



Board of Directors - Notice of Meeting
September 16, 2021 Time: 9:30 am
Held Remotely via Zoom

Tentative Agenda

- Chair's Remarks
- 1. Adoption of Agenda
- 2. Declaration of Pecuniary Interests
- 3. In-Camera
- 4. Minutes
 - 4.1 June 24, 2021 Board of Director's Minutes
 - 4.2 August 20, 2021 Special Meeting Minutes
- 5. General Manager's Report
 - 5.1 GM's Report
 - 5.2 CA Act Changes and Regulations under Bill 229 Workplan
 - 5.3 Governance Accountability and Transparency Initiative
- 6. Chair & Conservation Ontario Report
 - 6.1 June 21, 2021 Conservation Ontario Council Meeting Minutes
- 7. Consent Items (Informational)*
 - 7.1 Adoption of Consent Agenda
 - (a) Business Arising
 - (b) Conservation Area Update
 - (c) Coldstream Conservation Area End of Lease
 - (d) Current Watershed Conditions
 - (e) Engineering and Design Plan for Management of Contaminated Sediment – Update
 - (f) Healthy Watersheds Program
 - (g) Healthy Lake Huron Program
 - (h) Regulations Activity Summary
 - (i) Planning Activity Summary
 - (j) Revenue and Expenditures
 - (k) Disbursements
 - (l) General Levy Receipts
 - (m) Investments
 - (n) JHSC Minutes
 - (o) Communications Update
 - (p) St. Clair River AOC Update
- 8. Land Reports
 - 8.1 Wawanosh Wetlands Invasive Phragmites Plan
 - 8.2 Shetland Conservation Area Lease
 - 8.3 Campbell House Museum
 - 8.4 Conservation Area Funding History
 - 8.5 Highland Glen Boat Ramp History
 - 8.6 Highland Glen Boat Ramp Repair
 - 8.7 McKeough Upstream Land 105
- 9. Planning and Regulations Reports
 - 9.1 Fee Appeal

- 9.2 Violation Resolution
- 10. Finance & Administration Reports
 - 10.1 2022 Planning and Regulations Fees
 - 10.2 2022 Conservation Area Fees
 - 10.3 2022 Draft Budget
- 11. Water Resources Reports
 - 11.1 Disaster Mitigation and Adaptation Fund – Intake 2
- 12. Board Correspondence
(none)
- 13. New Business
- 14. Adjournment

Additional Items:
News Clippings

*The Consent Items consist of reports for informational purposes only and will be submitted for Board Approval within one motion. If possible, we request that you please notify Ashley Fletcher in advance to have any item(s) removed from the Consent Items. This will allow staff time to prepare for discussion on the item(s). It should be noted that an item should not be pulled from the consent agenda for a clarification question only. Questions should be brought to the attention of Ashley Fletcher in advance of the Board meeting if possible.

September 16, 2021

Disclaimer: Board members, staff, guests and members of the public are advised that the SCRCA Board meetings are being video/audio recorded, and will be posted to the Authority's Facebook/ web site along with the official written minutes. As such, comments and opinions expressed may be published and any comments expressed by individual Board members, guests and the general public are their own, and do not represent the opinions or comments of the Full Authority and/or the SCRCA Board of Directors. The recorded video of the Full Authority meeting is not considered the official record of that meeting. The official record of the Authority meeting shall consist solely of the Minutes approved by the Board of Directors.

Board of Directors Proposed Resolutions

(Roll call)

Chair's Remarks

1. **Moved by:** **Seconded by:**
That the Board of Directors adopts the agenda for the meeting as presented.
2. It is requested that each Director declare a conflict of interest at the appropriate time, on any item within this agenda in that a Director may have pecuniary interest.
- 3.1 **Moved by:** **Seconded by:**
That the Board of Directors move in-camera at _____ a.m. to discuss personnel matters with Jessica Barnes, City of Sarnia; Chris Durand, Manager of IT and Ashley Fletcher, Administrative Assistant/Board Coordinator remaining present.
- 3.2 **Moved by:** **Seconded by:**
That the Board of Directors rise and report at _____ a.m.
- 4.1 **Moved by:** **Seconded by:**
That the minutes of the Board of Directors meeting, held June 24, 2021, be approved as distributed.
- 4.2 **Moved by:** **Seconded by:**
That the minutes of the Board of Directors special meeting, held August 20, 2021, be approved as distributed.
- 5.1 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the General Manager's report, dated September 8, 2021.

- 5.2 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the report, dated September 8, 2021 outlining the draft work plan to bring the Authority into compliance with the updated Conservation Authorities Act under Bill 229.
- 5.3 **Moved by:** **Seconded by:**
Whereas the provincial government has passed legislative amendments related to the governance of Conservation Authorities; and whereas the Conservation Authorities remain committed to fulfilling accountable and transparent governance; therefore, be it resolved that the St. Clair Region Conservation Authority endorse the three key actions developed by the Conservation Ontario Steering Committee to update CA Administrative By-laws, to report proactively on priorities, and to promote/demonstrate results; and that Authority staff be directed to work with Conservation Ontario to implement these actions and to identify additional improvements and best management practices.
6. **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the minutes of the Conservation Ontario Council meeting, held remotely on June 21, 2021.

Consent Items Motion

- 7.1 **Moved by:** **Seconded by:**
That the Board of Directors approves the consent agenda and endorses the recommendations accompanying Items 7.1 a - 7.1 p.
- 7.1 (a) *That the Board of Directors acknowledges the updates on business arising from the June 24, 2021 meeting.*
- 7.1 (b) *That the Board of Directors acknowledges the Conservation Areas Report dated August 12, 2021.*
- 7.1 (c) *That the Board of Directors acknowledges the report dated July 7, 2021 on the end of the Coldstream Conservation Area lease agreement with the Municipality of Middlesex Centre.*
- 7.1 (d) *That the Board of Directors acknowledges the report dated September 1, 2021, on the current watershed conditions, flood risk and Great Lakes water levels.*
- 7.1 (e) *That the Board of Directors acknowledges the report dated September 1, 2021, on the Engineering and Design plan for Management of Contaminated sediment.*
- 7.1 (f) *That the Board of Directors acknowledges the report dated September 3, 2021 on the Healthy Watersheds Program update.*

- 7.1 (g) *That the Board of Directors acknowledges the report dated September 3, 2021 on the Healthy Lake Huron Program update.*
- 7.1 (h) *That the Board of Directors accepts the Regulations Activity Reports on “Development, Interference with Wetlands & Alterations to Shorelines & Watercourses” Regulation (Ontario Regulation 171/06), dated September 3, 2021 and includes June 1, 2021 to August 31, 2021, as presented.*
- 7.1 (i) *That the Board of Directors acknowledges the St. Clair Region Conservation Authority’s monthly Planning Activity Summary Report dated August 31, 2021 for June, July and August, 2021.*
- 7.1 (j) *That the Board of Directors acknowledges the revenue and expenditure report to July 18, 2021, as it relates to the budget.*
- 7.1 (k) *That the Board of Directors approves the June to August 2021 disbursements as presented in the amount of \$2,581,151.53*
- 7.1 (l) *That the Board of Directors acknowledges the status report on the 2021 general levy receipts to August 31, 2021.*
- 7.1 (m) *That the Board of Directors acknowledges the investment statements for the period ending June 30, 2021.*
- 7.1 (n) *That the Board of Directors acknowledges the minutes of the March 26, 2021 and June 8, 2021 Joint Health and Safety Committee.*
- 7.1 (o) *That the Board of Directors acknowledges the Communications Report, dated September 5, 2021, including information regarding Conservation Education, Coming Events and Conservation Scholarships.*
- 7.1 (p) *That the Board of Directors acknowledges the St. Clair River Area of Concern Update Report, dated September 3, 2021.*

8.1 **Moved by:** **Seconded by:**
 That the Board of Directors acknowledges the report dated July 22, 2021 on the Wawanosh Wetlands Invasive Phragmites Plan.

8.2 **Moved by:** **Seconded by:**
 That the Board of Directors acknowledges the report dated August 30, 2021 regarding the draft lease agreement for the Shetland Conservation Area and approves this document, without change to clause 4.6, and further directs staff to notify the Township of Dawn-Euphemia of this decision.

Moved by:

Seconded by:

That the Board of Directors form a Highland Glen Boat Ramp Committee, working with staff to evaluate options, evaluate the funding model, and develop recommendations for the full Board's review and further that the Committee be comprised of the Chair, Vice Chair and one representative from each of Sarnia, Plympton-Wyoming and Lambton Shores, as well as three representatives from the remaining municipalities.

8.7 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the report dated September 9, 2021 regarding request made to purchase a portion of the Mckeough Upstream Land 105, and further concurs with staff's recommendation to retain ownership of this land in its entirety.

9.1 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the report dated September 2, 2021 regarding a request for appeal of fees, for a reduction in costs regarding 26456 Richmond Road, Dover Centre and further

9.2 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the report dated September That the Board acknowledges the letter received from Grant Inglis, Scott Petrie LLP, dated June 4, 2021, and agrees to withdraw charges against [REDACTED] and [REDACTED].

10.1 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the proposed increases for Planning and Regulations fees, as recommended by Tim Dobbie Consultants Ltd., and further direct staff to prepare a report to the Board of Directors for the November meeting outlining the proposed fee schedule for 2022.

10.2 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the report dated July 7, 2021 on the proposed 2022 Conservation Area fees and concurs with staff recommendations, as presented.

10.3 **Moved by:**

Seconded by:

That the Board of Directors acknowledges the 2022 preliminary draft budget of \$_____ with a proposed municipal general levy of \$_____ and further that this preliminary budget will be circulated to member municipalities for information and input based on our budget review process.

- 11.1 **Moved By:** **Seconded by:**
That the Board of Directors acknowledges the report dated August 27, 2021, on the Disaster Mitigation and Adaptation Fund (DMAF) intake 2 for shoreline restoration along Lake Huron and St. Clair River and the Board directs staff to work with the City of Sarnia and St. Clair Township to submit the application.
12. Board Correspondence
(none)
13. New Business
14. **Moved by:** **Seconded by:**
That the meeting be adjourned.



Board of Directors Meeting Minutes

Date: June 24, 2021

Time: 10:00 a.m.

Remote

Present: Alan Broad, John Brennan, Pat Brown, Terry Burrell, Bill Dennis, Joe Faas, Chair; Larry Gordon, Vice Chair; Aaron Hall, Frank Kennes, Brad Loosley, Betty Ann MacKinnon, Kevin Marriott, Netty McEwen, Mark McGill, Dan McMillan, Steve Miller, Frank Nemcek, Lorie Scott, Mike Stark, Jerry Westgate

Staff Present: Donna Blue, Manager of Communications; Erin Carroll, Director of Biology; Melissa Deisley, Regulations Coordinator; Chris Durand, Manager of IT/ GIS; Roland Eveleens, Sarah Hodgkiss, Planning Ecologist; FishCAST Intern; Ashley Fletcher, Administrative Assistant/ Board Coordinator; Melissa Levi, Conservation Education Technician; Brian McDougall, General Manager; Tim Payne, Manager of Forestry; Tracy Prince, Director of Finance; Girish Sankar, Director of Water Resources; Steve Shaw, Manager of Conservation Services; Myra Spiller, Conservation Education/Community Partnership Technician; Greg Wilcox, Manager of Conservation Areas

Guests Present:

The Chair welcomed everyone to the meeting. It was requested that each Director declare a conflict of interest at the appropriate time, on any item within this agenda in that a Director may have pecuniary interest.

BD-21-48

Burrell – Scott

“That the Board of Directors adopts the agenda for the meeting as presented.”

CARRIED

The minutes of the Board of Directors meeting, held April 15, 2021 were reviewed.

BD-21-49

Dennis – Kennes

“That the minutes of the Board of Directors meeting, held April 15, 2021, be approved as distributed.”

CARRIED

Part two of three presentations on Regulations and the Drainage Act was provided by Melissa Deisley, Regulations Coordinator. Part three of the presentation will be provided at the September 16, 2021 meeting.

BD-21-50

Loosley – Scott

“That the Board of Directors acknowledges part two of the presentation titled Regulations and the Drainage Act, presented by Melissa Deisley, Regulations Coordinator.”

CARRIED

An introduction to Melissa Levi, Conservation Education Coordinator and Myra Spiller, Conservation Education/Community Partnership Technician was provided by Donna Blue, Manager of Communications. Melissa Levi and Myra Spiller provided a presentation live from the canoe at the Lorne C. Henderson Conservation Area.

Director’s Comments:

Directors gave thanks for the presentation. Discussions were held regarding phragmites and current treatment options.

BD-21-51

Gordon – Westgate

“That the Board of Directors acknowledges the Education Department presentation titled Live-Stream from the Canoe, presented by Melissa Levi, Conservation Education Technician and Myra Spiller, Conservation Education/Community Partnership Technician”

CARRIED

Service Delivery Review Update:

- In September 2020, the Authority directed staff to contract a consultant to provide a service delivery review with regards to the Authority’s Planning and Regulations Department
- Tim Dobbie Consulting completed interviews with CA staff, Board Members, municipal staff, developers and builders, and comparator Conservation Authorities has provided a great deal of information
- A Technical Advisory Committee of Melissa Deisley, Acting Co-Manager of Planning and Regulations, Sarah Hodgkiss, Acting Co-Manager of Planning and Regulations, Chris Durand, Manager of GIS/IT and myself have been meeting with the consultant to provide input to the project
- It was intended that the Final Report for the review would be provided to the Board of Directors at their meeting in April
- Unfortunately COVID-19 slowed the interview process and the report was not available

- The intention was then to bring the Final Report forward to the June meeting, however, staff and the consultant continue to work on the content of the final report
- The report will provide important information regarding the operations of the Planning and Regulations department and staff believe that it is important to present the findings of the report to you prior to the draft budget that will be presented in September
- Therefore, I will be requesting that the Chair call a meeting of the Board of Directors in late July or early August to receive the final report as well as a presentation and discussion with Tim Dobbie and his team

Search for new General Manger:

- The Executive Committee met on May 6, 2020 to provide direction on a path to the selection of a new General Manager
- The Executive Committee were presented examples of job descriptions, postings, advertisements, resume matrixes and interview questions
- It was confirmed that senior Human Resources staff of the City of Sarnia had been contacted and were prepared to assist with the process
- The Executive Committee is expected to meet during the week of June 28th to review a timeline for the hiring, an updated job description, plans to post and advertise the position, review a resume review matrix, review interview questions

Director’s Comments:

Directors look forward to reviewing the report from Tim Dobbie and request a separate meeting to address. Questions and discussion took place regarding the change in cabinet ministers and whether the shuffle will affect the proposed regulatory changes.

BD-21-52

Scott – MacKinnon

“That the Board of Directors acknowledges the General Manager’s report, dated June 17, 2021.”

CARRIED

Background:

- On May 13th, 2021, the Ministry of the Environment, Conservation and Parks (MECP) posted Phase 1 of the Regulatory Proposals under the Conservation Authorities Act to the Environmental Registry for public and agency review
- The proposed regulations for consultation in phase one are focused on:
 - i. Mandatory programs and services all CAs would be required to provide

- ii. Requirements for agreements between CAs and participating municipalities (use of municipal levy to fund non-mandatory programs and services)
 - iii. Details of the transition plan CAs must prepare (including preparing an inventory of the authority's programs and services, and steps to enter into agreements with municipalities)
 - iv. Requirements for each CA to establish a community advisory board
 - v. Details around the consolidation of individual CA 'Conservation Areas' regulations into a single, Minister's regulation.
- Consultation on these Phase 1 regulatory proposals is open until June 27th, 2021
 - According to the MECP website (last updated May 13th, 2021) the Phase 2 regulatory proposal will be released for consultation later this year, and will focus on municipal levies related to mandatory and non-mandatory programs and services, and the standards for the delivery of non-mandatory programs and services
 - The proposed submission highlights the work that the Authority will do to support successful implementation while flagging a number of limitations including ever shortening timelines and cost and capacity

Proposed Comments on ERO#019-2986:

- The following represents the comments on this first phase of regulatory amendments

Mandatory Programs and Services

- These categories of programs and services offered by the SCRCA are related to:
 - Risk of natural hazards
 - Conservation and management of lands owned or controlled by a conservation authority, including any interests in land registered on title.
 - Conservation authority duties, functions and responsibilities as a source protection authority under the Clean Water Act, 2006.
- In addition, we were pleased to see the addition of under the category of F - Other programs or services prescribed by the regulation within a year of the end of the transition period which are proposed to be:
 - F. Other program or services as prescribed
 - a. Core Watershed-based Resource Management Strategy
 - b. Provincial Water Quality and Quantity Monitoring

A. Hazards

- Generally, the scope of programs and services included by MECP in the proposals for natural hazards are comprehensive

- We were pleased to see the recognition of land use planning input, stream morphology, floodplain mapping, flood risk mapping and the inclusion of all the tools that CAs need to carry out our flood management program, including communications support which is particularly important during an event
- We also note the inclusion of a low water program which, with climate change, is becoming an important function
- The province has not included a specific reference to wetland mapping, which should be added

General Comments:

- Concerns for future funding by the province for hazard management programs have been raised with 50% cuts to the MNRF funding for their natural hazards program in 2019
- In 2020, the MNRF transfer payment covered less than 11% of the actual cost to deliver the hazard management program (Section 39) in this watershed
- Funding of the natural hazards program, as outlined in 1996, was intended to be a 50:50 partnership split between the Province of Ontario and the municipal membership of each Conservation Authority
- Mandates to focus on priorities and increased administrative requirements without a commitment to increase Provincial transfer payments does not start to balance the equation
- Infrastructure funding support through the Water and Erosion Control Infrastructure (WECI) Program is essential for continued maintenance and repairs to our water management infrastructure

B. Conservation Lands

- The second area of mandatory program and services relates to the management of Conservation Authority land
- There are new mandatory requirements proposed for strategies or management plans for all properties and land acquisition policy approved by the board
- These are valuable documents used to direct the operation of a parcel – however they are often difficult to complete or update with existing staffing
- The regulation is seeking plans for all properties
- SCRCA owns a lot of parcels of land this would be an onerous task
- The grouping of lands or categorization of parcels should be considered to assist in completion of the plans however flexibility in deadlines will be required without funding support

- We were pleased to see the inclusion of natural heritage monitoring and management as part of the mandatory programs for CA lands to maintain or rehabilitate them but remain disappointed that the importance of this work is not equally valued throughout the watershed
- Specifically excluded from this mandatory area are any recreational uses of the lands like walking trails, that are provided free of charge to the public
- SCRCA has many properties that offer trails for which there will be no levy to monitor, maintain or manage risk
- This may necessitate that the trails be closed to public use or that gates and/or fees of some manner will need to be collected to enable the management of the recreational use, if a municipality does not wish to enter into an agreement for special levy funds to support non-mandatory programs
- According to the consultation guide, it would appear that this type of passive recreation is not to be considered mandatory and therefore would require municipal agreement
- However, it is very difficult to separate passive recreation from property security, considered mandatory service
- In addition, some parcels located within one municipality but used by residents from outside the municipality or beyond
- Sharing of costs for these shared resources to specific municipalities will be difficult to determine - How are these costs treated if one municipality does not wish to contribute?
- In addition, we feel the provision of private land stewardship programs such as tree-planting and soil erosion control for mitigation of natural hazards should be included as a new mandatory activity
- The issues that prompted the establishment of many Conservation Authorities were related to deforestation and its impact on water supply, drought, soil erosion and flooding
- Early emphasis in some Conservation Authorities was on forest acquisition, reforestation and aiding landowners to reforest marginal land – basically water/hazard management through forest management
- Research has demonstrated the importance of nature based solutions such as protecting and restoring headwater areas, flood plains, river valleys, riparian areas, and wetlands in order to reduce the risk of flooding, erosion and drought
- Nature based approaches are much cheaper to implement than grey infrastructure approaches

- It is requested that the long understood value of forests, wetlands and riparian buffers in the watershed-based prevention and mitigation of flood and erosion hazards be acknowledged and that provision of private land stewardship programs such as tree-planting and soil erosion control be included in the mandatory programs and services related to the Risk of Natural Hazards
- While there may be, from time to time, other sources of funding available for the disbursement cost of these programs, funding for planning, outreach and delivery of these projects is not
- Continuity, relationship building and a watershed approach to these programs are important in the mitigation of flood and erosion hazards
- They also build resiliency into our watershed systems as we deal with the impacts of a changing climate

General Comments:

- That the province includes the infrastructure to support public access opportunities (such as walking trails) that are provided free of charge to the public as an eligible mandatory activity on conservation authority lands
- Public access to CA owned lands is a cost effective means of reducing encroachment and other illegal activities and promotes equitable access to green infrastructure
- Also related to green infrastructure, the provision of private land stewardship programs such as tree-planting and soil erosion control for mitigation of natural hazards be included as a new mandatory activity

