor turbidity
(Greg McGlohorn, 2003)			

Conclusions

The potential problems identified during the backwash cycle observations are the following:

- The BW was automatically initiated (air scour on) at the time of arrival. It takes at least 45 minutes from the end of a cycle to initiate a new one. The filter effluent reservoir need to be filled with clean water, at least 50 m³ required for each BW cycle
- Small quantity of sand spotted in the trough, probably from previous BW cycles. Nothing abnormal during the GRCA BW visual inspection
- The filter influent enters through a 300 mm pipe from the flocculation tank.
- Flow can be manually split by operating the two butterfly valves. No option for auto operation available
- When one of the two filters is backwashed, part of the dirty water is hydraulically pushed to the other filter via split influent pipe (the butterfly valves are open during normal operation)

Implementation

It is recommended to perform a visual backwash observation for both filters and record the identified problems. Based on the recorded observations during the backwash the following actions are recommended:

- Operators will follow the backwash observation checklist (Table 1) in order to identify any possible abnormalities early on
- Napier-Reid will need to update the backwash program with the new information regarding backwash cycle
- Ask Napier-Reid for training in regards of PLC operation in order to have more control in adjusting the backwash cycle

- Identify ways to adjust backwash rate if necessary (winter/summer)

References

Greg McGlohorn. (2003, December). Filter Assessment Manual. South Carolina, USA.

Grand River Conservation Authority - Memorandum

File Number: Dundalk lagoons

Date: July 31, 2019

To: Jim Ellis, Cory Henry, Mark Anderson and Dave Chapman

From: Simion Tolnai

Re: The Influence of seasonal changes in temperature on lagoon performance

Objective

The purpose of this memo is to review Dundalk WWTP data and find trends related to seasonal changes and performance of the plant.

Background

The Dundalk WWTP is a continuous discharge lagoon system with four facultative treatment cells and a post aeration cell. Alum is added for removal of total phosphorus for raw influent and prior to tertiary filtration. The facility has a nominal design capacity of 1,832 m³/d, services a population of approximately 1,558 and discharges to Foley Drain - a tributary of the Grand River (Kelly Hagan, 2019). Table 1 summarizes effluent limits for the Dundalk WWTP as set out in ECA #5657-9D9LYE, issued December 2, 2013.

Table 1 - Dundalk WWTP Effluent Limits

Effluent Parameter	Concentration Objective (mg/L)	Effluent Limits	
		Monthly Average Concentration (mg/L)	Monthly Average Loading (kg/d)
cBOD ₅	5.0	10.0	18.32
TSS	5.0	10.0	18.32
TP (T> 5°C)	0.3	0.4	0.73
TP (T<5°C)	0.5	0.8	1.47
DO	5.0	4.0	N/A
Un-ionized Ammonia	0.05	0.1*	N/A

Sampling Frequency: Twice a month grab samples
 *(single sample result) (Kelly Hagan, 2019)

Process Data

Dundalk lagoons staff have provided the plant performance data up to July 2019, however due to lack of consistent data for cell # 4 and aeration cell in 2018 and 2019, average monthly data for temperature, pH and TP from January 2016 – December 2017 have been considered.

Observations

Figure 1 shows the trend of TP concentration in cell # 4 and aeration cell, the last two stages of treatment before final alum addition and tertiary filtration and the correlation to seasonal changes in temperature.