C. Source Water Protection

- The inclusion of Source Water Protection is new for municipalities as the Province has funded this program at 100% since its inception
- CAs are required to exercise and perform the powers and duties of a Drinking Water Source Protection Authority and implement programs and services related to responsibilities identified under the Clean Water Act
- The mandatory programs and services identified in the discussion paper are generally consistent with Source Protection Authority tasks as identified in the Clean Water Act
- Conservation Authorities, as Source Protection Authorities, play a role in approvals for municipalities (e.g., issuing notices to drinking water system owners for a S. 34 amendment, monitoring and reporting on source protection plan implementation/ compliance)

- Identifying Source Water Protection as a mandatory program under the CA Act creates a framework for an anticipated future shift in program funding from MECP grants to municipal levy
- If funding for the source water program eventually shifts to municipalities, they would effectively be funding an approvals/enforcement agency, which would be a conflict of interest
- It will be important to understand MECP's intent with respect to continued financial support for this program this fall as we are informing the municipalities of the potential budget implications of the changes
- By inclusion under mandatory programs it signals a requirement to be included in the levy, although provincial funding may continue to be provided
- MECP has been unclear in their responses about the potential for continued funding but given the importance of this program to Ontario we encourage the province to maintain funding, at a minimum for the core administrative program and staff for the Source Protection Regions that are shared across multiple CAs
- Further, this funding needs to be indexed for inflation so that there is no erosion of the ability to implement the requirements of the Clean Water Act

General Comments:

- It is recommended that the MECP continue to fully fund Source Protection Authority responsibilities under the Clean Water Act through provincial transfer payments
- This funding needs to be indexed for inflations as to not impact the implementation of the requirements under the Clean Water Act

F. Other Programs Prescribed in Legislation

Watershed Based Resources Management Strategy

- The addition of the watershed-based resources management strategy is positive as it provides a longer-term perspective as well as an organizing framework for categorizing the mandatory and non-mandatory programs and services for consultation with municipalities
- SCRCA strongly supports inclusion of core watershed-based resource management strategies as a mandatory program and service because it provides a framework for Conservation Authorities and their member municipalities to identify and prioritize the programs and services most needed in each watershed to protect people and property from natural

hazards and conserve natural resources

General Comments:

- This incredibly valuable document which will enable and encourage the integration of all other mandatory programs and identify non-mandatory programs
- However, the process to create such a document requires funding and staff capacity to undertake, such funding is not included within the current budget and will not be well received moving forward

Provincial Water Quality and Quantity Monitoring

- SCRCA staff have been carrying out monitoring of surface and ground water on behalf of the province for years, with the province providing support largely in the form of lab analysis
- It is unfortunate that the province did not specifically allow for the additional surface water quality monitoring that is needed for our own programs to provide better coverage in support of a variety of municipal and CA needs

General Comments:

- Please clarify that MECP will continue to be a funding partner for the proposed mandatory Provincial Water Quality and Quantity Monitoring program

Regulations for Municipal Agreements

- Regulatory authority for agreements for municipal funding of non-mandatory programs and services and the regulatory authority for a transition period/plan to develop the agreements is proposed to be combined into one Minister's regulation - Regulation for Municipal Agreements and Transition Period.
- The proposed agreements regulation could require that the agreements do the following:
 - a. Include a provision that the participating municipality agrees to pay its apportioned levy for the non-mandatory program or service
 - b. Set out the termination date of the agreement
 - c. Certain time periods may also be specified for the purposes of reviewing and renewing any such agreements that are reached
 - d. Include provisions governing early termination and governing notice and resolution of breaches of the agreement

- e. Include transparency provisions (e.g., that agreements are available to the public online)
- The ministry is proposing that agreement arrangements between conservation authorities and municipalities could be flexible according to program or service circumstances (i.e. an agreement for a program or service could be with one or more participating municipalities or could be separate agreements per participating municipality including all the conservation authority-determined programs or services that a municipality may agree to fund, etc.)
- The flexibility is intended to support efficiency, expedite the agreement(s) and be cost effective in any potential legal or accounting fees

General Comments:

- It is important that flexibility be retained to ensure that each municipality can approach the agreements to best suit their needs
- With the agreements being due on or before December 2022 in an election year will be very challenging to achieve within council deadlines for business to be completed before the election
- The tight timelines only exacerbate the issues of capacity and funding as staff are completely occupied with the programs that fund their salaries
- Further, the budgets attached to the non-mandatory programs will not be approved until the new council takes office in 2023

Transition Plans

- Un-proclaimed provisions in the CA Act would, once proclaimed, also establish a requirement each conservation authority to develop and implement a transition plan that includes:
 - a. A work plan and timeline outlining the steps the conservation authority plans to take to develop and enter into agreements with its participating municipalities
 - b. The preparation of an inventory of all of the authority’s programs and services, with clear indication for each program and service which of the three categories it fits into (mandatory programs and services where municipal levy could be used without any agreement; non-mandatory programs and services at the request of a municipality with municipal funding through a MOU; non-mandatory programs and services an authority determines are advisable), and how they are funded (e.g., provincial, federal, municipal funding, municipal levy, and self-generated revenue)

- c. The consultation process with participating municipalities on the inventory
 - d. A list of any new mandatory programs and services the authority will need to provide to meet the requirements of the mandatory program and services regulation
 - e. A list of non-mandatory programs and services for which the authority will seek municipal agreement to fund via municipal levies, including estimated amounts requested/required from the participating municipalities to do so.
 - f. A list of non-mandatory programs and services that do not require municipal agreements (if the programs and services are funded by revenue that is not from a municipal levy).
 - g. Steps taken and/or to be taken to enter into these agreements.
- CA's with Conservation Ontario are already looking at ways to be consistent in our classification of programs and services using standardized approaches
 - The government proposes to require that the mandatory conservation authority transition plans be completed by the end of 2021 and that quarterly progress reports be provided to the Ministry
 - This is tight but we can proceed assuming limited change to the scope of the regulations
 - Should significant change happen it may become difficult to meet that timeline
 - The province is then proposing that all required conservation authority/municipal agreements would need to be in place, and the transition to the new funding model for CAs and municipalities would be reflected in our budget for **January 1, 2023**.

General Comments:

- The timeline proposed is a very tight timeline given the regulations, and subsequent phases of regulations including for the levy and fees have yet to be released, timing of 2023 budget preparations, municipal elections and resulting limitations on approvals for MOUs and agreements
- The tight timelines only exacerbate the issues of capacity and funding as staff are completely occupied with the programs that fund their salaries

Section 29 Minister's Regulation

- Under the Conservation Authorities Act, conservation authorities are required to provide programs and services related to the conservation and management of lands owned or controlled by the authority

- This includes a regulation made under Section 29 of the Conservation Authorities Act regarding public use of authority's property
- It is proposed that the Section 29 regulation be redesigned to better align with by-laws made under the Municipal Act related to the use of municipal property including parks, and the Provincial Parks and Conservation Reserves Act, 2006 and its associated regulations, including O. Reg. 347/07: Provincial Parks: General Provisions

General Comments:

- That the province defer the approval of a new Section 29 regulation until such time as a fulsome review and update of the regulation can be undertaken
- It is important that CAs have the right tools to take us into the future where our conservation areas are heavily used by tourists and locals alike

Community Advisory Board

- The Province is proposing to proclaim an un-proclaimed provision of the CA Act related to advisory boards to require CAs to establish community advisory boards, that can include members of the public, to provide advice to the authority
- In recognition of the variation in the circumstances of individual conservation authorities, the Province is considering an approach to structure the CA community advisory boards with minimal prescribed requirements to enable local flexibility of some aspects of the community advisory board to reflect a conservation authority's circumstances and to accommodate a conservation authority's preferences for their use of the community advisory board
- Specific details related to the composition, activities, functions, duties, and procedures of the community advisory board will be outlined in a Terms of Reference (TOR) document to be approved by the Board of Directors
- The province intends to require the TOR also outline specific functions and activities of the community advisory board scoped to the authority's needs, and at a minimum enable community advisory board members to:
 - a. Provide advice and recommendations to the authority on the authority's strategic priorities and associated policies, programs and services
 - b. Discuss opportunities to co-ordinate with other environmental initiatives in the authority's jurisdiction (e.g. municipal)
 - c. Identify opportunities for community engagement
 - d. Suggest potential community outreach opportunities

- The province intends to prescribe certain aspects in regulation related to the composition of the community advisory board but leaving considerable flexibility for the CA

General Comment:

- Currently, the SCRCA does not have a Community Advisory Board or similar subcommittee of the Board of Directors
- Several subcommittees are in place which are focused on specific issues or situations (Flood Action Committee, Low Water Response Committee, etc.) but no committee with open focus to all aspects of the Authority as this has been viewed as the duties of the Board of Directors (with 20 representatives of 17 municipalities forming the Board of Directors)
- The additional administrative burden on the levy to support the Community Advisory Board (CAB), assuming per diems are paid, staff support and reports required for meetings, time and place for meetings to be held, minutes and agenda's prepared as supported by the current administrative functions cannot be overlooked and further adds to the issues of capacity and funding as staff are completely occupied with the programs that fund their salaries
- The proposed timing of the creation and implementation of the CAB should coincide with the implementation of new municipal agreements in January 2023 and reflect the input of new councils taking office in November 2022 and appointing their representatives to the Conservation Authority (CA) General Membership.

Conclusion:

- The Province has released the first phase of regulatory proposals for public comment by June 27th, 2021
- The regulations have been informed by a working group of CA's and stakeholders appointed to advise the Ministry of Environment Conservation and Parks
- The proposed regulations for consultation in phase one are focused on: definition of mandatory programs and services, the proposed agreements required with participating municipalities for municipal levy to fund non-mandatory programs and services, the transition period to establish those agreements, the requirement to establish 'community' advisory boards, and, a consolidated Minister's section 29 regulation relating to conservation authority (CA) operation and management of conservation lands

- While there are still some areas for improvement in the proposed regulations, the content covers the important functions of the CA and aligns reasonably well with expectations for what would be considered mandatory and non-mandatory programs and services
- However, we remain concerned with the timelines to implement the requirements of these changes (completion and maintenance of municipal agreements, strategies, plans and community advisory boards) and the additional administrative and financial resources required to meet these requirements both with the identified timelines and beyond

Director’s Comments:

Directors expressed concern regarding the proposed timeline for compliance (core mandates) set by Ministry of the Environment, Conservation and Parks (MECP) and suggest making a request for an extension to July, 2022 noting our limitations in resources.

BD-21-53

Stark – Burrell

“That the Board of Directors directs staff to submit a formal request to the Ministry of Environment, Conservation and Parks to extend the proposed deadline of December 31, 2021 to July 1, 2022 for the completion and implementation of the Conservation Authority transition plans.”

CARRIED

BD-21-54

Burrell – Nemcek

“That the Board of Directors acknowledges the comments on the “Regulatory Proposals (Phase 1) under the Conservation Authorities Act” (ERO#019-2986) and that these comments be endorsed for submission to the Ministry of the Environment, Conservation and Parks.”

CARRIED

Background:

- Lambton County Council received a presentation on June 2, 2021 from proponents of Peacekeeper Park, of which a copy was provided to the Board of Directors for review.
- County Council has requested that Conservation Authorities review the potential for the location of Peacekeeper Park on Conservation Authority owned lands (County Council has made similar requests to its member municipalities and interested private property owners)

- Peacekeeper Park was previously located at Lake Whittaker Conservation Area just east of Harrietsville, ON (a property owned by Kettle Creek Conservation Authority (KCCA))
- I was contacted by Board Members Marriott and Loosley both inform me of the request to investigate locations on CA property that would suit the needs as well as to seek some background information regarding KCCAs decision to ask Peacekeeper Park to vacate the property
- An excerpt from the KCCAs Board Meetings Agenda from December 16, 2020 as well as an excerpt from the Minutes of the same meeting were provided for review.
- Staff would like to schedule a meeting with the Peacekeeper Park proponents in order to obtain a full understanding of the Park needs
- Subsequently, staff will review Authority properties to determine what properties meet those needs, if any, and review any that do in comparison to Authority programs and report back to the Board

BD-21-55

Brown – Loosley

“That the Board of Directors acknowledges the report dated June 17, 2021 regarding Peacekeeper Park and further directs staff to meet with Peacekeeper Park representatives to determine their needs, review all Conservation Authority properties which could meet the identified needs and report back their findings to the Board of Directors.”

CARRIED

Conservation Area Servicing:

- Since the beginning of the pandemic, Authority staff have undertaken all reasonable measures to provide adequate servicing in our Conservation Areas
- Conservation Areas in our watershed were kept open to the public and were well used at the peak of the pandemic providing an outdoor retreat for peoples physical and mental health
- The Province and our local Health Units have provided guidelines throughout the pandemic to ensure that people are protected, including mask wearing, social distancing and facility maintenance
- Staff continue to provide the best available service with these guidelines; with the understanding of capabilities and available funding and the required maintenance for any available service
- Staff will be providing a range of plans for servicing our Conservation Areas through the remainder of 2021 in advance of the meeting for review and discussion

- An email, received on June 7th, 2021, with concerns brought forward regarding Highland Glen Conservation Area and the conditions and available services on June 6th, 2021 was reviewed.

Conservation Area Servicing Update - June 23:

- In cooperation with the Town of Plympton-Wyoming, porta-johns have been located at Highland Glen CA as of Friday June 18th
- The Conservation Authority is providing the porta-johns with weekly cleaning and pump out while Plympton-Wyoming will be provided the twice daily cleaning required under current provincial and local health guidelines
- Plympton-Wyoming has agreed to provide this service through August
- Understanding that we will hopefully be proceeding to the next Phase(s) of Reopening over the coming weeks – there is no link between the guidelines for washroom maintenance and the Phases of Reopening
- Therefore, it is unknown if any changes to the guidelines will be brought forward
- Other than the complaint from Mr. Dekker, provided via Board Member McEwen – no complaints regarding the availability of porta-johns have been received by either the Manager of Conservation Areas, Manager of Forestry or the General Manager
- Traditionally, porta-johns would also be located at Wawanosh CA and the Foundation's Keith McLean Conservation Lands
- Porta-johns have been included in the annual budgets for these properties at \$750.00 for the structure and weekly maintenance and pump-out for approximately 6 months
- Quotations for additional cleanings of porta-johns have been received providing a rate of \$35.00 per visit
- This roughly translates to \$2000.00/month for cleaning twice daily as well as the structure and weekly pump-outs
- Porta-johns have not been placed at Wawanosh or McLean this year due to the impracticality of required maintenance & cleaning
- Coldstream Conservation Area and Bridgeview Conservation Area are leased to Middlesex Centre and Petrolia respectively, each has washrooms that are open for public use

Proposed Servicing Plan

- As identified above, two porta-johns have been placed at Highland Glen Conservation Area under an Authority contract based on a 4 month contract which will fall within the budget for Highland Glen for 2021
- The contract includes once weekly maintenance and pump-out

- Plympton-Wyoming will provide twice daily cleaning of the porta-johns through at least August, at no cost to the Authority (this is greatly appreciated)
- As no concerns or issues have been brought forward to date in regards to Wawanosh or McLean, it is proposed that no porta-johns be placed at these properties in 2021 due to the required twice daily maintenance and the resulting financial costs which well exceed approved budgets
- Adjustments to the 2022 budget will be proposed with consideration for additional required cleaning procedures and further reviewed in the spring of 2022 prior to placement of porta-johns in Conservation Areas

Director's Comments:

Director Brad Loosley expressed concern regarding the delayed opening of St. Clair Conservation Areas after the Provincial and local health authorities authorized the opening of campgrounds. It was explained by General Manager, Brian McDougall that the reasoning for this delay was with public safety in mind. Within the provided notice of reopening, it was not possible to implement the health guidelines, including twice daily facility cleaning, and further it was not felt that a 'use at your own risk' approach was appropriate. Director and Vice-Chair, Larry Gordon commended the Conservation Authority's decision to delay the opening of campgrounds until the imposed regulations were able to be met safely, both financially and health-wise.

Director Brad Loosley suggested that the Conservation Authority consider deeding the Highland Glen Conservation Area to Plympton-Wyoming after boat launch repairs take place, with the agreement that the land remains a public park and boat launch. Director Brad Loosley requested a recorded vote on the motion to initiate discussion with Plympton-Wyoming.

Directors Lorie Scott and Terry Burrell expressed concern regarding the proposed motion to deed the park to the Town of Plympton-Wyoming, mentioning the park's unique features, regional status and responsibility as a regional organization. General Manager, Brian McDougall offered to provide a report to the Board of Directors on the history of the Conservation Areas and their various models funding support as well as an opportunity for the Director of Finance, Tracy Prince to provide information specific to each municipality in regards to their level of commitment, based on their assessed value, to repair the boat launch. Director Mark McGill enquired whether, failing to deed the land to Plympton-Wyoming, there are other oppourtunities to fund repairs, such as Provincial or Federal grants. It was explained that Water Erosion Control Infrastructure (WECI) funding was applied for, however the boat launch was not identified as a priority project to receive funding.

In reference to motion: BD-21-56

Director's Name	For	Against
Brennan, John	✓	
Broad, Alan	✓	
Brown, Pat	✓	
Burrell, Terry		✓
Dennis, Bill	✓	
Gordon, Larry		✓
Hall, Aaron	✓	
Kennes, Frank	✓	
Loosley, Brad	✓	
MacKinnon, Betty Ann	✓	
Marriott, Kevin	✓	
McEwen, Netty	✓	
McGill, Mark		✓
McMillan, Dan	✓	
Miller, Steve (absent during vote)	-	-
Nemcek, Frank	✓	
Scott, Lorie		✓
Stark, Mike	✓	
Westgate, Jerry	✓	
Faas, Joe	✓	
Total	15	4

BD-21-56

Loosley – Stark

“That the Board of Directors direct staff to initiate discussion with the Town of Plympton-Wyoming in regards to the Highland Glen Conservation Area and the possibility of deeding the property to their ownership and operation, with a conditional agreement to repair the boat launch prior to a change of ownership, and also that the lands be maintained as a public park and boat launch.”

CARRIED

BD-21-57

Burrell – McEwen

“That the Board of Directors acknowledges the correspondence received and sent by the General Manager regarding conditions at Highland Glen Conservation Area and further approves the servicing plan for Conservation Areas in the St. Clair Region including the compliance with the guidelines for maintaining washrooms as provided by Provincial and local health authorities.”

CARRIED

A verbal update was provided by General Manager, Brian McDougall. The main focus of the meeting was the review of proposed comments regarding the regulatory proposals made by the Ministry of Environment, Conservation and Parks (MECP) and the shared

concern for financial support and timing to complete set out tasks. The council also discussed additional mandated programs for review by MECP as well as the requests for data sharing from Ontario Hydro and comments on the various stewardship programs involving easements.

BD-21-58

Miller – Gordon

“That the Board of Directors acknowledges the verbal update on the June 21, 2021 Conservation Ontario Council meeting.”

CARRIED

Director’s Comments:

Director and Vice Chair, Larry Gordon highlighted the following reports within the consent agenda:

- **Item 8.1 (c)** – A recent presentation on the ongoing clean-up efforts along the St. Clair River and study of historical contamination provided eye-opening findings and important revelations, namely the significant decrease of mercury contamination on the surface. Director of Water Resources, Girish Sankar provided a brief synopsis of the project and plans to bring a draft version of the engineering report to the Board of Directors by early 2022.
- **Item 8.1 (f)** – It was noted that this year’s tree planting program saw the highest landowner participation in over a decade. Manager of Conservation Services, Steve Shaw spoke regarding the success of the tree planting program despite the various challenges this year has brought.
- **Item 8.1 (o)** – Scholarship recipients were congratulated and wished well as they continue in their studies.

BD-21-58

McMillan – Brennan

“That the Board of Directors approves the consent agenda and endorses the recommendations accompanying Items 8.1 a - 8.1 p.”

CARRIED

The report on business arising was reviewed.

8.1 (a) That the Board of Directors acknowledges the report on Business Arising dated June 14, 2021.

Watershed Conditions

Water levels on the surrounding Great Lakes and Lake St. Clair saw continued rise in past years, exceeding record levels in 2019 and again in 2020, only to be followed by a

significant drop in water levels and low precipitation into 2021. The stark difference can be attributed to long-term precipitation trends.

As illustrated above, monthly precipitation anomalies have been predominately strongly positive since January 2017. This above-normal precipitation greatly impacted the surrounding water bodies, leading to increases in water levels over the last several years. In mid-April of 2020, precipitation anomalies shifted into negative values and have predominately remained below-normal to date. When comparing monthly mean water levels on Lake Huron and Lake St. Clair, water level fluctuations appear to follow precipitation trends with a lag of about a year. As a result, water levels in 2021 have been dropping in response to lower than normal precipitation which occurred in 2020.