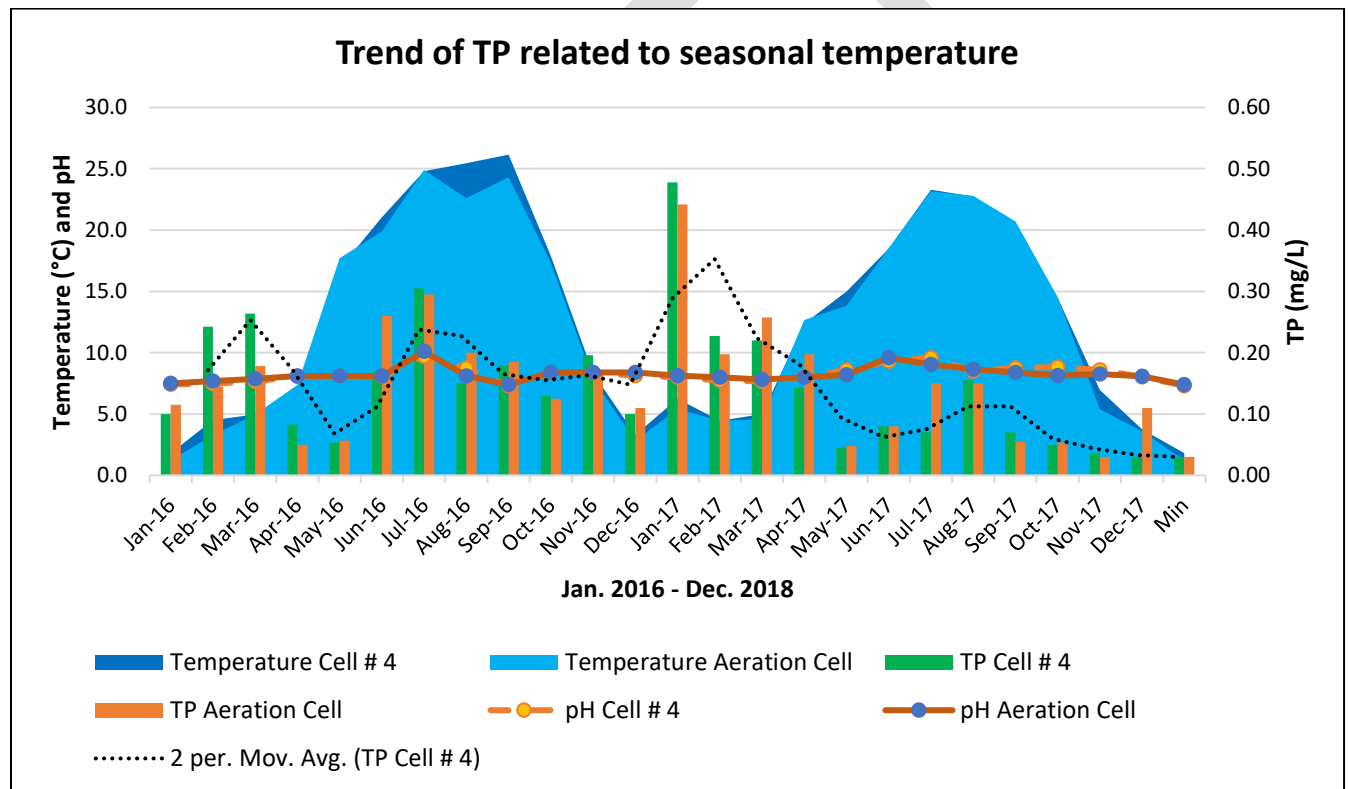


Figure 1. Dundalk Lagoons – Trend of TP related to seasonal changes in temperature

Looking at the trends from Figure 1 and the values summarized in Table 2 the following observations can be made:

- High TP concentrations are consistent with colder season, particularly the months of January to March, period where the TP concentrations can reach a high of 0.48 mg/L. slightly higher TP concentrations are also recorded over the months of June-July when the algae bloom is in effect
- pH values are relatively consistent over the year-period with an average of 8.3 in both, cell # 4 and aeration cell with the exception of July
- pH values of 9.7 (cell # 4) and 10.1 (aeration cell) are recorded in the month of July in both years which can be associated to algae bloom
- Temperature in the lagoon system fluctuates with the outside environment, recorded values are ranging from a low of 1.3 (aeration cell) in winter to high of 26.2 in the summer

With respect to the graphs from Figure 2, representing effluent data from July 2018 to June 2019, the following comments are applicable:

- TP concentration in the final influent and final effluent follow the same pattern of higher values in colder season, reaching a peak value of 1.26 mg/L for final influent before the final alum addition and filtration (March 2019)
- pH value is higher in the month of June consistent to algae blooms

Recommendations

- Special studies by the operators facilitated by GRCA to adjust the alum dosing and the filtration rate according to the seasonal fluctuations in temperature in order to meet the effluent limits summarized in Table 1 (Southgate Township, 2015)
- The water temperature will have a great impact on the filter media in terms of specific gravity, therefore the quantity of water required for backwash will need to be adjusted to address the necessary bed expansion of 15-30% (Greg McGlohorn, 2003). For more information regarding the bed expansion, please refer to the Filter Bed Expansion Special Study (Simion Tolnai, 2019)

- Review and determine the “actual” backwash rate
- Operators with support, develop operational guidelines for chemical addition for phosphorous removal and filter operation based on the special study results