In May 2021, SCRCA staff declared a Low Water Level 1 in response to below normal precipitation trends across the region. Precipitation amounts at localized gauges within the watershed showed precipitation trends below 80% of normal. Low Water Response is a provincial program through the MNR; Level 1 is an early indication of a potential drought condition and is categorized by an area reporting precipitation below 80% of normal (i.e. average) amounts for a period of 3 or 18 months. Neighbouring Conservation Authorities have also declared low water statuses.

Levels have been subsiding since late 2020 and have remained static through the spring, despite the typical cyclical nature of the water levels, where levels typically rise in spring. Water level projections for Lake Huron show a continued fall in levels over the next six months.

Lake Michigan-Huron

- In May, the average water level was 45.7 cm (18 inches) above the long-term average and 43.2 cm (17 inches) below its record high set in May 2020
- Water level forecasts predict the lake will begin its seasonal rise in June and peak in July, with water levels predicted to be 48.3 cm to 71.1 cm (19 to 28 inches) below record high levels through November
- Between June and November, water levels are predicted to remain 33 cm to 38 cm (13 to 15 inches) above long-term average levels

Lake St. Clair

- The lake continued its seasonal rise from April to May, rising 2.54 cm (1 inch)
- In May, the average water level was 43.2 cm (17 inches) above the long-term average level and 40.6 cm (16 inches) below the May 2020 level
- The six-month forecast predicts the lake will begin its seasonal decline in June, with water levels 43.2 cm to 61 cm (17 to 24 inches) below record high levels and 33 cm to 35.6 cm (13 to 14 inches) above long-term average levels

8.1 (b) That the Board of Directors acknowledges the report dated June 11, 2021 on the current watershed conditions and Great Lakes water levels.

The St. Clair Region Conservation Authority (SCRCA) is continuing to work with Parsons Inc. on the development of an engineering and design plan for managing contaminated sediment in three priority areas of the St. Clair River. Regularly scheduled Sediment Management Oversight Committee teleconferences continue to be held to provide the committee with updates on the project work and to seek input on any proposed changes to the scope of work.

Field activities were completed by Parsons in fall, 2019; summer, 2020; and fall, 2020. The work included:

- Water velocity measurements at 15 locations, and grain size analysis of sediment at 10 locations to assess sediment stability,
- The collection of sediment samples from 99 locations to assess the horizontal and vertical extent of mercury contaminated sediment in each priority area,
- A bathymetry survey to measure sediment surface elevations in the targeted areas.

Update:

After assessing the extensive amount of new data that was collected, in conjunction with historical data, the consultant concluded that:

- There are no measurable risks to fish presented by mercury in sediment.
- The risk-based goal of an average of 3 mg/kg mercury in the surface sediment has already been met in each Priority Area and at the two Buried Deposits.
- There have been significant decreases in mercury concentrations in surface sediment compared to historical results due to natural recovery.
- Re-exposure of the subsurface buried mercury is unlikely.
- An Erosion Resistant Cover is recommended in focused areas within Priority Areas 1, 2 and 3 to enhance erosion protection and decrease mercury concentrations at the surface.
- The planned remedial actions will achieve the sediment management goals and remedial action objectives.

Next Steps:

Activity	Timing
Virtual Information Sessions to Create Awareness of the Recommended Remedial Approach Aamjiwnaang First Nation Environment Committee, Walpole Island First Nation Heritage Centre Committee, Key Stakeholders (Agencies, Industries, Municipalities), Community, Canadian RAP Implementation Committee]	June 2021
Posting of Virtual Community Information Session to Conservation Authority Website	July 2021

Consultant's Submission of Draft Engineering and Design Report	August 2021
Consultant's Submission of Final Engineering and Design Report	November 2021
Acceptance of Final Engineering and Design Report	December 2021
Implementation of Engineering and Design Plan	To Be Determined

8.1 (c) That the Board of Directors acknowledges the report dated June 10, 2021 and support the on-going project work so that an engineering and design plan for the management of the contaminated sediment can subsequently be completed as planned.

Through financial support provided by Environment and Climate Change Canada (ECCC), the St. Clair Region Conservation Authority (SCRCA) is coordinating the development of a Phosphorus Management Plan for the Sydenham Watershed to reduce the impact of this nutrient on the Great Lakes basin and improve the health of the local ecosystem. Phosphorus is essential to life but when it becomes available in excessive amounts in freshwater environments it can cause algal blooms and hypoxic (low oxygen) conditions. This severely degrades the water quality of lakes and rivers and can impact the safety of water for drinking, recreation, and wildlife.

The objective of this multi-year project is to coordinate with local stakeholders, Indigenous peoples, and community members to identify sources of phosphorus and determine best-value solutions for our region. A community engagement and outreach strategy will be developed to implement the Management Plan.

Progress since December 2020 board report:

- Non-point Source Working Group meeting held December 11, 2020
- Point Source Working Group meeting held March 30, 2021
- Conducting/compiling research and collecting data based on direction from committees
- Data analysis and mapping
- Writing and editing draft management plan
- Submitted annual reporting
- Sharing data with university researchers
- Exploring potential projects with municipal staff/working group members
- Undertook WISKI (water quality program) training
- Attended local virtual rural water quality and Indigenous community-led events
- Participating on the Lake Erie Action Plan Implementation Committee; Agricultural and Natural Heritage Subcommittees

The SCRCA Project Team is compiling feedback from the committee meetings and one-on-one discussions with committee members to direct ongoing research. This

information is being investigated, discussed at meetings, and incorporated into the draft Management Plan.

2021 Lake Erie Harmful Algal Bloom Forecast:

As of June 9, [NOAA and Heidelberg University are projecting](#) that the severity of the 2021 harmful algal bloom on Lake Erie will be <5 on a scale of 10. Unimpeded overland runoff and overflows during the non-growing season are a major driver of phosphorus loads. Due to below average rainfall early this spring, the bloom for 2021 is expected to be less severe than average.

Strategic Objectives

The Phosphorus Management Plan is a project that ties into our existing programs and will help us to meet our strategic objective to focus on programs that reduce the loading of phosphorus to the Great Lakes in order to protect, manage, and restore our natural systems.

Goal 2:

“Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes.”

Strategic Actions:

“Develop New Tools to Promote Stewardship Practices and Evaluate the Effectiveness of Best Management Practices: Evaluate the current model of landowner outreach and voluntary stewardship and explore new tools and collaborations that expand conservation opportunities utilizing information from our watershed report cards. Best Management Practices (BMPs) are encouraged to promote soil health, improve water quality, and provide for more resilient watersheds. Efforts need to be made to evaluate the various BMPs to ensure they are creating the results expected such as reducing nutrient loss from farm fields (with a focus on phosphorus) and decreasing sedimentation in watercourses. This is an opportunity to work with colleges and universities, farming groups, and others to develop solid science to evaluate BMP effectiveness.”

“Focus on Programs to Reduce Phosphorous Loading into the Great Lakes:

Governments on both sides of the border have been taking action setting targets for the Great Lakes to deal with the problem of excess Phosphorus. Stewardship programs, while also addressing other watershed needs, should focus on reducing Phosphorous levels entering the Great Lakes.”

Financial Impact

For 2021-22, the SCRCA is continuing to coordinate the development of the Sydenham Watershed Phosphorus Management Plan with \$50,000 in financial support from Environment and Climate Change Canada.

8.1 (d) That the Board of Directors acknowledges the update dated June 9, 2021 regarding the Sydenham River Watershed Phosphorus Management Plan.

SCRCA's Biology Department and Conservation Services delivers a habitat stewardship program for landowners throughout the watershed to assist with the implementation of various habitat projects and agricultural best management practices (BMPs) to maintain/improve water quality and to create wildlife habitat. The Healthy Watershed Program has restored or enhanced over 1,000 ha of land, and over 4 million trees have been planted throughout the region. These projects, along with our outreach and education events aim to minimize non-point source sedimentation, nutrient loading, and thermal changes of water bodies within our watershed.

To encourage uptake and implementation of BMPs amongst farmers and rural landowners within our watershed, SCRCA provides relevant information regarding the building of soil health and water quality through workshops, conferences, newsletters and social media. To ensure we share good quality information to landowners, we have established various partnerships within the agricultural and research communities.

Outreach:

In March, Roland Eveleens, a University of Windsor Master's student joined the Biology department as a FishCAST Intern for a 16-week term. FishCAST is a co-curricular training program designed by experts and funded by Natural Sciences and Engineering Research Council to train graduate students in the fisheries and aquatic sciences. Have you seen his posts on our social media - #musselmonday, #treetuesday and #fishyfriday posts? Roland and his research were featured in the last Conservation Update and he'll be presenting his Master's research at the June board meeting. Roland also helped stewardship staff refresh all our BMP factsheets – be on the lookout on our website for the latest editions on the Grants for Landowners page.

We've released 3 videos on our YouTube page promoting practices that individuals can implement to reduce erosion and promote soil health and healthy Great Lakes. We are working to create more video content – be sure to keep an eye out on our social media and YouTube channel.

1. A young farmer from Adelaide Metcalfe evaluating the cost benefit analysis of bio strips and cover crops. <https://www.youtube.com/watch?v=VSaTHkKnKEI>
2. A dune planting project at Ipperwash Beach in Lambton Shores and the value of planting native dune/beach grasses to reduce erosion. Within two weeks of posting, the video has already received 180 views. <https://www.youtube.com/watch?v=cOLONvuWhrA>
3. Stewardship staff interviewed a bright young scientist from Lambton County (Grade 10) about her recent submission to the Youth Canada Science Fair on investigating a potential method to reduce Harmful Algal Blooms in Lake Erie. Her project has since placed Silver at the Canada-wide Fair. https://www.youtube.com/watch?v=YnIL_HWMeIQ
4. Upcoming: Stewardship staff are working with drainage staff at the Municipality of Chatham-Kent to highlight drainage BMPs that have been implemented by landowners and drainage staff on a recent drain maintenance project.

On April 20, staff presented to the Strathroy Rotary Club about local stewardship projects that have been completed in the Sydenham River watershed.

Grants:

Staff have been busy completing the year-end reports for the DFO Canadian Nature Fund (\$300,475), OMAFRA COA (\$73,000), and ECCO EcoAction (\$49,000).

Staff have submitted an application for a community tree-planting event at Bridgeview in September to TD Tree Days with Town of Petrolia for \$5,500.

An application to Ontario Community Environment Fund was submitted for \$80,000. This application included partnering with Town of Plympton-Wyoming on a reforestation project; with the Upperwash Phrag Phighters on wetland enhancements at the Tanner Swale in Upperwash in Lambton Shores, and working with landowners throughout our watershed to implement tree planting, wetland and erosion control projects. A portion of this funding, should it be approved will support the Biology Water Quality Monitoring Program and support a bank stabilization project at the Warwick Reservoir.

New Additions to the Biology Crew:

We have two new crew working with the Biology Crew until March 31, 2022. Sarah Snetsinger and Alexis Hand will be assisting with turtle, mussel, benthic, and fish monitoring, reporting and analysis. We also are welcoming Dominique Rumball from Dr. Nick Mandrak's lab at the University of Toronto, Scarborough in mid-July for a few months. There is a LOT of monitoring to be completed this year, so we are very grateful for these additions. Welcome to the team!

It's Turtle Season!

Turtles in Southwestern Ontario have begun laying their nests. Our biology crew are scouting daily to rescue eggs at risk of survival. To date, over 400 eggs from spiny softshell, Northern map, and snapping turtles have been collected to incubate.

Strategic Objectives(s):

The Healthy Watershed Program fulfills Goals 2 and 3 of the St. Clair Region Conservation Authority strategic objectives; Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes and provide recreation and education opportunities for the public to enjoy and learn from our natural environment. The objective is being achieved through the strategic action; Develop new tools to promote stewardship practices and evaluate the effectiveness of Best Management Practices and Focus on Programs to Reduce Phosphorous Loading into the Great Lakes.

8.1 (e) That the Board of Directors acknowledges the update dated June 4, 2021 regarding the Healthy Watersheds Program.

- Spring 2021 was the highest landowner participation year in more than a decade for both the seedling afforestation program and the large stock tree order program.
- Demand for tree seedlings for over the counter sales was nearly 2.5 times the normal amount with 83 landowners throughout the watershed purchasing more than 14,000 trees.
- Another 65,000 trees were planted throughout the watershed for 29 landowners.
- 79,000 tree seedlings arrived by transport truck a week and half late on April 30th and where unloaded into our cold storage facility.
- Two mechanical tree planting crews and one small hand planting crew worked for 3 weeks to finish planting all the trees before the end of May.
- SCRCA provided \$193,000 in grant dollars to landowners this spring through 5 individual grant agencies with landowners contributing \$104,000 toward their projects.
- There were 26 individual tree orders for 1,433 large potted stock trees this spring in excess of \$30,000 in value.
- Four municipalities participated in this year's program. Plympton-Wyoming, Village of Newbury, Brooke-Alvinston and Warwick Township.
- Trees ordered by Warwick and Brooke-Alvinston made up more than half of the number of trees ordered. Both municipalities had a list of many more resident landowners purchasing trees. This partnership between the SCRCA and the municipalities seems to be a very effective method of reaching out to many more people to plant trees.

8.1 (f) That the Board of Directors acknowledges the report dated June 8, 2021 regarding spring 2020 tree planting on private, corporate and public lands.

- Catch basin larvicide treatments to reduce mosquito populations in all rural and urban areas within the County of Lambton and the City of Sarnia will start in late June and end in mid-August. SCRCA staff will be working under the direction of Lambton Public Health during the treatment operations again this year.
- Catch basins located within Aamjiwnaang south of Sarnia will be treated under a separate contract pending approval for funding from Health Canada.
- Permits to treat surface water are obtained from the MECP under the Authority's Pesticide Operators Licence, Insurance and staff exterminator's licences.
- Pre-treatment larvae sampling (dipping) is scheduled for the week of June 14th. If mosquito larvae activity is low, a second sampling will be conducted the following week.
- Larvae dipping results are sent to Lambton Public Health and mosquito activity levels will be used to determine the treatment start date. Approval from the Lambton Medical Officer of Health is required before treatments can commence.

- Catch basins will be treated with methoprene in pellet formulation. Methoprene is a growth regulator which prevents mosquito larva from becoming biting adults. There will be three separate larvicide applications set at 21-day intervals starting around June 25th and finishing around the 20th of August.
- Public notice of pesticide application will be posted in several local newspapers across the County of Lambton.
- SCRCA staff will also be conducting efficacy tests throughout the summer as part of the treatment program by collecting mosquito pupa samples every 15-17 days. Pupa are monitored for adult emergence. Past efficacy tests show an average of 80% to 85% effectiveness for controlling adult mosquito emergence.

8.1 (g) That the Board of Directors acknowledges the report dated June 8, 2021 regarding the treatment of catch basins with a larvicide in Lambton County's rural and urban areas.

The Regulations Activity Reports on "Development, Interference with Wetlands & Alterations to Shorelines & Watercourses" Regulations (Ontario Regulation 171/06), for the period of April 1, 2021 to May 31, 2021 was reviewed.

8.1 (h) That the Board of Directors accepts the Regulations Activity Reports on "Development, Interference with Wetlands & Alterations to Shorelines & Watercourses" Regulations (Ontario Regulation 171/06), dated June 9, 2020 and includes the period April 1, 2021 to May 31, 2021, as presented.

The planning activity summary reports for the period April 1, 2021 to May 31, 2021 was reviewed.

8.1 (i) That the Board of Directors acknowledges the St. Clair Region Conservation Authority's monthly Planning Activity Summary Reports, dated June 10, 2021 for April and May, 2021.

The revenue and expenditure report to May 31, 2021 was reviewed.

8.1 (j) That the Board of Directors acknowledges the revenue and expenditure report to May 31, 2021, as it relates to the budget.

The status report on the 2021 general levy receipts to May 31, 2021 was reviewed.

8.1 (k) That the Board of Directors acknowledges the status report on the 2021 general levy receipts to May 31, 2021.

The investment statements to May 31, 2021 were reviewed.

8.1 (l) That the Board of Directors acknowledges the financial investment statements through May 31, 2021.

St. Clair Challenge – Virtual Fundraiser

To celebrate the St. Clair Region Conservation Authority's (SCRCA) 60th Anniversary, the SCRCA will be launching the first-ever St. Clair Challenge – a virtual event that will encourage our watershed residents to get out and explore the natural areas in our region – all while raising funds to support local conservation efforts.

Between July 1st and August 31st, individuals can challenge themselves to run, walk, hike, bike, or paddle along trails or waterways located in the SCRCA watershed. Participants will be able to register for one of our distance challenges by visiting our website at www.scrca.on.ca or through Race Roster (www.raceroster.com; search for St. Clair Challenge). From there, participants can create their own personal pages where they can track their adventures and invite people to donate to their fundraising goal.

Fundraising efforts and donations will support the St. Clair Region Conservation Foundation's mission of supporting the conservation programs of the St. Clair Region Conservation Authority. The Foundation supports a number of the Authority's programs including conservation education, tree planting, wetland creation, species at risk research, and upgrades to local conservation area facilities and amenities.

The fundraiser will be promoted through media releases to local news outlets and social media. Participants are not restricted to completing their distance challenges on SCRCA owned properties. If our member municipalities would like to have their natural areas promoted during this event, please direct the appropriate staff to Donna Blue, Manager of Communications at dblue@scrca.on.ca or at (519) 245-3710 Ext. 219.

60th Anniversary Social Media Campaign

The SCRCA's 60th Anniversary social media campaign continued since its launch in March. The campaigns have been developed to celebrate the SCRCA's 60th Anniversary and highlight the history and evolution of Authority programs and services. Recent campaigns focussed on the Authority's Maple Syrup Festival and Conservation Education, and Tree Planting.

May 2-7, 2021

Maple Syrup Festival and Conservation Education

May 24-28, 2021

Tree Planting

Media and Social Media Analytics:

In order to continually improve upon our activities related to local media outlets and social media, communications staff will be reviewing analytics to help assess our communications efforts.

The following statistics cover the timeframe from April 1, 2021, to May 31, 2021:

Media Relations

Activity	2021 (April – May)	2020 (April – May)
Media Releases	5	7
News Article	45	70
Mentions		

Social Media

Facebook

Activity	Total	2021 (April – May)	2020 (April – May)
New Likes	1,803	45	128
New Followers	1,831	48	9
Posts	--	67	67

Twitter

Activity	Total	2021 (April – May)	2020 (April – May)
Tweets	--	66	52
Retweets	--	23	42
New Followers	734	14	29
Engagements*	--	592	681

* Engagements = clicks, retweets, replies, follows, and likes

8.1 (m) That the Board of Directors acknowledges the Communications Update report, dated June 9, 2021.

Spring Education Program Summary

St. Clair Conservation's Education Team continues to innovate and adapt. With schools closed and all learning being done on-line, the Education Team is very busy delivering 'Live-Stream with a Naturalist' programs. A total of eleven 'Live-Stream' options provide teachers from Kindergarten through Grade 12 with engaging, real-time Conservation Education opportunities. The SCRCA is fully booked until the end of the school year and expect to 'see' a total of 4,000 students by the end of June. For a full list of our current programs check www.scrca.on.ca/govirtual.

French Programming Summary

Since January 2021, the SCRCA has been offering live-stream programs to French and French immersion schools, which has become popular with both teachers and school

boards. Schools from Chatham, through to the GTA and all the way to Ottawa have participated and have provided great feedback. Between the maple syrup program offered in the spring to the pond studies and biodiversity hikes currently being run, approximately 1,000 French and French immersion students have been reached.

Live-Stream from the Canoe Pilot Program

On June 1st, students from the Lambton Kent District School Board (LKDSB) Virtual School were invited to participate in 'Live-Stream from the Canoe' webinars with the SCRCA. LKDSB Virtual School approached St. Clair to offer this equitable opportunity to all their students. Over the course of the day, 3 webinars were delivered – one for Kindergarten to Grade 3, one for Grade 4 to Grade 8, and a third for all Virtual French Immersion Students. Overall, 48 teachers and approximately 1,300 students participated in the Pilot Program. Looking forward, LKDSB virtual school will be booking additional webinars with St. Clair in the fall of 2021. Benefits gained by this pilot include, expanding St. Clair's reach by 'meeting' new teachers, and ensuring inclusion in the 2021-2022 Virtual School program.

Western Lake Erie Student Summit Project

In partnership with the Upper Thames River Conservation Authority (and 4 other Conservation Authorities from Southwestern Ontario), the St. Clair Education Team worked with students in both the SCRCA and Lower Thames Valley Conservation Authority (LTVCA) watersheds as part of the 'Western Lake Erie Student Summit', funded by the Ministry of the Environment, Conservation and Parks (MECP). Students participating in this virtual summit project were first engaged in the 'classroom' to learn more about Western Lake Erie and the issues the Lake faces. Students were then tasked with innovating new ways to address these issues. Finally, the students from 15 schools across the Western Lake Erie watershed met June 2nd and June 9th at the virtual Western Lake Erie Student Summit to share their ideas and continue their Lake Erie learning.

Great Lakes Virtual Field Trip Project

The St. Clair Education Team has completed the Huron-Erie Corridor Great Lakes Virtual Field Trip, funded by Ministry of the Environment, Conservation and Parks (MECP). The project was launched April 29th, 2021. To date the Huron-Erie Corridor Virtual Field Trip has been 'viewed' by approximately 550 teachers/students/community members. The response from MECP has been very positive, and the St. Clair Conservation Education Team has been invited to participate in upcoming webinars speaking to MECP and other organizations to promote the Virtual Field Trip and broaden the reach of this project. To view the Huron-Erie Corridor Virtual Field Trip visit <https://bit.ly/GLHuron-ErieCorridor>.

Virtual Field Trips

To date, approximately 900 students have benefited from the Virtual Field Trip subscriptions. In addition, these Virtual Field Trips created during the spring of 2020, have proven to be useful tools to enhance other education programs. For example, the 'Flooding 101' program was shared with all Spring Water Awareness Workshop participants, as an opportunity for the teacher to extend learning.

Kettle and Stony Point First Nation – Canadian Nature Fund, Year 3

Although in-person sessions between students at Hillside School and St. Clair's Education Team have been interrupted by COVID-19, many aspects of this project have proceeded. The relationship growth between this First Nation school and the SCRCA are difficult to quantify, however some interesting highlights include: an invitation to 'partner' in all aspects of the development of Hillside's 'Land-Based' education initiative, an invitation to observe the Principal while delivering traditional knowledge to students, and an invitation to participate in community events, including a memorial held June 3rd for Hillside students to process and begin to heal from the Kamloops residential 'school' tragedy. In an effort to connect with the students, the SCRCA will be offering 'Live-Stream with a Naturalist' programs to each class in the school June 22nd and June 23rd.

8.1 (n) That the Board of Directors acknowledges the report dated June 9, 2021 on the Conservation Education Progress Report.

SCRCA Conservation Scholarship Program 2021:

Every year, four scholarships are available to graduating high school students who are pursuing post-secondary studies in an environmental field (e.g., biology, ecology, agriculture, etc.). Eligible students must live in or attend a secondary school within the SCRCA boundary.

The applications are scored based on marks; interest and activities as they relate to conservation and the environment; future studies as they relate to conservation and the environment; reference letter(s); and other comments offered by the applicant.

Applications for the 2021 SCRCA scholarships were due on May 31, 2021. In total, 10 applications were received. The applications were reviewed by a committee established by the St. Clair Region Conservation Foundation consisting of Norm Giffen, Archie Kerr, Brian McDougall, and Donna Blue. The Foundation Board of Directors approved the recommended scholarship recipients at their meeting on June 3, 2021.

The following awards will be presented in the coming weeks.

A.W. Campbell Memorial Scholarship (\$1000):

- Zachary Zavitz, Strathroy District Collegiate Institute, Strathroy
- Nicole Guthrie, Northern Collegiate Institute and Vocational School, Sarnia

Tony Stranak Conservation Scholarship (\$500):

- Johanna Ni Xiu DeKoning, Holy Cross Catholic Secondary School, Strathroy

Mary Jo Arnold Conservation Scholarship (\$500):

- Lucie Slakmon, Northern Collegiate Institute and Vocational School, Sarnia

In recognition of the SCRCA's 60th Anniversary, the Foundation generously approved an additional \$2,000 in scholarship funding that will be distributed between all ten applicants as a one-time "60th Anniversary Bursary".

8.1 (o) That the Board of Directors acknowledges the 2021 Scholarship Program report dated June 8, 2021.

RAP Coordination

On March 9, 2021, a letter was submitted to the AOC Annex leads to consider the redesignation of the *Fish Tumours and Other Deformities* Beneficial Use Impairment (BUI) from *Requires Further Assessment* (RFA) to *Not Impaired*. An unofficial announcement was made at the CRIC meeting on June 8, 2021 that the redesignation has been supported and that an official memo is being drafted. Upon receipt of this memo, this BUI will be redesignated to *not impaired*.

The Initial Draft Status Assessment Report for BUI 9-*Restrictions on Drinking Water Consumption or Taste and Odour Problems* was presented to the Canadian RAP Implementation Committee (CRIC) on June 8, 2021. The report is now under review and will be updated for a formal decision at the next CRIC meeting. This BUI is currently considered *impaired*, and the report recommends redesignation to *not impaired*.

The Initial Draft Status Assessment Report for BUI 3-*Degraded Fish and Wildlife Populations* was presented to the Canadian RAP Implementation Committee (CRIC) on June 8, 2021. The report is under review and will be updated for a formal decision at the next CRIC meeting. This BUI is currently considered *requires further assessment*, and the report recommends redesignation to *not impaired*.

Meetings

Canadian RAP Implementation Committee (CRIC)

- June 8, 2021 – Teleconference
- Next Meeting: TBD

Friends of the St. Clair River (FOSCR)

- April 7, 2021 – Special Meeting – Teleconference
- May 11, 2021 – Special Meeting – Teleconference
- June 7, 2021– Teleconference
- Next Meeting: June 28, 2021 – Signage Project Sub-committee - Teleconference

Binational Public Advisory Council (BPAC)

- May 4, 2021 – Teleconference
- Next Meeting: TBD

Events

Due to restrictions associated with the COVID-19 pandemic, the St. Clair River Science Symposium was converted to a 3-part virtual series for 2021-22. The first session was held on April 21, 2021 from 6:30pm-7:30pm and was attended by 42 individuals. The event recording is now available online at friendsofstclair.ca/symposium. Planning for the second virtual session is underway and will be held in early September.

Outreach and Engagement

A survey has been launched to collect information from individuals who fish the St. Clair River. This survey will collect information about fishing locations, fish consumption behaviors, and limited demographics about the individual. This survey supports the advancement of BUI 1- *Restrictions on Fish and Wildlife Consumption* and was identified as a deliverable in the 2017-2022 St. Clair River Area of Concern Workplan. The survey can be completed at friendsofstclair.ca/fishsurvey/.

A Story Map has been launched for the Canadian portion of the St. Clair River Area of Concern. This is an interactive, web-based communications tool that highlights the overall progress of the AOC, as well as details on many of the individual projects that have been completed along the river to support the restoration of each Beneficial Use impairment. The Story Map can be viewed at bit.ly/StClairAOC.

The Friends of St. Clair River and the RAP Office continue to partner on the production of St. Clair River News, a free monthly E-Newsletter. The goal of this newsletter is to increase awareness and engagement in the Area of Concern and highlight environmental initiatives happening in the region.

Links to Monthly Newsletters:

- [April 2021 E-Newsletter](#)
- [May 2021 E-Newsletter](#)

Strategic Objectives(s):

Goal 2 – Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes.

8.1 (p) That the Board of Directors acknowledges the report, dated June 10, 2021 on the St. Clair River Area of Concern.

The April and May, 2021 disbursements were reviewed.

BD-21-59

Burrell – Scott

“That the Board of Directors approves the April and May, 2021 disbursements as presented in the amount of \$2,463,774.63.”

CARRIED

WECI 2021-2022 Projects:

- SCRCA had submitted seven projects for WECI 2021 - 2022 program
- A total of 85 projects have been submitted from 30 CA's
- All applications have been reviewed by a committee of Provincial and Conservation Authority staff representatives
- All submitted projects were scored based on established WECI scoring guidelines.
- SCRCA was **successful** in securing WECI funding for 3 projects

Structure	Project Name	Description of Work	Total Project Cost	Grant Requested
Sarnia Shoreline Protection	Shoreline Repair (Helen and Kenwick St) Phase 3A	Carry out Shoreline stabilization for Phase 3A	\$766,600	\$383,300
Head Street/ Coldstream Dams	Decommissioning Study	Study to consider decommissioning of the Head street and Coldstream dams	\$120,000	\$60,000
All Dam Structures	Engineering Inspection	Engineering Inspection of all authority owned dams	\$60,000	\$30,000

Director's Comments:

Director Mike Stark gave congratulations to Director of Water Resources, Girish Sankar and his department in respect to the WECI proposals and the 3 positive outcomes from those applications. Questions arose regarding low water levels and whether these conditions have been helpful or detrimental of the work being completed. Girish Sankar explained that the low water levels have provided a positive impact on the visibility of work being done and although Federal and Provincial approvals remain challenging to obtain, it has been found that pre-consultations have been helpful in moving projects forward.

BD-21-60

McMillan – Stark

“That the Board of Directors acknowledges the report dated June 11, 2021 on the updates to the WECI funding for 2021 - 2022 and further will assist staff in obtaining Municipal matching funds.”

CARRIED

Bright's Grove, Kenwick Street to Helen Avenue – Phase 3A

- R&M Contractors was awarded the contract on January 21, 2021 for \$2,618,713.25 inclusive of HST.
- Shoreline construction work started on February 17, 2021
- All shoreline work has been completed as of June 9, 2021
- Construction work has been very smooth with no issues
- Restoration work is underway
- We continue to receive positive feedback from the City of Sarnia and its community members.

Old Lakeshore Road West

- Planning for the next phase of shoreline protection along Bright's Grove is underway
- This will include approximately 230 m of shoreline between Pine Avenue and Penhuron Drive
- Shoreplan Engineering Ltd has completed design work
- Permit applications will be submitted to MNRF and DFO by mid June
- Construction work is expected to start in October 2021.

Port Lambton Park

The project site is located in Port Lambton along the east shore of the St. Clair River. The site includes a shoreline starting at the north of Queen Street and stretches south a distance of approximately 240 meters. The current shoreline of the site includes varying structures, steel sheet pile, steel sheet pile wall supported by timber piles, concrete rubble, stacked concrete. The condition of the shoreline is poor and needs restoration.

SCRCA forwarded a selective RFP to consulting firms to provide a well-considered proposal for design services.

- SCRCA received two submissions for this design project.

Shoreplan Engineering Ltd	\$38,950 + HST
TRUE Consulting	\$39,953 + HST

- Staff recommend the acceptance of low tender submitted by Shoreplan Engineering Ltd for design services.

BD-21-61

Burrell – Gordon

“That the Board of Directors acknowledges the report dated June 9, 2021 on the status of Shoreline projects across the watershed and further approves the proposal from Shoreplan Engineering Ltd for design of new shore protection structure along Port Lambton Park.”

CARRIED

Under New Business

Director Brad Loosley brought forward the following carried motion from the Town of Petrolia, moved by Wade Deighton and seconded by Grant Purdy:

“WHEREAS the Council of the Town of Petrolia has defeated a support request from the St. Clair Region Conservation Authority, in relation to their board composition;

AND WHEREAS the St. Clair Region Conservation Authority is in the process of filling a vacated CAO position;

AND WHEREAS the Province has put into place new Legislation for all Conservation Authorities,

AND WHEREAS the present Conservation Authority consists of 20 members, compared to the Ausable Bayfield Conservation Authority who restructured a number of years ago and reduced their number on the Committee down to 9 members.

AND WHEREAS the St. Clair Region Conservation Authority has not considered restructuring for approximately 30 years.

NOW THEREFORE BE IT RESOLVED:

THAT the Council of the Town of Petrolia request that the St. Clair Region Conservation Authority look into the possibility of restructuring the Committee from the 20 members, to 11 or 13 as a suggestion. AND THAT Mr. Bob Bailey MPP for Sarnia Lambton, the Conservation Authority, the County of Lambton and the Municipalities of Lambton be circulated this motion.”

Correspondence regarding this motion has been circulated to SCRCA member municipalities for inclusion on council agendas.

General Manager, Brian McDougall provided further comment regarding the changes in cabinet structure. In addition to the new Minister for the Ministry of Environment, Conservation and Parks (MECP), the Ministry of Natural Resources and Forestry has been added to the portfolio of the Ministry of Northern Development of Mines, now known as the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR), of which our flood control programs now fall under. It is hoped

that despite working with a larger scope of services, focus remains on our aspect of their business in flood response.

Director Netty McEwen announced that she will be replaced on the SCRCA Board of Directors by Town of Plympton-Wyoming council member, Tim Wilkins. Chair Joe Faas thanked Netty for her time on the board and wished her well with her continued work on council.

BD-21-62

Scott – Brown

“That the meeting be adjourned.”

CARRIED

Joe Faas
Chair

Brian McDougall
General Manager



Board of Directors Special Meeting Minutes

Date: August 20, 2021 Time: 9:00 a.m.
 Royal Canadian Legion Branch 116, Strathroy

Present: John Brennan, Pat Brown, Terry Burrell, Bill Dennis, Joe Faas, Chair; Larry Gordon, Vice Chair; Aaron Hall, Frank Kennes, Brad Loosley, Betty Ann MacKinnon, Kevin Marriott, Mark McGill, Steve Miller, Frank Nemcek, Lorie Scott, Mike Stark, Jerry Westgate, Tim Wilkins

Regrets: Al Broad, Dan McMillan

Staff Present: Donna Blue, Manager of Communications; Erin Carroll, Director of Biology; Melissa Deisley, Director of Planning and Regulations; Sarah Hodgkiss, Manager of Planning and Natural Heritage; Sarah Hume, Payroll/ Accounting Clerk; Ashley Fletcher, Administrative Assistant/ Board Coordinator; Brian McDougall, General Manager; Tim Payne, Manager of Forestry; Tracy Prince, Director of Finance; Girish Sankar, Director of Water Resources; Steve Shaw, Manager of Conservation Services;

Guests Present: Jason Cole and Ken Melanson, County of Lambton; Tim Dobbie, Paul Emerson and Laurie-Anne Poole, Tim Dobbie Consulting Ltd.; Greg Houston, Municipality of Chatham-Kent

The Chair welcomed everyone to the meeting. It was requested that each Director declare a conflict of interest at the appropriate time, on any item within this agenda in that a Director may have pecuniary interest.

BD-21-63

Dennis - Loosley

“That the Board of Directors adopts the agenda for the meeting as presented.”

CARRIED

A presentation was provided by Tim Dobbie, of Tim Dobbie Consultants Ltd.

1. Introduction

The St. Clair Region Conservation Authority play an integral part in the development application process review of the seventeen municipalities located in the SCRCA area. In October 2020, the Board of Directors of the SCRCA engaged Tim L Dobbie Consulting to do a development application process review. This report contains the results of that review as well as several recommendations for the Board of Directors.

The review has been a series of detailed discussion with all parties involved in the development application process in the SCRCA. These included SCRCA staff,

members of the SCRCA Board of Directors, staff of the seventeen municipalities and two counties, as well as many representatives of the development community. This activity has given us a good understanding of the development application processing in the area.

We have also chosen to compare seven other Conservation Authorities in Ontario to provide insight into best practices from other Conservation Authorities. This comparison has provided us with valuable information that is helping to frame our recommendations to the Board of Directors of the SCRCA.

2. Study Methodology

The review process started with detailed discussions with the appropriate staff at the SCRCA. Brian McDougall, General Manager, put together a small staff advisory team to deal with our process on a regular basis. The staff team included, in addition to Brian, Sarah Hodgkiss (Planning Ecologist), Melissa Deisley (Regulations Coordinator), and Chris Durand (Manager of GIS/IT). This team met regularly throughout the process with the consultants including Paul Emerson, Laurie- Anne Poole and Tim Dobbie. In addition to this team, seven other staff members who work closely the Planning & Regulations department were interviewed by the consultants.

Each member of the SCRCA Board of Directors was invited to participate in an interview with the consultants. More than half of the board members participated in the interviews, and they provided excellent input to the review.

The consultants met with select staff of the 17 member municipalities and 2 counties within SCRCA's watershed. These meetings were carried out by Zoom with two consultants and up to three members of the municipal staff including the CAO, a planner and a public works or drainage superintendent. Some municipalities had their own internal consultants on the call who were involved in their development review process. Tim L. Dobbie Consulting Ltd. was asked to make a presentation to the Lambton County CAO group to update the CAOs on the process we were following with this project. The consultant also met with both the Manager of Planning and Development Services and the Chief Building Official for Lambton County as well as the Director of Planning for Middlesex County, with one or two members of the SCRCA staff advisory team joining in these meetings.

In order to engage the development community, the consultant asked for names and contact information of developers, technical consultants (e.g. Engineers, ecologists), contractors etc. from each municipality as well as from the staff of the SCRCA. This resulted in us sending out 125 emails inviting a response from the development community. Fifty of those emails went to all members of the Sarnia Homebuilders Association who contacted us separately.

In our process we did not interview members of the general public, but we feel it necessary to include their voice as a very large, important consumer of SCRCA planning and regulations services. In fact, regulations permitting requires the most staff resources of the department and handles a significant and increasing case load. With respect to increased wait times for services, regulations permitting has the larger bottleneck and therefore a larger voice as far as customer satisfaction is concerned than planning review.

The final phase of our work involved reaching out to seven Conservation Authorities to collect data and best practices to compare to SCRCA in terms of application review and processing. The other Conservation Authorities' staff were each interviewed by two members of the consulting team. The other Conservation Authorities requested copy of this final report to the SCRCA Board of Directors.

We note that all of the meetings described above were completed over Zoom due to the COVID-19 situation, with most people working from home. We also recognize that everyone who was interviewed is facing a very significant increase in the development activity in the SCRCA watershed. According to the Lambton County staff, applications have increased by 50% over the previous year for the first three months of 2021.

3. The Role of the SCRCA in Development Application Processing

The following section provides background context on governance issues regarding Conservation Authorities as well as a review of the recent legislation changes impacting the SCRCA.

Conservation Authority Regulations

In the 1970s the "Fill, Construction, and Alteration to Waterways" regulations were enacted under the Conservation Authorities Act. These replaced floodplain regulations from the 1960s and gave Conservation Authorities broad powers to regulate floodplains, associated steep slopes and some defined wetlands. Through the 1980s and 1990s, many other wetland areas (provincially and locally significant) were identified and became part of the regulated areas.

Also, through the 1990s, the Department of Fisheries and Oceans began to focus more on the protection of fish habitat on inland watercourses (not just oceans boundary waters and large lake systems). Many Conservation Authorities negotiated agreements with the DFO and became the local delivery agents for their regulations that were made under the Federal Fisheries Act.

As urbanization began to intensify across Ontario, storm water management became a major concern. Conservation Authorities also began to play an important technical advisory/regulatory role in assisting municipalities to address this issue.

In 2006, the Minister of Natural Resources approved the individual "Development, Interference and Alteration" Regulations for all CAs consistent with Ontario Regulation

97/04. The St. Clair Region Conservation Authority's individual regulation stemming from this process is Ontario Regulation 171/06. Through these regulations, CAs are empowered to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes shorelines, watercourses, hazardous lands and wetlands. These regulations ensure conformity of wording across all CA's and complement municipal implementation of provincial policies under the Planning Act. Development taking place on lands that meet the definitions in the Act and text of the Regulation may require permission from individual Conservation Authorities to confirm that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land are not affected. They also regulate the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or the changing or interfering in any way with a wetland.

The following objectives provide the basis for the decision-making process for implementing the Authority's regulation and permit process:

- Prevent loss of life,
- Minimize property damage and social disruption
- Reduce public and private expenditure for emergency operation, evacuation and restoration,
- Minimize the hazards and unnecessary development of riverine flood plains and flood and erosion susceptible shoreline areas which in future years may require expensive protection measures,
- Regulate works and development which, singularly or collectively, may reduce riverine channel capacities to pass flood flows resulting in increased flood levels, and creating potential danger to upstream and downstream landowners,
- Control filling and/or drainage of natural storage areas such as wetlands and valley lands,
- Encourage the conservation of land through the control of construction and placement of fill on existing or potentially unstable valley slopes or shoreline bluffs,
- Reduce soil erosion and sedimentation from development activity,
- Control pollution or other degradation of existing and potential groundwater aquifer(s) and aquifer recharge areas, created by fill activities: and
- Control water pollution, sedimentation and potential nuisances due to floating objects and debris.

Planning Role

Concurrent with the evolution of the Conservation Authority regulations, the Conservation Authorities also took on a more proactive role as a commenting agency under the Ontario Planning Act (1990). Depending on the watershed needs, and the technical expertise of individual CAs; these comments could address a very wide range of issues (i.e., CA regulated areas, fish habitat, storm water management, other natural

heritage features, and more recently climate change etc.).

In the 1990s, the province moved to a one-window commenting role for Planning Act applications, through the Ministry of Municipal Affairs (MMAH), for Provincial Ministries. In 1995, a Memorandum of Understanding with MMAH and the Ministry of Natural Resources (MNR) clarified the role of Conservation Authorities. Conservation Authorities were delegated natural hazard responsibilities related to floodplain management, hazardous slopes, Great Lakes Shoreline and connecting channels, and erosion. The technical basis for this commenting role derives from the Ministry of Natural Resources Natural Hazard Technical Guides.