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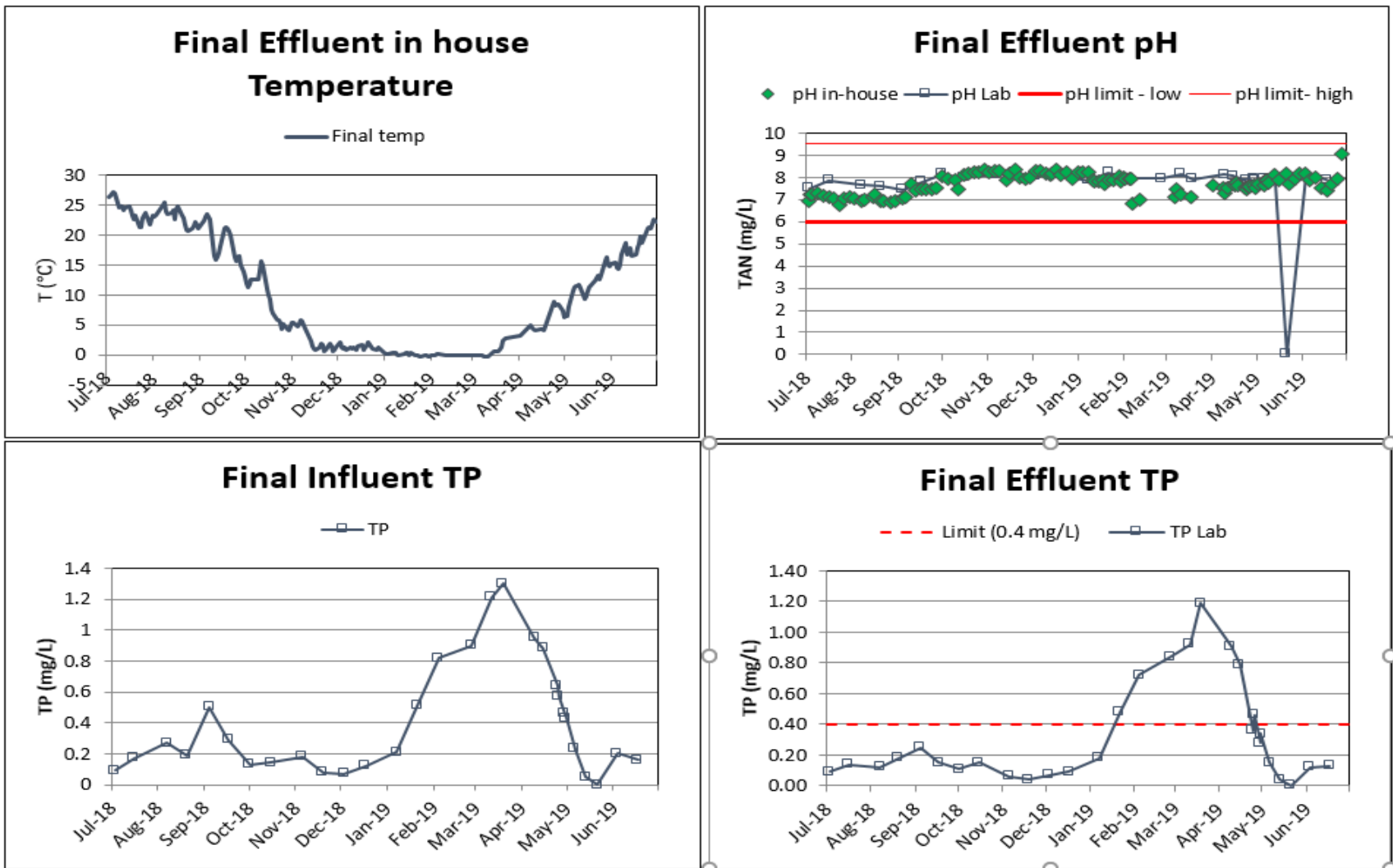


Figure 2. Temperature, pH and TP trend in final effluent (July 2018 – June 2019)

Table 2. TP trend related to seasonal temperature (January 2016 – December 2017)

Date	Temperature Cell # 4	pH Cell # 4	TP Cell # 4	Temperature Aeration Cell	pH Aeration Cell	TP Aeration Cell
Jan-16	1.8	7.4	0.10	1.3	7.5	0.12
Feb-16	4.5	7.5	0.24	3.3	7.7	0.15
Mar-16	5.0	7.7	0.26	5.0	7.9	0.18
Apr-16	7.1	8.1	0.08	7.4	8.1	0.05
May-16	16.9	8.1	0.05	17.7	8.1	0.06
Jun-16	21.1	8.1	0.17	19.9	8.1	0.26
Jul-16	24.8	9.7	0.31	24.9	10.1	0.30
Aug-16	25.5	8.8	0.15	22.6	8.1	0.20
Sep-16	26.2	7.3	0.18	24.3	7.4	0.19
Oct-16	17.9	8.4	0.13	17.4	8.4	0.13
Nov-16	8.3	8.4	0.20	7.9	8.4	0.17
Dec-16	3.3	8.1	0.10	2.8	8.4	0.11
Jan-17	6.2	8.0	0.48	5.4	8.1	0.44
Feb-17	4.5	7.7	0.23	4.5	8.0	0.20
Mar-17	5.0	7.7	0.22	4.6	7.8	0.26
Apr-17	12.4	8.1	0.14	12.7	8.0	0.20
May-17	15.0	8.6	0.05	13.9	8.2	0.05
Jun-17	18.5	9.3	0.08	18.6	9.6	0.08
Jul-17	23.3	9.6	0.07	23.2	9.1	0.15
Aug-17	22.8	8.5	0.16	22.8	8.7	0.15
Sep-17	20.4	8.8	0.07	20.7	8.4	0.06
Oct-17	14.5	8.8	0.05	14.5	8.1	0.05
Nov-17	7.0	8.6	0.04	5.4	8.3	0.03
Dec-17	3.7	8.0	0.03	3.6	8.1	0.11
Min	1.8	7.3	0.03	1.3	7.4	0.03
Max	26.2	9.7	0.48	24.9	10.1	0.44
Average	13.1	8.3	0.1	12.7	8.3	0.2

References

Greg McGlohorn. (2003, December). Filter Assessment Manual. South Carolina, USA.

Kelly Hagan. (2019). *Filter Performance - Dundalk Lagoons*. Cambridge: Grand River Conservation Authority - Memorandum.

Simion Tolnai. (2019). *Filter Bed Expansion Special Study - Dundalk Lagoons*. Cambridge: Grand River Conservation Authority.

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Appendix I - Criteria for Evaluating Archeological Potential

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
 - the main project area
 - temporary storage
 - staging and working areas
 - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

Note: By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

What to do if you:

- **find an archaeological resource**

If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

Project or Property Name
Dundalk Wastewater Treatment Facility

Project or Property Location (upper and lower or single tier municipality)
Township of Southgate

Proponent Name
Township of Southgate

Proponent Contact Information
(519) 843-3920

Screening Questions

1. Is there a pre-approved screening checklist, methodology or process in place? Yes No

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS? Yes No

If Yes, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

3. Are there known archaeological sites on or within 300 metres of the property (or the project area)? Yes No

4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)? Yes No

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)? Yes No

6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)? Yes No

7. Has the property (or project area) been recognized for its cultural heritage value? Yes No

If Yes to any of the above questions (3 to 7), do **not** complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

If No, continue to question 8.

8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance? Yes No

If Yes to the preceding question, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

If No, continue to question 9.

9. Are there present or past water sources within 300 metres of the property (or project area)? Yes No

If Yes, an archaeological assessment is required.

If No, continue to question 10.

10. Is there evidence of two or more of the following on the property (or project area)? Yes No

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

If Yes, an archaeological assessment is required.

If No, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
 - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

In this context, the following definitions apply:

- **consultant archaeologist** means, as defined in Ontario regulation as an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. In Ontario, these people also are required to hold a valid professional archaeological licence issued by the Ministry of Tourism, Culture and Sport.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place for identifying archaeological potential, including:

- one prepared and adopted by the municipality e.g., archaeological management plan
- an environmental assessment process e.g., screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s. B.2.]

2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?

Respond 'yes' to this question, if all of the following are true:

- an archaeological assessment report has been prepared and is in compliance with MTCS requirements
 - a letter has been sent by MTCS to the licensed archaeologist confirming that MTCS has added the report to the Ontario Public Register of Archaeological Reports (Register)
- the report states that there are no concerns regarding impacts to archaeological sites

Otherwise, if an assessment has been completed and deemed compliant by the MTCS, and the ministry recommends further archaeological assessment work, this work will need to be completed.

For more information about archaeological assessments, contact:

- approval authority
- proponent
- consultant archaeologist
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. Are there known archaeological sites on or within 300 metres of the property (or project area)?

MTCS maintains a database of archaeological sites reported to the ministry.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property?

Check with:

- Aboriginal communities in your area
- local municipal staff

They may have information about archaeological sites that are not included in MTCS' database.

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or property area)?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

7. Has the property (or project area) been recognized for its cultural heritage value?

There is a strong chance there may be archaeological resources on your property (or immediate area) if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- your municipality
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)
 - an archaeological site (Part VI)
- subject to:
 - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
 - a notice of intention to designate (Part IV)
 - a heritage conservation district study area by-law (Part V) of the OHA
- listed on:
 - a municipal register or inventory of heritage properties
 - Ontario government's list of provincial heritage properties
 - Federal government's list of federal heritage buildings
- part of a:
 - National Historic Site
 - UNESCO World Heritage Site
- designated under:
 - *Heritage Railway Station Protection Act*
 - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

Part VI – Archaeological Sites

Includes five sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990 (Archaeological Sites) and 3 marine archaeological sites prescribed under Ontario Regulation 11/06.