At this time, many Conservation Authorities were given the opportunity to negotiate Memorandums of Understanding with their municipal partners and provide technical advice in areas where the Ministry of Natural Resources and Ministry of the Environment were no longer directly involved at the local level.

Conservation Authorities were circulated planning applications by the municipality and participated in pre-consultation meetings as a commenting authority. They provided their comments and had the opportunity to appeal to the LPAT (formerly OMB).

The Planning Act is implemented through the Provincial Policy Statement (PPS), which was most recently updated in 2020. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. The PPS supports improved land use planning and management, which contributes to a more effective and efficient land use planning system. Provincial plans and municipal official plans provide the framework for comprehensive, integrated and long-term planning that supports and integrates the principles of strong communities, a clean and healthy environment and economic growth, for the long term.

In accordance with the Planning Act, municipalities are responsible for the implementation of the natural heritage policies of the PPS. SCRCA provides natural heritage technical review and commenting services on behalf of our member municipalities, as per their request to provide this service, due to a lack of technical expertise at the municipal and County level.

2020 Amendments to the Conservation Authorities Act

On November 5, 2020, the province introduced proposed amendments to the Conservation Authorities Act through Bill 229. These proposed changes will impact some of the programs and services that CAs deliver as well as their role in planning and permitting. The province has indicated that these changes will improve transparency and consistency, strengthen provincial and municipal oversight, and streamline CA roles

in land use planning and permitting.

It is anticipated that regulations to implement the Act, and further define the mandatory programs and services, will be released for public comment in December and early in the new year.

Proposed Amendments

- Will narrow the objects of the CAs to (i) mandatory programs and services, (ii) municipal programs and services (ie. service agreements between municipalities and CAs), (iii) other programs and services (that would require municipal agreements if levy dollars used).
- Remove the CAs as a public body under the Planning Act and name them under the MMAH one window for purposes of appeals.
- Remove the power of CAs to expropriate lands.
- Direct appeals of CA permit decisions through LPAT.
- Authorize the Minister of MNRF to take over a permit application under Section 28 of the CA Act.
- Limit the ability of CA officers to enter land without a warrant to specific situations only.
- Municipalities may only appoint elected municipal councilors to the CA boards (no members of the general public).
- Minister of MNRF may appoint a member to CA boards that represents the agricultural community.
- Limit the terms for Board Chairs and Vice-Chairs.

The proposed amendments to the CA Act are designed to make the Conservation Authorities more accountable to the province and the watershed member municipalities. These changes will be further refined as the province implements these amendments through new regulations, policies and other legal instruments.

Under this new policy regime, it is critical that the St. Clair Region Conservation Authority be fully engaged with their municipal partners to further define the role of the CA in land use planning and permitting.

It is important to focus on being “value added” and “service delivery oriented” and understand that the SCRCA’s role is to protect life and property from natural hazards such as flooding and erosion, and to protect, manage and restore our natural systems, including woodlands, wetlands, waterways and lakes, but at the same time be cognizant of the need to help facilitate economic growth.

While finding this balance may at first appear to be a difficult task, it can be done through an understanding of the applicable legislation, and clear communication

between all parties involved in the process.

4. Development Application Processing Inputs

This part of the report provides a summary of the input that we have received through this review from all of the partners in development application processing. The reader will see that there is a mixture of supportive and critical comments from the partners. The consultants believe that there is a way to build on the supportive comments and recognize the critical comments to put the SCRCA in a very positive position with respect to development moving forward.

However, it should also be understood that many of the respondents (some staff, Board members, municipalities and developers) expressed a cynicism that this could become another report that sits on the shelf, with no action taken. It was suggested that "we have been down this road before, and nothing was done". There is a strong desire among the parties to see that improvements are forthcoming. The status quo is not acceptable.

A. Staff of the SCRCA

The consultant interviewed eleven staff members involved in the development application processing. The following represents the comments heard from the majority of the staff.

- Staff indicated that the three main issues facing the SCRCA are funding, staff turnover resulting in loss of institutional knowledge and the need for additional staff to meet the increased development applications in the SCRCA area.
- The previous fifteen months have been difficult given the virus, the increase in the development activity and the inability to fill the manager position in the planning and permits area.
- Staff indicated that they have been under significant pressure brought to bear by increased applications received at the seventeen municipalities. Staff indicated that they are working as hard as possible to keep up to the development applications received. The SCRCA staff have also mentioned that on occasion some municipalities did not bring them in at the start of the development application processing. This has provided additional challenges for the staff.
- Staff indicated that the interactions between staff involved in the development application processing and other departments at the SCRCA are working well.
- Staff believe that the position of Manager of Planning and Regulations currently vacant, should be replaced by a "Director" when filled.
- Staff indicated that the work carried out by the Planning and Regulations group is done in a very cooperative and professional environment. Staff indicated that they are not trying to stop development but are trying to promote development in appropriate areas.

- To improve the development application process, a better relationship is required between the SCRCA and the seventeen municipalities. Development applications need to be complete, and each municipality needs to ensure that the SCRCA is involved by the municipalities at the beginning of the process.
- Staff confirmed that there is a significant increase in applications.
- Staff supported a need for a memorandum of understanding with the municipalities in order to clarify the relationship between the SCRCA and the municipalities. Staff indicated that they have started work on this item but due to the workload with increased applications, the project is not completed.
- Staff suggested that they would be interested in having a closer relationship with the Board of Directors by perhaps updating key development issues at each board meeting.

B. Members of the Board of Directors

- The Board members indicated that they thought the development application processing abilities of the staff was excellent, and they emphasize the importance of natural habitat and proper control of draining issues.
- The Board recognized the existing staff shortages as well as the increase in development activity. They expressed that their hope for the future would be a more expedited process regarding development applications.
- The Board mentioned that in their response to development applications, staff should clearly indicate those that are required under legislation by the Conservation Authorities, and those comments that are just recommendations or suggestions. (For the past 2 years, the SCRCA staff are doing this and using the template from Conservation Ontario)
- The Board members felt that there should be an increase in the level of service provided to the municipalities in the SCRCA area. There should be increased communication with municipalities and customer service standards that are implemented and enforced. (This is included in the recently amended changes by the Province).

C. Municipalities in the SCRCA Area

The consultants interviewed fifteen of the seventeen municipalities in detail. The following represents the majority views of the municipalities.

- When asked to describe the three major issues facing the Municipality in development application processing, they indicated that the number of applications has increased significantly, the parcels of land that developers are trying to develop are the lands remaining that have significant issues to be dealt with before development and the Conservation Authority are not staffed up enough to respond to all this development.
- While each municipality has its own development review process, there are a number of commonalities. The majority of the municipalities use predevelopment

- review meetings, require a complete application, try to give the developer a total list of the requirements up front, and have various forms for public input.
- Municipalities commented on the relationship with the SCRCA development staff as very specialized, professional and knowledgeable. The municipalities indicated that given the shortage of staff in the Conservation Authority, they have noted greater delays in their response.
 - The municipalities also provided some critical comments about the SCRCA response to development application processing. As an example, municipalities stated:
 - That the SCRCA does not communicate very effectively
 - They need to meet with us when the application is first dealt with
 - They comment on things not required.
 - Often waiting for weeks to get a response.
 - The municipalities thought that the Conservation Authority should present their budgets to councils with goals and objectives to get buy-in. On major development applications, be present at Council and develop a better process with each municipality. From the municipalities' point of view, they support having a better relationship with the Conservation Authority.

D. The Development Community

The interviews with the development community included discussions with developers, planning consultants, engineering consultants and drainage officials. The development community are involved in all types of construction activities including residential commercial and industrial. The level of development in the SCRCA area is extremely busy and the development community is hoping that will continue.

- Developers who have developed for a number of years in the area indicated that they were aware of the shortage of staff at the SCRCA however they did say that recently the SCRCA are significantly behind in dealing with development.
- The majority of the developers hoped that the SCRCA would engage additional employees to deal with the developments that are occurring in the SCRCA area.
- Several developers mentioned that they felt that the Upper Thames provides much better service to the development community than the SCRCA.
- Every developer had their own story to relate regarding their relationship with the SCRCA. Most developers recommend that the Conservation Authority hire enough people to deal with the present level of development and that staff of the SCRCA should work much more closely with the municipalities going forward.
- The majority of the developers contacted indicated that the fee charged to developers is not the issue, it is the level of service being provided by the SCRCA. The developers favour increasing the fees to pay for a much-improved level of service for the development community.

E. Input from Other Conservation Areas

Part of the work program is the review of what other Conservation Authorities in Ontario do with respect to development application processing in their area.

The following seven Conservation Authorities were chosen as comparable by both the consultant and the SCRCA team. These include:

Ausable Bayfield Conservation
Catarauqui Conservation
Grand River Conservation Authority
Nottawasaga Valley Conservation Authority
South Nation Conservation Authority
Saugeen Conservation
Upper Thames River Conservation Authority

The following is a list of comments and best practices.

- Most Conservation Authorities have memorandums of understanding with municipalities, but everyone acknowledges them out of date.
- Most CA's have acknowledged that they should be updated with new regulations coming out of the Province of Ontario.
- Conservation Ontario has provided a template for planning comments with most distinguishing between mandate and advisory comments.
- Permit applications and planning application numbers are increasing significantly.
- Several CA's issue clearance letters for minor things, rather than go through a full permitting process.
- All CA's provide some form of triage to the processing of permit applications.
- No CA's achieve full cost recovery through the fees; some achieve 50%, others less than that. Many are considering increasing fees.
- Fee structure can vary for developers versus private citizens or municipalities.
- All CA's attend pre-consultation meetings (when it applies to them).
- Outreach and communication with their municipal partner and watershed residents are considered to be critical (website, open forums, municipal information days, municipal presentations).
- Proper technical resources are also crucial i.e., floodplain mapping, Lidar etc.
- Input from in-house staff with technical expertise is very important.
- Individual staff members can and should process both planning and permit applications.
- These staff members should be responsible for a specific geographic part of the watershed leading to a much more efficient operation.
- Staffing numbers for planning/regulation staff in all CA's is higher than

the SCRCA.

- It is very helpful if CA's Planning staff have some municipal experience so they can understand the municipal process. The CA needs to see itself as a partner in the municipal planning process.
- Tone and respect in written responses and conversations is extremely important.

A comparison chart, showing information on each of the Conservation Authorities including the SCRCA was reviewed. It demonstrates:

- The numbers provided include a number of municipalities in each Conservation Authority.
- The number of permits and planning applications for both 2018 and 2020.
- Those who are using memorandums of understanding with their municipalities.
- The number of planning and regulation staff is included.
- The amount of the general levy from the municipalities expressed as a percentage of the conservation authority budget.

We received additional comments from each of the seven comparators and we will be using these in the next chapter of the report relating to consultant's observations.

5. Consultant Observations and Recommendations

5.1 Observation: Principles of a new relationship with municipalities

We suggest that the principles of a new relationship with municipalities in the SCRCA area would consider the following:

- i) Staff of the SCRCA need to become an integral part of each municipality's development application processing team. This would require the SCRCA to work with a schedule of development application processing provided by each municipality.
- ii) There would be agreements on common timelines and best practices related to customer service with respect to communication standards for the development community, residents and municipal staff.
- iii) The SCRCA should develop a practice of response to development applications distinguishing between mandate and advisory comments.
- iv) The memorandum of understanding with municipalities must include reference to times when the SCRCA would be able to attend the municipalities Council meetings. This includes during budget time when the general levy is being discussed, at any time that an important development application is being considered by Council, and any other locations where there is mutual agreement that a presentation as required by the SCRCA.
- v) With the hiring of the new General Manager and the subsequent filling of the Director of Planning and Regulation by the end of the year, consideration should be given to the development of a key contact role whereby the SCRCA would provide each municipality with a key contact. This model is used by other

conservation authorities to monitor activities in each municipality to ensure that the SCRCA stays current with all issues in the municipality with a view to protecting the reputation and performance of the SCRCA.

- vi) The MOU would allow the SCRCA and each municipality to deal with technical issues with respect to development such as the recent issue on drainage matters.

5.1 Recommendation

That the Board of Directors of the St. Clair Region Conservation Authority support the development of memorandums of understanding with all of their municipalities. This is a requirement of changes made by the Province of Ontario with respect to Conservation Authorities. The Board supports that the MOU use would contain all of the necessary technical issues associated with the development application processing, but they would also include all the “principles” of a partnership as developed in this report.

5.2 Observation: Three Additional Technical Staff

We believe that the SCRCA needs to bring in three additional technical staff as soon as possible in order to keep up with the significant increase in the development application processing being incurred by the seventeen municipalities in the SCRCA watershed. The estimated cost of the 3 new positions is \$280,000 which could be funded through a 10% increase in the levy and a 10% increase in the fees for both 2022 and 2023

5.2 Recommendation

That the Board of Directors of the St. Clair Region Conservation Authority support increasing the capacity of the complement of staff from the current six, to 9. The timing of these 3 staff joining the SCRCA would be subject to the appropriate funding.

5.3 Observation: Sustainable Funding for the SCRCA

The SCRCA staff have indicated to us that funding is one of the key issues they deal with quite regularly. With the increase in the development activity in the SCRCA watershed, it is essential that funding be in place to allow the SCRCA to carry out its duties effectively. We believe that there are two areas of funding that could be increased including development fees and the general levy for municipalities.

We understand that the Board of Directors in the past have been reluctant to raise development fees. This is understandable as in the past, municipalities in the area were working hard to attract development. At the present time however, the municipalities are receiving significant increases in the amount of development applications, and we believe that the development community would prefer to pay more fees for a consistent and predictable development application process.

General levies appear to be quite low compared to the seven conservation authorities that we compared. We suggest that the Board make this a key work plan item with both the new General Manager and new Director of Planning and Regulation to bring to Council a realistic revenue strategy for the 2022 budget and beyond.

SCRCA staff are currently completing a draft of the 2022 budget for consideration by the Board of Directors in September of this year. This draft budget assumes an increase of 10% in both the general levy as well as development fees. (This was approved previously by the board) in order to fund the additional staff (3) recommended by this report it would be necessary for the board to approve an additional 10% for both the general levy and development fees in both the 2022 and 2023 budgets.

5.3 Recommendation

That the Board of Directors of the St. Clair Region Conservation Authority direct staff to consider the cost associated with the addition of 3 new technical employees and other corporate priorities to be funded by increases in both the levy and fees in the draft 2022 and 2023 budget.

5.4 Observation: Technologies

The amount of technology available for staff to do their work can have a large impact on efficiencies and service delivery. SCRCA IT staff were able to implement some significant changes that allowed staff better keep track of all activities as well as steps to facilitate access to information and maps while working remotely. Planning and Regulations staff have a “Case Manager” database that allows for recording and tracking of all “cases” within the department. This includes payment tracking and also reporting. In addition, there has been investment in a digital document management system that has all but eliminated all paper files in the department since 2018. The GIS team has also done their best to ensure that mapping is readily available both internally and to the public. That said, advancements in technology are always ongoing and because there are many other Conservation Authorities performing the same tasks, there are likely other technologies that might be available that would promote even greater efficiencies. For example, the Grand River Conservation Authority has an online permit application system that is almost completely automated.

5.4 Recommendation

That the Board of Directors support the investigation of additional technologies either from other Conservation Authorities or Municipal partners that might further enhance service delivery.

6. Appendix A – Submitted from SCRCA Staff

The St. Clair Region Conservation Authority (SCRCA) plays an integral role in the development application review process of our seventeen member municipalities located within the SCRCA's watershed. The Authority also plays a regulatory role for development or site alteration within areas defined under the Conservation Authorities Act. The same regulatory role also covers activities on municipal drains including extensive maintenance works, addition of outfalls, new municipal drains and drain enclosures.

Workload and Staffing

The increasing number of development applications and regulatory permit requests submitted to SCRCA for review and comment has significantly increased the workload within the Planning and Regulations Department over the past decade. Staff have been added to catch up to this trend when required. In 2010, two staff undertook most of the workload associated with development application commenting and regulatory permitting. By 2015, that number had doubled to 4 and by 2018, the staff providing these services had increased to 6.

It is important to note that in addition to the CA's evolving role in application review, it is increasingly common that the lands being proposed for development are complex in terms of natural hazards and natural heritage constraints, which require additional complex technical studies. The staff added to the department over the past decade have the expertise to advise and review these studies, which are necessary to meet provincial policy.

Fees

Staffing increases are costly, therefore at the direction of the Board of Directors, in 2019, SCRCA staff undertook a comprehensive fee comparison, comparing SCRCA's development application review fees with surrounding Conservation Authorities and Municipalities. A report was presented to SCRCA's Board of Directors, recommending annual increases to both municipal levy and planning review and permit fees to work towards a financial balance of cost recovery for SCRCA. This process is ongoing, but additional updates to both the levy and fees will be necessary to cover the costs of an increased level of service being requested by our stakeholders.

Given the regulatory nature of the work done in the Planning and Regulations Department, complaints from applicants are not unexpected. However, there have been increasing complaints from landowners and developers on the speed of response and cost of permits in the last two years. While the staff do obtain positive feedback from many of their interactions, the negative feedback is often communicated more quickly and frequently than the positive and is more likely to be carried forward to others (e.g.

Board members, Councillors, etc.).

COVID-19

Early 2020 brought a number of challenges to the Department. Within 4 weeks, 2 experienced staff, including the department manager, left for positions outside the organization, then the world plunged into the COVID-19 global pandemic. Staff, already reeling at the loss of their colleagues and the added workload they were being asked to undertake, were then asked to work from home and continue to meet the demands of the watershed's development community. Then in June and August of 2020, the department lost two more staff members, one temporarily to parental leave, and one to retirement.

Spinoff effects of COVID-19 resulted in increased numbers of building permit requests, as well as real estate transactions, and demand for subdivisions to move forward to meet an increase demand for housing. Clearly this was no small task and staff within and outside the department worked tirelessly to keep up with the workload under these new conditions. However, despite staffs' valiant attempts to keep up, wait times increased and complaints increased as well. The pandemic hampered hiring to fill the vacant positions further slowing the response to concerns being expressed by the community.

With respect to reviewing applications through our regulatory process (Ontario Regulation 171/06), there has been a significant increase in case load over the past 2 years and less staff at the SCRCA available to handle processing permits efficiently. In August 2020, Regulations staff was reduced to one staff member and therefore there has been a significant backlog in applications and processing inquiries. Existing vacant positions have since been filled, however it should be noted that there is a huge learning curve and specialized training to all positions in the Planning and Regulations Department, and therefore it takes time to get new staff up and running to the point where they can independently sign off on permits.

Customer Service Improvements

SCRCA staff have made a number of changes over the last three years to ensure the highest level of service possible with the resources we currently have. These include:

- Creation of a digital document management system to better manage storage and access to documents (including site plans, technical reports, applications, permits, etc.)
- Creation of a Case Manager database, by IT staff, to assist with:
 - tracking all contact information, communications and fees
 - associated with permits and planning applications, and
 - improved reporting and management of processing timelines.

- Note: This tool was critical for staff to continue flow of work while working from home during the COVID-19 shutdowns.
- A full-time Planning and Regulations Assistant/Clerk position was created in 2019 to improve response time to the increasing number of phone calls and emails directed to the department.
- The Assistant position was backfilled three times between June 2020 and April 2021, due to difficulty retaining staff for a one-year parental leave contract.
- Planning and Regulations staff have implemented standard practices as per Conservation Ontario and CA Collaborative recommendations. This includes a template for Municipal Plan Review responses.
- Staff from other departments have been recruited to handle additional case load (i.e. the Manager of IT/GIS has handled all real estate inquiries since 2020 and members of the administrative department have assisted with phone calls and fee collection).
- It is important to note that while this work is critical, this is taking other SCRCA staff from their already busy full-time jobs in other departments
- Staff issue clearance letters for minor development (i.e. pole barn, grain bin), rather than going through a full permitting process
- Staff work on applications in the order they are received, but do triage files to ensure emergencies, or simple permits can go ahead without further hold up
- SCRCA staff attend pre-consultation meetings whenever it is requested by Municipal staff.

Municipal Partnerships

It is important that SCRCA staff and Municipal staff have open two-way communication and a mutual understanding of respective roles and timelines in both planning and regulations (including drains). This will be addressed through the updates to the MOU's required under Provincial policy.

SCRCA staff make themselves available to provide preliminary comments on applications at the outset of the application process when they are made aware of the applications and the appropriate fees are provided. During the COVID-19 lockdowns, SCRCA staff continued to attend meetings over virtual platforms with municipal staff, developers, consultants, etc. Due to existing staff capacity, SCRCA does not have the ability to handle last-minute requests, or to 'fast-track' applications, therefore we request to be made aware of applications as early in the process as possible to help to inform applicants on any constraints or required studies. Due to the nature of some of the technical studies (e.g. Hydrogeological studies, environmental impact studies), there may be temporal or seasonal constraints that applicants will have to consider.