For more information, check [Regulation 875](#) and [Ontario Regulation 11/06](#).

8. Has the entire property (or project area) been subjected to recent extensive and intensive ground disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- major landscaping – involving grading below topsoil
- building footprints and associated construction area
 - where the building has deep foundations or a basement
- infrastructure development such as:
 - sewer lines
 - gas lines
 - underground hydro lines
 - roads
 - any associated trenches, ditches, interchanges. **Note:** this applies only to the excavated part of the right-of-way; the remainder of the right-of-way or corridor may not have been impacted.

A ground disturbance does **not** include:

- agricultural cultivation
- gardening
- landscaping

Site visits

You can typically get this information from a site visit. In that case, please document your visit in the process (e.g., report) with:

- photographs
- maps
- detailed descriptions

If a disturbance isn't clear from a site visit or other research, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment.

9. Are there present or past water bodies within 300 metres of the property (or project area)?

Water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

Present

- Water bodies:
 - primary - lakes, rivers, streams, creeks
 - secondary - springs, marshes, swamps and intermittent streams and creeks
- accessible or inaccessible shoreline, for example:
 - high bluffs
 - swamps
 - marsh fields by the edge of a lake
 - sandbars stretching into marsh

Water bodies not included:

- man-made water bodies, for example:
 - temporary channels for surface drainage
 - rock chutes and spillways
 - temporarily ponded areas that are normally farmed
 - dugout ponds
- artificial bodies of water intended for storage, treatment or recirculation of:
 - runoff from farm animal yards
 - manure storage facilities
 - sites and outdoor confinement areas

Past

Features indicating past water bodies:

- raised sand or gravel beach ridges – can indicate glacial lake shorelines
- clear dip in the land – can indicate an old river or stream
- shorelines of drained lakes or marshes
- cobble beaches

You can get information about water bodies through:

- a site visit
- aerial photographs
- 1:10,000 scale [Ontario Base Maps](#) - or [equally detailed and scaled maps](#).

10. Is there evidence of two or more of the following on the property (or project area)?

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

• **Elevated topography**

Higher ground and elevated positions - surrounded by low or level topography - often indicate past settlement and land use.

Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands, or other such features are a strong indication of archaeological potential.

Find out if your property or project area has elevated topography, through:

- site inspection
- aerial photographs
- [topographical maps](#)

• **Pockets of well-drained sandy soil, especially within areas of heavy soil or rocky ground**

Sandy, well-drained soil - in areas characterized by heavy soil or rocky ground - may indicate archaeological potential

Find out if your property or project area has sandy soil through:

- site inspection
- [soil survey reports](#)

- **Distinctive land formations**

Distinctive land formations include – but are not limited to:

- waterfalls
- rock outcrops
- rock faces
- caverns
- mounds, etc.

They were often important to past inhabitants as special or sacred places. The following sites may be present – or close to – these formations:

- burials
- structures
- offerings
- rock paintings or carvings

Find out if your property or project areas has a distinctive land formation through:

- a site visit
- aerial photographs
- 1:10,000 scale [Ontario Base Maps](#) - or [equally detailed and scaled maps](#).

- **Resource extraction areas**

The following resources were collected in these extraction areas:

- food or medicinal plants e.g., migratory routes, spawning areas, prairie
- scarce raw materials e.g., quartz, copper, ochre or outcrops of chert
- resources associated with early historic industry e.g., fur trade, logging, prospecting, mining

Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Early historic settlement**

Early Euro-Canadian settlement include – but are not limited to:

- early military or pioneer settlement e.g., pioneer homesteads, isolated cabins, farmstead complexes
- early wharf or dock complexes
- pioneers churches and early cemeteries

For more information, see below – under the early historic transportation routes.

- **Early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

For more information, see:

- historical maps and/or historical atlases
 - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
 - [Archives of Ontario](#) holds a large collection of historical maps and historical atlases
 - digital versions of historic atlases are available on the [Canadian County Atlas Digital Project](#)
- commemorative markers or plaques such as local, [provincial](#) or [federal](#) agencies
- [municipal heritage committee](#) or other [local heritage organizations](#)
 - for information on early historic settlements or landscape features (e.g., fences, mill races, etc.)
 - for information on commemorative markers or plaques