The Municipalities have continued to recognize that the CA staff possess training and knowledge related to natural hazards and natural heritage that current Municipal staff do

not possess. The CA's reports form an important part of Municipal reports on Planning Act applications.

Staff are often told by landowners that they were not aware that they required a permit through SCRCA until they were well into their municipal building permit application process. Again, two-way communication with the CA and Municipalities will help to streamline the process for landowners.

The current staff complement is not sufficient to deal with the increasing number of development applications that staff are handling. In order to achieve the service level that is being requested by Municipalities, developers, etc., additional staff will be required. Additional staffing to the Planning & Regulations department could include technical positions such as a permanent Engineering Technician, and additional Regulations Officer(s) to review applications and associated technical studies, as well as administrative positions such as an additional clerk to handle phone calls, process payments, screen applications, start files, etc. The department needs to be able to deal with incoming applications in a timely manner, as well as take back jobs that staff members from other departments are currently taking on (i.e. legal inquiries, document management, etc.)

Closing

SCRCA's Strategic Goals include:

1. Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion,
2. Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes, and
3. Build a stronger and more valued organization through business excellence.

SCRCA's Planning and Regulations staff are committed to providing a high level of service to the watershed's landowners and stakeholders, while ensuring that development is directed away from natural hazards and natural heritage features, to help create safe, livable communities. We look forward to strengthening our partnerships, improving transparency of our processes, and embracing tools and technologies to provide the best level of service possible.

A question and answer period followed the presentation, as well as discussion amongst attendees regarding options of cost recovery models. Input was also provided by guests from the County of Lambton, Jason Cole and Ken Melanson.

BD-21-64

Loosley – Scott

“That the Board of Directors acknowledges the presentation of the Planning Department Service Delivery Review Report provided by Tim Dobbie Consultants Ltd. And further that staff be directed to include the report recommendations in the draft 2022 budget.”

CARRIED

Correspondence from the Federation of Canadian Municipalities was reviewed.

BD-21-65

Burrell – Miller

“That the Board of Directors acknowledges the correspondence from the Federation of Canadian Municipalities, dated July 22, 2021 approving SCRCA’s request for funding under the Municipal Asset Management Plan, and directs staff to acquire proposals and further delegates the Chair and General Manager to approve the selected vendor and sign an agreement for services, subject to confirmation that all costs to undertake the work will be covered through the available funding.”

CARRIED

BD-21-66

Burrell – Scott

“That the meeting be adjourned.”

CARRIED

**Joe Faas
Chair**

**Brian McDougall
General Manager**

- It had been anticipated that the Administrative Office would move into Phase III of our Return To Work Plan in September, however with the increasing numbers of new cases in the Province (Fourth Wave) due to the Delta Variant any changes have been put on hold
- Authority staff will continue to monitor conditions and will report back to the Board on any proposed changes

Meeting Date: September 16, 2021
Report Date: September 8, 2021
Submitted by: Brian McDougall

Item 5.2

Subject: Conservation Authority Act changes and new Regulations under Bill 229 Workplan

Recommendation:

- That the Board of Directors acknowledges the report

Workplan Background:

- Bill 229 was passed in December 2020, included changes to the CA Act
- In the spring of 2021, the Province released a 'consultation guide' for developing the final regulations – SCRCA submitted comments via the Environment Registry
- It has been anticipated that the actual regulations would be circulated in August but we have been advised that we should expect them over the next few weeks
- However, the timelines which were included in the Consultation Guide have not been altered and time remains a very significant issue
- The following workplan is intended to put the required timelines and the work to be completed within those timelines into perspective

Draft Workplan:

- The release of the final regulations will be required to complete the Workplan, however any preparation that can be completed in advance will assist in adhering to the timelines
- Transition time has been extended to Jan 1 2023 – this should provide an opportunity to understand and implement changes in the levy system which may be proposed under the next phase of regulatory changes
- Extended time may be a possibility but will likely required the Minister's permission
- Commitment to Transparency (Item 6.1) – transition plans are due at year end 2021 and quarterly reports will be required in 2022
- Conservation Ontario is working with Authorities to prepare templates of the multiple documents and reports that are being required by the Ministry as we continue to implement these changes
- Programs and Services are to be allocated under one of three classes in the transition plan

- Mandatory Programs and Services (where municipal levy can be used without agreement) – these will only be fully defined with the final regulations
- Municipal Programs and Services – these are non-mandatory programs and services at the request of a municipality requires a MOU with municipality to receive levy
- Other Programs and Services – these are non-mandatory programs and services an authority determines are needed – requires a MOU with municipality in order to receive levy
- These MOUs are to be completed by the end of 2022 – this is an incredibly tight timeline and on top of that there are complicating issues:
 - Municipalities dealing with COVID-19 may not be interested in MOUs
 - Two elections in 2022
 - And the need to have a Transition Plan in place by the end of 2021 – not knowing the impacts of all the other influences
- Watershed-Based Resource Management Strategy is expected to be a requirement going forward – the Authority’s current strategic plan is due to be updated and should be considered as compliance in this situation – this may require the addition of numeric goals that have not been part of previous iterations
- The final version of this Workplan in combination with the Programs and Services Review will form the Transition Plan which is due at year end
- Municipal Memorandums of Understanding are due January 2023
- Proposed Timeline:
 - Mid Fall 2021
 - Review plan with municipalities / neighbouring CAs
 - Draft Planning Services Agreements / MOUs
 - By December 1
 - Programs and Services Inventoried and Categorized
 - Draft preliminary Watershed Based Resource Management Strategy – to be used in negotiating MOUs but may not be final until mid-2022
 - By End of December
 - Submit transition plan to Province and make available to the public
 - Programs and Services Inventoried and Categorized
 - By June 2022
 - Consultation on municipal MOUs and report to province
 - By mid-2022
 - Approvals and Posting

- Next Steps
 - Reallocate staff resources to complete Transition Planning, MOUs and Watershed Based Resource Management Strategy
 - Board approval of Work Plan following regulations being received from province



Conservation Ontario Council Report

From: Kim Gavine, General Manager and Bonnie Fox, Policy and Planning Manager

Date: March 29, 2020

Subject: Proposed Conservation Ontario Governance Accountability and Transparency Initiative and Endorsement of Steering Committee Representatives

Summary

Recent amendments to the *Conservation Authorities Act* include a number that relate to governance (see Attachment 1) in support of a provincial government commitment to improving CA accountability and transparency. On behalf of the collective CAs, Conservation Ontario has been communicating our commitment to accountability and transparency over the past several years and all CAs updated their administrative bylaws by December 2018. A CO Governance Accountability and Transparency Initiative is outlined for endorsement and includes the following three actions to demonstrate CA commitment in this regard: a) Updates to CA Administrative By-laws, b) Proactive Reporting on Priorities, and c) Promotion/Demonstration of Results (see Attachment 2). Individual CA resolutions in support of the three actions identified are also requested (see Attachment 3). To deliver on these actions and to advise CO staff, it is proposed a Steering Committee be established comprised of CAOs who volunteered to participate in development of this concept which was discussed at a General Managers Meeting on February 26, 2021.

Recommendation

- i) WHEREAS the provincial government has passed legislative amendments related to the governance of Conservation Authorities;*
- AND WHEREAS the Conservation Authorities remain committed to fulfilling accountable and transparent governance;*
- THEREFORE BE IT RESOLVED THAT Conservation Ontario Council endorse the Governance Accountability and Transparency Initiative and that the resolution be sent to the Minister of Environment, Conservation and Parks;*
- AND THAT Conservation Ontario Council request that all Conservation Authorities endorse a commitment to pursue governance accountability and transparency measures;*
- ii) THAT Angela Coleman (SNC), Chandra Sharma (NPCA), Jennifer Stephens (SVCA), Kim Gavine (CO), Linda Laliberte (GRCA), Lisa Burnside (HCA), Phil Beard (MVC), and Rhonda Bateman (LTC)*

Background

Conservation Ontario and the conservation authorities share the Provincial government's commitment to governance accountability and transparency. All conservation authorities approved their new Administrative By-Laws by December 2018 in compliance with the December 2017 amendments to the *Conservation Authorities Act*. The legislated deadline was achieved with funding support from the Ministry of Natural Resources and Forestry in 2017-2018, which enabled development and endorsement of the *Conservation Authority Best Management Practices (BMP) and Administrative By-Law Model* (Conservation Ontario, April 2018 as amended) document which includes Code of Conduct and Conflict of Interest policies. Despite these efforts, the Province continues to emphasize the importance of governance accountability and transparency and amendments were made to the *Conservation Authorities Act* through Schedule 6 of Bill 229 which received Royal Assent on December 8, 2020.

On February 2, 2021 a number of these clauses related to Conservation Authority governance were proclaimed and there have been a number of General Manager meetings (February 10, 26, and March 22) where actions on these clauses have been discussed. As outlined in the table in Attachment 1, the Required Actions and the BMP actions, in general, demonstrate accountability and transparency to the Province through compliance with the legislation, and of course to municipalities and the public in their implementation. An outcome of the February 26th meeting was to form a Steering Committee for the development of a Governance Accountability and Transparency Initiative. This Steering Committee met on Friday, March 19th and also advised on a draft of this Council report.

Current Status

i) Proposed CO Governance Accountability and Transparency Initiative

The Steering Committee has drafted a proposed CO Governance Accountability and Transparency Initiative that includes the following three actions to demonstrate CA commitment to Governance Accountability and Transparency: a) Updates to CA Administrative By-laws, b) Proactive Reporting on Priorities, and c) Promotion/Demonstration of Results. The full details of the "Governance Accountability and Transparency Initiative" are provided in Attachment 2 for ease of endorsement.

Demonstrating our commitment to Governance Accountability and Transparency enables conservation authorities to control the narrative that has been attributed to conservation authorities in general for the past several years. We heard it expressed as a 'problem' in the *Conservation Authorities Act* review undertaken in 2015-2018 and again in the more recent review. Ideally, Conservation Ontario would like to promote that all 36 CAs have supported the resolution in Attachment 3. It is noted that the General Managers have already been participating in the spirit of the Initiative through their willingness to participate in reporting on their progress with regard to the new governance legislative requirements.

ii) Conservation Ontario Governance Accountability and Transparency Initiative Steering Committee

It is proposed that the governance accountability and transparency initiative activities will be supported through leadership from a CO Governance Accountability and Transparency Initiative Steering Committee and support from CO staff to ensure effective implementation. The Steering Committee members identified in Recommendation ii) of this report have confirmed their ability to participate.

Conclusion

In order to best position Conservation Ontario and conservation authorities to address suggestions that our organizations are not accountable or transparent, Conservation Ontario proposes that Council endorse the following:

- CO Governance Accountability and Transparency Initiative, including its three proposed action areas (see Attachment 2);
- CAs passing resolutions (see Attachment 3); and,
- Membership of the Conservation Ontario Governance Accountability and Transparency Initiative Steering Committee.



Conservation Ontario Governance Accountability and Transparency Initiative

Conservation Authorities are committed to Governance Accountability and Transparency and will demonstrate that they have fulfilled requirements recently established in legislative amendments to the *Conservation Authorities Act* including a number of governance-related sections which were proclaimed on February 2, 2021.

CO Governance Accountability and Transparency Initiative

Working with Conservation Ontario, conservation authorities have identified 3 key actions that demonstrate their commitment to governance accountability and transparency including:

1. Updates to CA Administrative By-Laws

Ensure CA Administrative By-Laws are updated in fulfillment of legislative amendments to the *Conservation Authorities Act* being proclaimed over the course of 2021. This will be accomplished through the following activities:

- i) Notwithstanding that some CAs have already updated their bylaws further to the Feb 2nd proclamations; ASAP review understanding with MECP staff regarding sections to be proclaimed, scheduling, and the need for updates to CA administrative bylaws; and obtain any other confirmations as required.
- ii) Subject to i), undertake a comprehensive update of the *Conservation Authority Best Management Practices (BMP) and Administrative By-Law Model* (Conservation Ontario, April 2018 as amended), obtain legal review of amendments as necessary, and provide training to CAOs as necessary
- iii) Track all 36 CAs re: status of updated administrative bylaws
- iv) Provide ability for CAs to share sample policies in support of the new clauses.

2. Proactive Reporting on Governance Accountability and Transparency Priorities

Ensure proactive reporting on GAT priorities as initially identified as those governance-related clauses in the CAA that were proclaimed on February 2, 2021. This will be accomplished through the following activities:

- i) Identification and communication of Required Actions and BMP Actions for each of the newly proclaimed governance-related clauses.
- ii) Implementation of a tracking system to enable easy reporting on the status of the Actions and for collection of information that will enable the analysis of CA issues/impacts raised in relation to implementation of the clauses.

- iii) Bi-annual reports to Conservation Ontario Council on the status of priority Actions.

3. Promotion/Demonstration of Results

Evidence of governance accountability and transparency results will be promoted and demonstrated through communication materials and websites. This will be accomplished through the following activities:

- i) Promote the initiative and prepare analyses of results and appropriate communication materials, as necessary
- ii) Develop QA/QC checklist of governance material that should be available on CA websites to permit ease of public access. The checklist is proposed to include:
 - a. Members (individuals and Member agreements)
 - b. Administrative by-laws
 - c. Annual Meeting Schedule with information on how to participate
 - d. Agendas – full package
 - e. Minutes (to be posted within 30 days of meeting)
 - f. Audited financial statement
 - g. Annual Fee schedule
 - h. Other corporate documentation as available including Strategic Plans, Annual Reports, Watershed Report Cards
- iii) CO to track implementation of the QA/QC checklist and create CO webpage promoting Initiative and that this information can be found on CA webpages

Attachment 1: Governance Accountability and Transparency Initiative Current Priorities: Governance-related Clauses of the *Conservation Authorities Act* Proclaimed February 2, 2021 with Actions Required and Draft BMP Actions

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs
Municipal Appointments	14(1.1), 14(1.2)	At least 70% of a municipality's appointees must be municipal councillors. Municipality can apply to Minister to have percentage reduced; the decision is at the Minister's direction (including adding any conditions or restrictions).	Current members may complete the remaining duration of their appointment. As new members are appointed, participating municipalities must appoint them in accordance with the new requirements. Exceptions can be requested from the Minister (See ca.office MECF Feb 22, 2021 email re: Complete application requirements). Required Action: letters to municipalities notifying them of changes and exception process; update to Administrative bylaw re: 'Governance: Member appointments' BMP Action: send letters as soon as possible re: above and reminding them of their next scheduled appointment date. Coordinate with your neighbouring CAs that share a municipality.
Municipal Agreements	14(2.2) & 14(2.3)	The Minister is to be provided with a copy of any agreement amongst participating municipalities affecting the number of members. Must be available to the public (on website or by any other means)	The number of members is established through the population formula under the CAA (s.2(2)) or under a past Order in Council unless there is an agreement confirmed by municipal resolutions (s.14(2.1)) Required Action: Existing agreements sent to Minister by April 3, 2021 and made available to the public (s14(2.2) & 14(2.3)) BMP Action: letter to the Minister (b.c.c. CO) advising if CA does not have any agreements with respect to the number of members and confirming compliance with current legislation BMP Action: post member status documentation on website
Agricultural Appointee	14(4), 14(4.0.1), 14(4.1)	The Minister has the authority to appoint an additional member to a conservation authority to represent the agricultural sector. The voting powers of such a representative are limited (i.e. can't vote on a decision to enlarge, amalgamate or dissolve an authority or on budgetary matters presented at a meeting). Term up to 4 years, as determined by Minister	No Action at this time. If the Minister appoints an agricultural representative staff will provide an orientation briefing to the new member. BMP Action: Possibility to include reference in the <i>CO Model Administrative Bylaw</i> document and an update to the Administrative By-law re: 'Governance: Member appointments' e.g. voting powers
Agenda/ Minutes	15(2.1),	Authority and executive committee meeting agendas to be available to the public before a meeting takes place and the minutes are to be available to the public within 30 days following a meeting.	Required Action: ensure agenda is available to the public in advance of meetings and minutes are available to the public within 30 days after the meeting; update to the Administrative By-law re: 'Meeting Procedures'

Attachment 1: Governance Accountability and Transparency Initiative Current Priorities: Governance-related Clauses of the *Conservation Authorities Act* Proclaimed February 2, 2021 with Actions Required and Draft BMP Actions

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs
	15(2.2)	Both to be available by posting on website or by any other means the authority considers appropriate.	BMP Action: make agendas and minutes available to public on CA website
Chair/Vice Chair Term	17(1.1), 17(1.2), 17(1.3)	A chair or vice-chair shall hold office for a term of one year and shall serve for no more than two consecutive terms. Appointments must rotate amongst participating municipalities, a member from a specific municipality cannot be appointed to succeed an outgoing chair or vice-chair appointed by the same municipality. The Minister may grant permission to appoint a chair or vice-chair for a term of more than one year or to hold office for more than two consecutive years or waive the rotating provision	From Feb 2, 2021 an individual is not eligible for appointment if they have just finished servicing in the position for two years or if they are from the same municipality as the previous incumbent. Any appointments made under the old rules prior to Feb 2nd are valid until the next election. Exceptions can be requested from the Minister (see ca.office MECP Feb 22, 2021 email re: Complete application requirements) Required Action: review of Chair/Vice Chair history; adjust elections accordingly or request an exception; update to the Administrative By-law re: 'Governance: Terms & Election Chair & Vice Chair' BMP Action: if you are out of compliance; send Minister email (b.c.c. CO) with plan to get into compliance
Powers of authorities	21(1)	Amendments were made to sub-clauses (a),(b),(c) and, (p).	Required Action: Update to the Administrative By-law re: 'Introduction: Powers of authorities'.
Appointment of an Investigator and Appointment of an Administrator	23.1 (1)-(10),	Minister can appoint one or more investigators to conduct an investigation of an authority's operations, including the programs and services it provides. Investigator powers: <ul style="list-style-type: none"> • Inquire into any or all of the authority's affairs, financial or otherwise • Require production of records • Inspect, examine, audit and copy anything • Conduct financial audit • Require any member of the authority and any other person to appear before the investigator and give evidence under oath. Investigator shall provide copy of report to Minister, who shall promptly transmit a copy to the authority. Minister may require CA to pay all or part of cost of investigation.	No Action at this time. If the Minister appoints an investigator then CA Members and staff may be required to appear before investigator and give evidence under oath. There may be unplanned expenses in a given year, if required to pay for the investigation. CA must comply with all resultant orders. BMP Action: Possibility to include reference to these new sections in the Background section of the <i>CO Model Administrative Bylaw</i> document.

Attachment 1: Governance Accountability and Transparency Initiative Current Priorities: Governance-related Clauses of the *Conservation Authorities Act* Proclaimed February 2, 2021 with Actions Required and Draft BMP Actions

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs
	<p>23.2 (1)-(3),</p> <p>23.3 (1)-(6)</p>	<p>Investigators have immunity (if done in good faith). After Minister’s review of report, and CA has failed or is likely to fail to comply with a provision of this Act, the Minister can:</p> <ul style="list-style-type: none"> • Order Authority to do or refrain from doing anything • Recommend to LGIC that an administrator be appointed to take over control and operation of authority • CAs must comply with any issued orders by a specified date • Orders to be made public. <p>Administrator has power to:</p> <ul style="list-style-type: none"> • May exercise all the powers and shall perform all the duties of the administrator and of its members subject to such terms and conditions as outlined by Minister • Minister shall notify Authority and member municipalities • Minister may issue directions to the administrator • Administrator has immunity (if done in good faith) 	
Annual Audit	<p>38 (1),</p> <p>38(4)</p>	<p>Annual audits are still required by a person licensed under the <i>Public Accounting Act, 2004</i> and it is additionally specified that it be prepared in accordance with generally accepted accounting principles for local governments recommended by the Public Section Accounting Board of the Chartered Professional Accountants of Canada, as they exist from time to time.</p> <p>Within 60 days of receiving audit report, must make available to public on its website and any other means the authority considers appropriate.</p>	<p>Required Action: Review current audit practices and make any required adjustments to align with legislative requirements e.g. advise Audit firm when contracted. Ensure audit report is available to the public within 60 days of receipt by the authority; possible update to the Administrative By-law re: ‘Governance: audited financial statements’.</p> <p>BMP Action: make audit report available to public on CA website</p>

Attachment 2: “Governance Accountability and Transparency Initiative”

Conservation Authorities are committed to Governance Accountability and Transparency and will demonstrate that they have fulfilled requirements recently established in legislative amendments to the *Conservation Authorities Act* including a number of governance-related sections which were proclaimed on February 2, 2021.

CO Governance Accountability and Transparency Initiative

Working with Conservation Ontario, conservation authorities have identified 3 key actions that demonstrate their commitment to governance accountability and transparency including:

1. Updates to CA Administrative By-Laws

Ensure CA Administrative By-Laws are updated in fulfillment of legislative amendments to the *Conservation Authorities Act* being proclaimed over the course of 2021. This will be accomplished through the following activities:

- i) Notwithstanding that some CAs have already updated their bylaws further to the Feb 2nd proclamations; ASAP review understanding with MECP staff regarding sections to be proclaimed, scheduling, and the need for updates to CA administrative bylaws; and obtain any other confirmations as required.
- ii) Subject to i), undertake a comprehensive update of the *Conservation Authority Best Management Practices (BMP) and Administrative By-Law Model* (Conservation Ontario, April 2018 as amended), obtain legal review of amendments as necessary, and provide training to CAOs as necessary
- iii) Track all 36 CAs re: status of updated administrative bylaws
- iv) Provide ability for CAs to share sample policies in support of the new clauses.

2. Proactive Reporting on Governance Accountability and Transparency Priorities

Ensure proactive reporting on GAT priorities as initially identified as those governance-related clauses in the CAA that were proclaimed on February 2, 2021. This will be accomplished through the following activities:

- i) Identification and communication of Required Actions and BMP Actions for each of the newly proclaimed governance-related clauses.
- ii) Implementation of a tracking system to enable easy reporting on the status of the Actions and for collection of information that will enable the analysis of CA issues/impacts raised in relation to implementation of the clauses.
- iii) Bi-annual reports to Conservation Ontario Council on the status of priority Actions.

3. Promotion/Demonstration of Results

Evidence of governance accountability and transparency results will be promoted and demonstrated through advocacy materials and websites. This will be accomplished through the following activities:

- i) Promote the initiative and prepare analyses of results and appropriate advocacy materials, as necessary
- ii) Develop QA/QC checklist of governance material that should be available on CA websites to permit ease of public access. The checklist is proposed to include:
 - a. Members (individuals and Member agreements)
 - b. Administrative by-laws
 - c. Annual Meeting Schedule with information on how to participate
 - d. Agendas – full package
 - e. Minutes (to be posted within 30 days of meeting)
 - f. Audited financial statement
 - g. Annual Fee schedule
 - h. Other corporate documentation as available including Strategic Plans, Annual Reports, Watershed Report Cards
- iii) CO to track implementation of the QA/QC checklist and create CO webpage promoting Initiative and that this information can be found on CA webpages

Attachment 3: Proposed CA Resolution

WHEREAS the provincial government has passed legislative amendments related to the governance of Conservation Authorities;

AND WHEREAS the Conservation Authorities remain committed to fulfilling accountable and transparent governance;

THEREFORE BE IT RESOLVED THAT the XYZ Conservation Authority endorse the three key actions developed by the Conservation Ontario Steering Committee to update CA Administrative By-laws, to report proactively on priorities, and to promote/demonstrate results;

AND THAT staff be directed to work with Conservation Ontario to implement these actions and to identify additional improvements and best management practices.

CONSERVATION ONTARIO COUNCIL MINUTES
June 21, 2021 (Meeting via Zoom)

Voting Delegates Present:

Chair: Andy Mitchell, Otonabee

Brian Horner, Ausable Bayfield
Alan Revill, Cataraqui Region
Katrina Furlnetto, Cataraqui Region
Chris Wilkinson, Catfish Creek
Chris Darling, Central Lake Ontario
Tom Adams, Credit Valley
Deb Martin-Downs, Credit Valley
Tim Byne, Essex Region
Linda Laliberte, Ganaraska Region
Chris White, Grand River
Scott Greig, Grey Sauble
Andrea Matrosovs, Grey Sauble
Tim Lanthier, Grey Sauble
Moya Johnson, Halton
Hassaan Basit, Halton
Santina Moccio, Hamilton
Lisa Burnside, Hamilton
Andy Letham, Kawartha
Mark Majchrowski, Kawartha
Grant Jones, Kettle Creek
Wayne Emmerson, Lake Simcoe Region
Rob Baldwin, Lake Simcoe Region
Donna Blunt, Lakehead Region
Tammy Cook, Lakehead Region
Michael Columbus, Long Point Region
Judy Maxwell, Long Point Region
Mark Peacock, Lower Thames
Eric Sandford, Lower Trent

Rhonda Bateman, Lower Trent
David Vallier, Mattagami Region
Janet Mason, Mississippi Valley
Jeff Atkinson, Mississippi Valley
Sally McIntyre, Mississippi Valley
Bruce Mackenzie, Niagara Peninsula
Chandra Sharma, Niagara Peninsula
Carl Jorgensen, Nickel District (Con.Sudbury)
Mariane McLeod, Nottawasaga Valley
Gail Little, Nottawasaga Valley
Doug Hevenor, Nottawasaga Valley
Dan Marinigh, Otonabee Region
James Flieler, Quinte Region
Martin Lang, Raisin Region
Pieter Leenhouts, Rideau Valley
Sommer Casgrain-Robertson, Rideau Valley
Maureen Couture, Saugeen Valley
Jennifer Stephens, Saugeen Valley
Corrina Barrett, Sault Ste Marie Region
George Darouze, South Nation
Angela Coleman, South Nation
Joe Faas, St. Clair Region
Larry Gordon, St. Clair Region
Brian McDougall, St. Clair Region
Jennifer Innis, Toronto and Region
John Mackenzie, Toronto and Region
Alan Dale, Upper Thames River
Tracy Annett, Upper Thames River

Guests:

Brad McNevin, Quinte Conservation
Phil Beard, Maitland Valley Conservation
Bill Smirle, South Nation Conservation

Members Absent:

Crowe Valley

CO Staff:

Kim Gavine
Deborah Balika
Kristin Bristow
Lauren McPherson
Nicholas Fischer
Bonnie Fox

Jane Lewington
Nekeisha Mohammed
Patricia Moleirinho
Leslie Rich
Jo-Anne Rzakki
Rick Wilson

1. Welcome from the Chair

Chair Mitchell welcomed everyone in attendance.

2. Adoption of the Agenda

**#29/21 Moved by: Alan Dale, Upper Thames River Conservation Authority
Seconded by: Maureen Couture, Saugeen Valley Conservation Authority**

THAT the Agenda be adopted.

CARRIED

3. Declaration of Conflict of Interest

There was none declared.

4. Approval of the Minutes of the Previous Meeting

**#30/21 Moved by: Bruce McKenzie, Niagara Peninsula Conservation Authority
Seconded by: Eric Sandford, Lower Trent Conservation Authority**

THAT the minutes from the December 14, 2020 meeting be approved.

CARRIED

5. Business Arising from the Minutes

There was none.

6. Motion to move from Full Council to Committee of the Whole

**#31/21 Moved by: Michael Columbus, Long Point Region Conservation Authority
Seconded by: Alan Dale, Upper Thames River Conservation Authority**

THAT the meeting now move from Full Council to Committee of the Whole.

CARRIED

7. Items for Discussion

a. Strategic Plan 2021-2025 Summary and Five Year Workplan

Kim Gavine presented the report.

**C.W. #32/21 Moved by: Marianne McLeod, Nottawasaga Valley Conservation Authority
Seconded by: Scott Grieg, Grey Sauble Conservation Authority**

THAT Council receives this report as information.

CARRIED

b. General Manager's Report

Kim Gavine presented the report.

**C.W. #33/21 Moved by: Tom Adams, Credit Valley Conservation Authority
Seconded by: Jeff Atkinson, Mississippi Valley Conservation Authority**

THAT Council receives this report as information.

CARRIED

c. Conservation Ontario's Comments on the "Regulatory Proposals (Phase 1) under the Conservation Authorities Act" (ERO#019-2986)

Kim Gavine and Bonnie Fox provided an update and the presentation that is attached to the minutes.

There was discussion on some areas that members thought could use further clarification related to enforcement matters, water quality testing (Drinking Water Source Protection in particular), conservation area lands infrastructure (structures and comfort stations), and low water systems and new reservoirs/infrastructure for drought management.

Bonnie Fox noted that enforcement matters are reflected in attachment 3 and lists tools for enforcement, and that attachment 1 reflects infrastructure in conservation areas, but that staff could provide examples, including comfort stations. Bonnie Fox noted that low water situations are covered as part of the mandatory Natural Hazards program, and the expropriation must be done with the Municipality or the Province as that ability has been removed from the CAs to do independently.

There was a comment made on the coordinated approach for comments, and that 45 days is a small window to coordinate comments. The NPCA has sent letters to Municipal CAOs with suggested comments asking Municipal Councils to send their comments to the Province. They encourage other CAs to follow the same approach.

There was a comment made about natural hazards under section 8 with regard to communications and public awareness; it was noted that this should be mandatory across all areas (land management, Drinking Water Source Protection, etc.) as consultation and public awareness will need to be undertaken in all areas. It was agreed that this would be added by CO to the comments.

**C.W. #34/21 Moved by: Maureen Couture, Saugeen Valley Conservation Authority
Seconded by: Scott Greig, Grey Sauble Conservation Authority**

THAT Conservation Ontario's comments as amended on the "Regulatory Proposals (Phase 1) under the Conservation Authorities Act" (ERO#019-2986) (proposed positioning in summary table and referenced attachments 1, 2a, 2b, 3) be endorsed for submission to the Ministry of the Environment, Conservation and Parks.

CARRIED

d. Draft Updated Memorandum of Understanding between Conservation Ontario and Hydro One Networks Incorporated (2021)

Nicholas Fischer provided an update and presentation which is attached to the minutes.

There was discussion on if this MOU could be adapted for use in other areas of business, like natural gas lines. CO staff noted that although the MOU could be adapted for future use in other areas, that this MOU is specific to Hydro One as a partner.

There was discussion on the staff time and funding for this project. It was confirmed that some CO contract staff time is supported through the Hydro One contract.

There was discussion on enhanced restoration and recreational uses for Hydro One corridors, and it was noted that coordinated efforts between CAs and Hydro One on restoration of corridors is not explicitly part of the MOU, but that nothing precludes individual CAs and Hydro One from entering into separate agreements to undertake this type of work. There was further discussion about wanting to see not just mitigation efforts from Hydro One but also enhancement of their worksites as a guiding principle for Hydro One. Nicholas Fischer noted that this can be taken back to Hydro One for further discussion.

There was further discussion about the co-management of the GTA corridors being managed by Hydro One, Infrastructure Ontario, cities, CAs, and other bodies for the Meadoway project, and there was a suggestion that any interested CAs contact Lisa Turnbull at TRCA for further insights and assistance.

**C.W. #35/21 Moved by: Scott Greig, Grey Sauble Conservation Authority
Seconded by: Pieter Leenhouts, Rideau Valley Conservation Authority**

THAT the DRAFT Memorandum of Understanding (including the “Protocol for Obtaining Permission under Section 28 of the Conservation Authorities Act for Common Hydro One Maintenance and Construction Activities” and the “Hydro One Application Form for Permissions from Conservation Authorities”) between Conservation Ontario and Hydro One Networks Incorporated be endorsed for signing by the General Manager of Conservation Ontario;

AND THAT the Memorandum of Understanding, once finalized, be circulated to all CAs to notify the CAs of the updated agreement and allow for consideration of the local use of the “Protocol for Obtaining Permission under Section 28 of the Conservation Authorities Act for Common Hydro One Maintenance and Construction Activities” and the “Hydro One Application Form for Permissions from Conservation Authorities” relative to their administration of section 28 regulatory responsibilities. THAT Council receives this report as information.

CARRIED

e. Group Insurance and Benefits Committee Update

Denyse Landry, Chair of the Group Insurance and Benefits Committee provided an update.

**C.W. #36/21 Moved by: Carl Jorgensen, Conservation Sudbury (Nickel District)
Seconded by: Michael Columbus, Long Point Region Conservation Authority**

THAT Council receives this report as information.

CARRIED

f. Update on the Conservation Ontario Governance Accountability and Transparency Initiative

Kim Gavine and Bonnie Fox provided an update and presentation which is attached to the minutes.

C.W. #37/21 Moved by: Martin Lang, Raisin Region Conservation Authority
Seconded by: Eric Sandford, Lower Trent Conservation Authority

THAT Council receives this report as information.

CARRIED

g. Budget Status Report for the period ending May 31, 2021

Kim Gavine provided an update on the budget status to May 31, 2021.

C.W. #38/21 Moved by: Alan Reville, Cataraqui Region Conservation Authority
Seconded by: Alan Dale, Upper Thames River Conservation Authority

THAT Council receives this report as information.

CARRIED

14. Consent Items:

C.W. #39/21 Moved by: Carl Jorgensen, Conservation Sudbury (Nickel District)
Seconded by: Maureen Couture, Saugeen Valley Conservation Authority

THAT Council approve the consent agenda and endorse the recommendations accompanying Consent Items 7 h-q and Ri-Riv.

CARRIED

h. Conservation Ontario's 2021 Mid-Year Workplan Update
THAT Council receives this report as information.

i. Conservation Ontario's comments on the "Consultation on growing the size of the Greenbelt" (ERO#019-3136)
THAT Conservation Ontario's comments on the "Consultation on growing the size of the Greenbelt" (ERO#019-3136) submitted to the Ministry of Municipal Affairs and Housing on April 14, 2021 be endorsed.

j. Conservation Ontario's Comments on the "Proposed changes to certain land division provisions in the Planning Act" (ERO #019-3495)
THAT the comments submitted to the Ministry of Municipal Affairs and Housing on the "Proposed changes to certain land division provisions in the Planning Act" (ERO #019-3495) dated May 25, 2021 be endorsed.

k. Update on the CO Client Service and Streamlining Initiative and Endorsement of Committee and Taskforce Representatives
THAT the update on the Client Service and Streamlining Initiative be received;
THAT Tracy Annett (UTRCA) be endorsed as a member of the Client Service and Streamlining Initiative Steering Committee;
AND THAT Jenna Allain (UTRCA) be endorsed as a member of the CO Timely Review and Approvals Taskforce.

- l. Conservation Ontario Representative for Lake Erie Partnership Management Committee
THAT Tim Byrne, Essex Region Conservation Authority and Mark Peacock, Lower Thames Valley Conservation Authority be endorsed as Conservation Ontario's representatives on the Lakewide Partnership Management Committee for Lake Erie.
- m. Conservation Ontario's comments on the DRAFT: Canada's Great Lakes Strategy for PFOS, PFOA, and LC-PFCAs Risk Management
THAT Conservation Ontario's comments on DRAFT: Canada's Great Lakes Strategy for PFOS, PFOA, and LC-PFCAs Risk Management, submitted to The Great Lakes Environment Office on May 26, 2021 be endorsed.
- n. Conservation Ontario's comments on The House of Commons Standing Committee on Environment and Sustainable Development's Fresh Water Study
THAT Conservation Ontario's brief to The House of Commons Standing Committee on Environment and Sustainable Development's Fresh Water Study submitted to The House of Commons Standing Committee on Environment and Sustainable Development on May 25, 2021 be endorsed.
- o. Growing Canada's Forests: A request for Information on the 2 Billion Tree Program
THAT Conservation Ontario Council endorses the Letter supporting Request for Information (RFI) submission of the Ontario Collaborative led by Forests Ontario entitled: Growing Canada's Forests.
- p. Conservation Ontario's Recommendations to Ontario's Advisory Panel on Climate Change
THAT Conservation Ontario Council endorses Conservation Ontario's Recommendations to Ontario's Advisory Panel on Climate Change entitled: Ontario's Conservation Authorities-Natural Champions for Watershed Resilience.
- q. Release of New Research by EcoHealth Ontario, Green Analytics and the Greenbelt Foundation – Estimating the Health Care Savings from Greenspaces and Urban Green Infrastructure
THAT Council receives this report for information.
- r. Program Updates
 - i. Drinking Water Source Protection Program Update
THAT Council receives this report as information.
 - ii. Business Development and Partnerships Program Update
THAT Council receives this report as information.
 - iii. Marketing and Communications Program Update
THAT Council receives this report as information.
 - iv. Information Management Program Update
THAT Council receives this report as information.

15. Motion to Move from Committee of the Whole to Full Council

#40/21

**Moved by: Donna Blunt, Lakehead Region Conservation Authority
Seconded by: Tom Adams, Credit Valley Conservation Authority**

Meeting Date: June 24, 2021
Report Date: June 11, 2021
Submitted by: Ashley Fletcher

Item 7.1 (a)

Subject: Business Arising

Regarding BD-18-144 – Deferred to a later date

SCRCA staff suggest having Project Consultants present to the Board of Directors meeting in order to walk through the guidelines on the development of flood lines.

Regarding BD-20-87 – Ongoing

It is requested that staff provide a report outlining any legislative and regulatory changes that are brought forward from Parliament including implications to the 2021 budget.

Regarding BD-20-109 – Ongoing

Directors request a more fulsome report and/ or a presentation to better understand the Regulations as they relate to the Drainage Act.

Regarding BD-21-26 – Ongoing

A report is requested regarding SCRCA planning staff's collaboration with Dawn-Euphemia Municipal staff and Lambton County Planners, providing possible options for the proposed project of the Bergsma family.

Regarding BD-21-29 – Report on reserves deferred to a later date

Directors request a report on the benchmark data from the 2017 Conservation Authorities Statistical Survey and comparative analysis of Conservation Authority annual statements, of which have reserves, focusing on the SCRCA's position of fiscal health.

Regarding BD-21-55 – Deferred to a later date

A report is requested determining what Authority properties meet the needs of the Peacekeeper Park, if any, and review in comparison to Authority programs.

Regarding BD-21-56 – Deferred to a later date. Refer to Item 8.6

Directors request that staff to initiate discussion with the Town of Plympton-Wyoming in regards to the Highland Glen Conservation Area and the possibility of deeding the property to their ownership and operation, with a conditional agreement to repair the boat launch prior to a change of ownership, and also that the lands be maintained as a public park and boat launch.

- Warwick playground upgraded from sand which is prone to fecal contamination from wildlife and compaction (Foundation funded)
- All 6 playgrounds within SCRCA campgrounds have been upgraded to either Playground Mulch (5) or peastone (1)



New speed bump at LC Henderson CA

Fire at L.C. Henderson Washroom Building on August 9, 2021:

- A fire was observed by campers in the men’s washroom at approximately 9:00 p.m. and 911 was called
- Petrolia and North Enniskillen fire departments responded quickly and extinguished the fire
- No injuries
- Lambton OPP investigated and reviewed security footage, a suspect was identified and removed from the campground
- The OPP informed the suspect that they are not allowed on SCRCA properties, staff followed up with a letter to the suspect confirming the ban
- The bathroom had fire damage to the bathroom stall and ceiling, soot covering the entire men’s washroom, as well as soot in the exhaust vent
- Staff were able to replace the damaged bathroom stall and fixtures, clean soot off all surfaces, and re-open the washroom within a couple days

- After the camping season, staff will need to paint the washroom, replace the ceiling, and replace the bathroom stall partition with the proper panel

Algae Bloom at A.W. Campbell Reservoir:

- On July 28, 2021 an algae bloom was observed in the reservoir at A.W. Campbell
- Campground and Biology staff notified the Middlesex-London Health Unit (MLHU) and the Ministry of Environment, Conservation and Parks (MECP)
- It was determined that the algae bloom posed minimal, if any, risk to the drinking water well
- The reservoir was closed to recreational activities and MECP collected water samples
- Staff were notified on August 12 of the test results, microcystins were below drinking water and recreational standards
- The reservoir was re-opened for paddling/fishing after consultation with MLHU
- Staff continue to restrict swimming/pet access and educate campers of the situation



AWC Reservoir Algae Bloom, July 28

Strathroy CA:

- The Head St. gravel parking lot has been expanded to accommodate additional vehicles
- The Rotary trail access into the Strathroy CA from the North has experienced erosion creating unsafe conditions for use, repairs have been completed with funding provided by the Strathroy Rotary Club
- Two new Memorial Benches installed in 2021 (Donations)
- SCRCA received reports of plants being harvested in the spring. Strathroy-Caradoc Police Services were contacted and they assisted in public education through social media. Signs were posted in the parking lot prohibiting plant harvest.
- Staff have dealt with multiple incidents involving camping within Conservation Areas in Strathroy. Strathroy-Caradoc Police Services attended each time and campers were evicted from the CA. Encampments within Conservation Areas is a growing issue for many Conservation Authorities.
- Local high school student Hannah Burns, a member of Ontario Nature's Youth Council, is leading a planting project at Strathroy CA. Hannah and a small group of students will be completing a riparian planting of trees, shrubs, and wildflowers to improve biodiversity and water quality.
- Local residents, Marilyn Buttery and Lynne Lawrence donated \$10,000 to the Strathroy CA for development of an accessible trail. Staff are investigating options and will apply for additional grant funding to improve accessibility on the trails.



Strathroy CA Parking Lot Expansion and Grading

Coldstream CA:

- Staff are working with the Envirofriends of Coldstream (local community group) and the Poplar Hill Lions Club to replace a bridge within the Coldstream Conservation Area. The Envirofriends and Lions Club have raised more than \$100,000 towards the project, which will cover the majority of the cost. This is a memorial project; the bridge will be named in memory of Al Bycraft, a long time member of Envirofriends. The existing bridge is in poor condition and this is an important upgrade for this property.
- Grant funding has been approved by the Great Lakes Local Action Fund (MECP) to replace 550' of aging boardwalk at Coldstream CA. This project is a partnership with the Envirofriends. Volunteers will assist SCRCA with the removal of the existing boardwalk and construction of the new boardwalk sections. Two volunteer events are scheduled for September and early October. Staff continue to apply to funding opportunities to replace the remaining 650' of aging boardwalk.
- Off-road vehicle use has been an issue for numerous years at the Coldstream CA. SCRCA owns a 50 acre property northeast of Coldstream Rd. This property contains a pond, a Provincially Significant Wetland, the Sydenham River, and a hardwood bush that is home to a variety of native wildflowers. This property has been open to the public to hike, but has not actively been promoted and maintained. ATV damage has been ongoing and usage was very high during COVID-19. As a result, staff have:
 - Cleared a small parking area and made it more visible
 - Cleared a trail from the parking lot to an existing trail
 - Posted "No Off-road Vehicle" signs
 - Reached out to CTV news and had a story on the 11:00 news on May 7th
 - Shared the story on our social media

Staff are applying to funding opportunities to expand the parking lot, improve signage, discourage use of closed trail sections, and rehabilitate the damaged trail loop for hiking. Staff believe increased trail use by local hikers is the best options to deter ATV and other non-authorized uses.

Peers Wetland CA:

- In the fall of 2020, berm repairs were completed at Peers Wetland. An overflow pipe was installed and the berm was raised to stop Otter Creek from flooding back into the wetland. With lower water levels in 2021, staff have been able to re-establish a trail loop around the wetland. Staff are continuing to work on rehabilitation of the trail.

Wawanosh Wetlands CA:

- A new memorial bench has been installed (donation)
- A section of trail was re-routed to bypass an often wet and muddy section of trail



Old and new trail route at Wawanosh

Bridgeview CA:

- SCRCA in partnership with the Town of Petrolia are hosting a shrub planting event at Bridgeview CA. Native shrubs will be planted around the wetland to improve wildlife habitat.

With grant funding provided by the Town of Petrolia's Green Leader Program, SCRCA has implemented a number of projects at Bridgeview Conservation Area

- Pollinator/wildflower habitat has been planted around the new wetland
- Two new benches have been installed adjacent to the wetland
- Fifteen large stock trees have been planted
- Duck boxes have been installed
- Turtle basking logs have been installed
- An interpretive sign will be installed next to the parking lot highlighting the benefits of wetlands and pollinators



Trail through new pollinator habitat



New bench overlooking wetland

Draft Budget

Description	2022 Budget
Wages & Benefits	\$7,000
Insurance	\$1,000
Taxes	\$900
Grass Cutting	\$8,000
Building Supplies & Maintenance	\$1,500
Garbage Collection	\$500
Utilities	\$1,500
Trail Maintenance	\$3,000
Misc. Maintenance	\$2,500
Oil & Gas	\$300
Vehicle/Equipment Expense	\$250
Total Levy	\$26,450

Financial Impact:

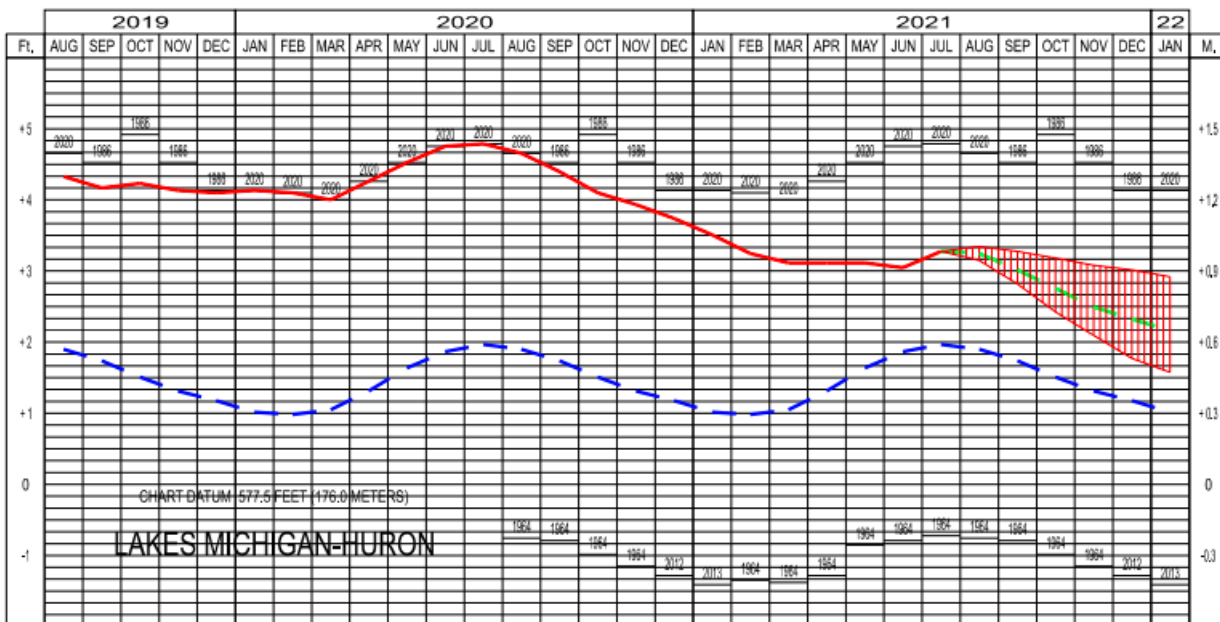
Coldstream CA is classified as a locally benefiting, rural CA. Local rural CAs are funded 90% through special levy to the local municipality and 10% non-matching general levy (all member municipalities). Starting in 2022, when the lease agreement expires, Coldstream CA will follow this funding formula.

Draft budget:
Special Levy – Coldstream \$23,805
Non-matching Levy \$2,645

- Intense rainstorms over the past three months contributed to a three-month precipitation average of 113.7% for the overall region, up from the previous three-month average of 57.9%
- The six-month regional average rose from 59.7% as reported in the previous conditions report to 87% as of this report
- The twelve-month regional average remained relatively the same, from 81.1% as reported in the previous conditions report to 80.9% as of this report

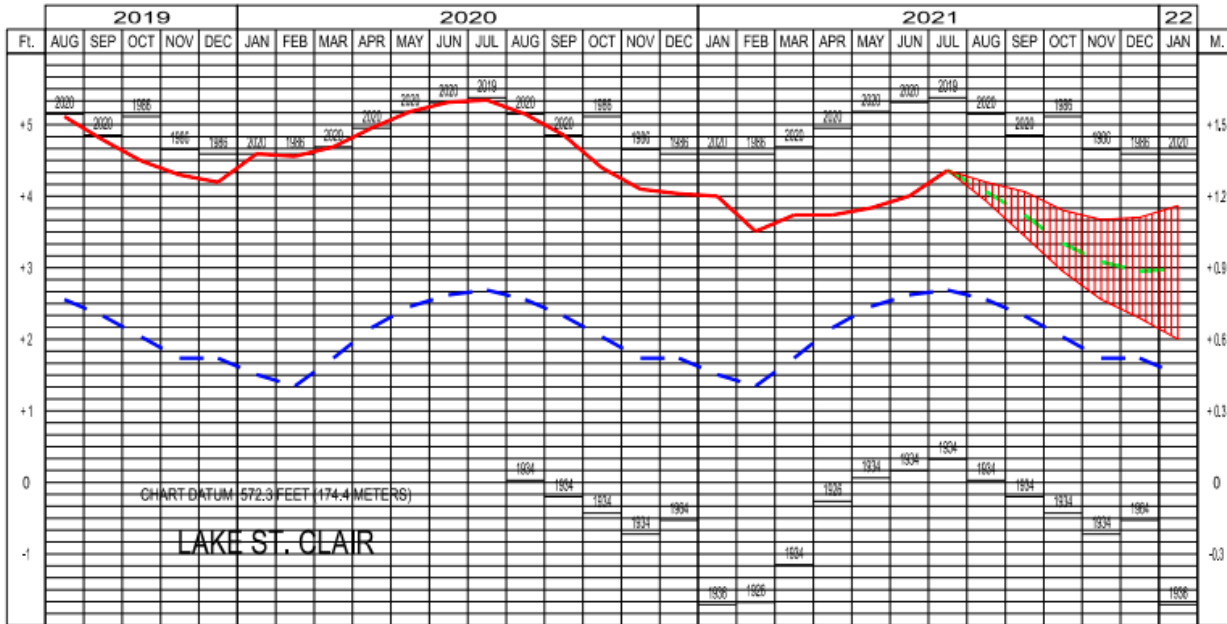
Figure 1: Lakes Huron and St. Clair water levels and six month forecast. Source: U.S. Army Corps of Engineers, 2021.

Lake Michigan-Huron



- In July, the average water level was 40 cm above the long-term average and 46 cm below the July 2020 mean water level
- Water level forecasts predict the average lake level to slowly decline over the next five months

Lake St. Clair



- In July, the average water level was 51 cm above the long-term average level and 30 cm below the July 2020 level
- The lake continued its seasonal spring rise into July and is predicted to drop in the coming months

Meeting Date: September 16, 2021 **Item 7.1 (e)**
Report Date: September 1, 2021
Submitted by: Girish Sankar and Mike Moroney

Subject: Engineering and Design Plan for Management of Contaminated Sediment in the St. Clair River – Work Underway

Recommendation:

That the Board of Directors support the on-going project work so that an engineering and design plan for the management of the contaminated sediment can subsequently be completed as planned.

Background:

The St. Clair Region Conservation Authority (SCRCA) is continuing to work with Parsons Inc. on the development of an engineering and design plan for managing contaminated sediment in three priority areas of the St. Clair River. Regularly scheduled Sediment Management Oversight Committee teleconferences continue to be held to provide the committee with updates on the project work and to seek input on any proposed changes to the scope of work.

Field activities were completed by Parsons in 2019 and 2020. The work included:

- water velocity measurements at 15 locations, and grain size analysis of sediment at 10 locations to assess sediment stability,
- the collection of sediment samples from 99 locations to assess the horizontal and vertical extent of mercury contaminated sediment in each priority area,
- and a bathymetry survey to measure sediment surface elevations in the targeted areas.

After assessing the extensive amount of new data that was collected, in conjunction with historical data, the consultant concluded that:

- There are **no measurable risks to fish** presented by mercury in sediment.
- The **risk-based goal of an average of 3 mg/kg mercury in the surface sediment, to be protective of fish, has already been met** in each Priority Area and at the two Buried Deposits.
- There have been **significant decreases in mercury concentrations** in surface sediment compared to historical results due to natural recovery.
- **Re-exposure** of the subsurface buried mercury is **unlikely**.
- An **Erosion Resistant Cover is recommended** in focused areas within Priority Areas 1, 2 and 3 to enhance erosion protection and decrease mercury concentrations at the surface.
- **The planned remedial actions will achieve the sediment management goals and remedial action objectives.**

Update:

Between June and August of 2021, the SCRCA, with support from Parsons where required, held **8 information sessions** to present the results of the field work and the recommended remedial approach. Presentations were made to Aamjiwnaang First Nation, Walpole Island First Nation, regulatory agencies, local industry, local municipalities, the Canadian Remedial Action Plan Implementation Committee, and the Binational Public Advisory Council for the St. Clair River Remedial Action Plan.

A **Community Information Session** was also held for anyone that was interested in participating, including local media. The session was recorded and subsequently posted to SCRCA’s web site. The questions and answers from the session were also posted.

As per the project schedule, **Parsons submitted the draft design report to the SCRCA in August 2021**. The draft report has been shared with representatives on the Oversight Committee and is currently under review.

Feedback from the information sessions is being taken into consideration as the consultant continues to work on the design details.

Next Steps:

Activity	Timing
Consultant’s Submission of Final Engineering and Design Report	November 2021
Acceptance of Final Engineering and Design Report	December 2021
Implementation of Engineering and Design Plan	To Be Determined

Strategic Objectives(s):

Ensure that our rivers, lakes and streams are properly safeguarded, managed and restored.

Financial Impact:

Monthly invoices received from Parsons continue to be reviewed to ensure that costs incurred align with the key project deliverables and the contract agreement. Cost recovery also continues to occur on a quarterly basis with costs shared amongst each of the funding partners in accordance with the funding agreements.

Meeting Date: September 16, 2021 **Item 7.1 (f)**
Report Date: September 3, 2021
Submitted by: Jessica Van Zwol

Subject: Healthy Watersheds Program Update

Recommendation:

That the Board of Directors acknowledges the report dated September 3, 2021 on the Healthy Watersheds Program Update.

Background:

The Healthy Watershed Program have restored or enhanced over 1,000 ha of land, and over 4 million trees planted throughout the region. These projects, along with our outreach and education events aim to minimize non-point source sedimentation, nutrient loading, and thermal changes of water bodies within our watershed.

Update:

This summer has been busy for Healthy Watershed staff. Landowners are very interested in various stewardship projects on their land. Specifically, tree planting, wetlands, cover crops, and septic system upgrades. We've gone on 8 site visits for wetlands alone.

Healthy Watersheds staff sent out soil health and water quality focused newsletters to over 1,500 landowners in the region.



**St. Clair Conservation
Healthy Watersheds Program**

Are you looking for financial assistance to retain soil & nutrients on your land?

We secure funding for landowners for Nutrient Retention (Green) Infrastructure:

- In-field berms, grassed waterways, riparian buffers, wetlands, and windbreaks
- We connect landowners with resources and financial incentives to help implement Best Management Practices and stewardship projects.
- Landowners can meet with SCRCA staff on site to discuss project design and implementation. Staff can offer advice and answer questions about the process of implementing projects.
- Grant availability depends on what funding sources are available and the guidelines and deadlines outlined by the funding sources, such as the project location and size.
- Projects are reviewed against the funding criteria before a grant is awarded.
- Typically, grants of 50% are provided to landowners for eligible projects (to a maximum of \$10,000). In some cases, up to 100% of the project sub-total may be approved for some types of projects.

The Healthy Watersheds Program main stewardship goals are:

- Improving water quality and quantity
- Improving fish and wildlife habitat, with a focus on aquatic species at risk habitat

If you are interested in setting up a site visit, call 519-345-8730 or email:

- Jessica Van Zwol, Healthy Watershed Specialist, jvanzwol@scrca.on.ca (J241)
- Steve Shaw, Manager of Conservation Services, sshaw@scrca.on.ca (J213)
- Jeff Sharp, Conservation Services Specialist, jsharp@scrca.on.ca (J217)

St. Clair Conservation | Environment and Climate Change Canada | Ontario



**Healthy Soil,
Healthy Water**

Summer 2021

Good day, Sydenham area farmers,

We are well into some hot summer weather, with the first cuts of hay off and the countdown to wheat harvest is on! Make sure you (and your crops!) stay hydrated.

This newsletter is all about understanding water infiltration in your fields and ways to improve your soil's water holding capacity to ensure your crops don't have to work excessively trying to seek out water in droughty periods.

In this quiet before the busyness of various crop harvests, try out the water infiltration test in this newsletter and take some time to consider what cover crop you'll plant after wheat or soybeans. If you haven't tried planting cover crops, maybe you can incorporate a simple mix of oats and radish into your rotation. Cover crops don't have to be fancy, nor expensive.

If you are curious about what species to plant, when to plant and how to terminate, check out Ag Twitter—many Ontario farmers post photos of their equipment and operations and are open to answering questions about how they are "making it work".

Yours in Conservation, Jessica Van Zwol and The Healthy Watersheds Team at St. Clair Conservation

June 26-27 storm event—a good example of localized rain events

Understanding your field's ability to absorb water is important as it has become more and more apparent that we experience more localized and flashy storms. The last weekend in June showed the variation in rainfall accumulations across our watershed. The storm brought over 127 mm (5") of rain to the Dresden area, but only 49 mm (2") near Wallaceburg. Those towns are less than 20km apart! Meanwhile, fields in Alvinston received somewhere in the middle with 77 mm (3").

This map shows rainfall totals from June 26-27, 2021 at gauges across the SCRCA watershed.

St. Clair Conservation | Environment and Climate Change Canada | Ontario

Do it Yourself Water Infiltration Test

How well can your soil handle rainfall?

Summer storms can bring a lot of rain in a short period. Are your soils able to handle flashy storms? You can check your field's water infiltration rate by just using a coffee can, a large glass measuring cup, and a timer. Follow the instructions provided in the infographic to the left to find out if your soils have rapid, moderate or slow infiltration.

If your soils have a rapid infiltration rate, excellent!

If your soils have a slow infiltration rate, consider adopting best management practices to increase your soil's water holding capacity. Read on for ways to improve water infiltration.

1 REMOVE THE BOTTOM FROM A COFFEE CAN
Any equivalent-sized material will work, such as a section of PVC pipe. This equipment is meant to stop water from moving sideways. Instead the water will infiltrate vertically into the soil profile.

2 INSERT THE COFFEE CAN INTO YOUR TEST SPOT
The can should be roughly 6" deep to avoid water seeping horizontally out of the test area. Use a piece of scrap wood and a hammer to insert it evenly.

3 POUR 800 ML OF WATER EVENLY INTO THE CAN
Pour slowly to avoid disrupting the soil. The 800 ml will represent a about 1" of rainfall. This first test is considered the "one soak" if it hasn't rained in awhile and will have to be repeated for true infiltration.

4 TRACK THE INFILTRATION TIME
Use a timer to track how long it takes for the water to infiltrate. See below how your soil compares.

5 REPEAT STEPS 3 & 4 IF THE SOIL IS DRY
This second run of the test will better represent the "year" infiltration rate. This works the hydrophobic nature of very dry soil.

6 TRY IT AGAIN IN DIFFERENT AREAS
As you test different areas out, you will better understand how water infiltration varies across a field or in a garden vs. lawn. Infiltration rates are slower as you move from sandy soil to clay soil.

Rapid 3 - 10 min

Moderate 30 - 100 min

Slow 300 - 1000 min

*Infographic used with permission from Mattand Valley Conservation Authority

Water Infiltration in Crop fields

Rainfall is a summer source of water for your crops. To be of value to your crops however, rainfall must first enter the soil. Water infiltration is an indicator of how well water entering the soil from the surface can move through the soil pores or tiny pockets of space between soil particles and aggregates. Soil's ability to hold water in the pore space provides water for root uptake, plant growth, and habitat for soil microorganisms.

While water infiltration is important for crop growth, it is also important in reducing overland runoff of valuable soils and nutrients. To ensure your crops do the best they can do, adopt practices and implement green infrastructure that will increase your water infiltration.

Water infiltration can be affected by various crop management practices that impact soil organic matter, soil compaction, and crusting. Compacted soils can act like a brick, restricting water movement and root growth. Crusted soils close off potential pathways into the soil. On the other hand, uncompacted soils act like a sponge, absorbing rainfall and locking it deep in the soil layers for future use.

Crop management practices that improve water infiltration and soil water-holding capacity include:

- Implementing a diverse crop rotation and maintaining crop residues, which helps build soil organic matter, a healthy soil microbiome, and reduces soil erosion
- Reducing tillage to reduce surface pore disruption and to allow an increase in soil organic matter
- Controlling traffic on the field by creating designated paths for all equipment wheels, which helps reduce compaction from heavy equipment on wet, spring soils, and soil erosion.
- Implementing Green Infrastructure (like cover crops, wetlands, earthen berms, etc.) can all slow overland runoff and improve water infiltration.

Available water-supplying capacity of soil

After a rainfall, water will fill both the large and small pores of space in the soil. In the day or two after a rainfall, no more water will drain from large soil pores. At this point, the field has reached it's capacity for moisture. Much of this moisture is readily available to crops. As soil moisture declines, water is no longer found in the large pores and it is held more tightly in the small pores, making the plant have to expend more energy to extract water from the soil to keep up with transpiration rates (process of water movement through the plant and its evaporation from leaves and stems). When transpiration rates exceed uptake, plants begin to wilt and leaves begin to curl. At this point the soil moisture level is at the wilting point. The available water-supplying capacity of the soil is the amount of soil water between the wilting point and the field capacity. Maintaining soil moisture levels in that realm will reduce stress on your crops so they can focus their energy on growing, not searching for moisture.

Upcoming outreach events that promote stewardship:

Monday, September 13 – **“Why Wetlands Matter”** by Dr. Dianne Saxe. 7:00 – 8:00 pm (EST); Zoom Webinar. To register: bit.ly/38qRTX1

Tuesday, September 14 – **Coldstream Fish Day**. 2 - 6 pm. A drop-in event highlighting fish and fish monitoring in the Sydenham River. There'll be live demonstrations, "touch tanks", and tanks set up to view the diversity of fish species in the Sydenham River. The event will be held at Coldstream Conservation Area, Ilderton. Park in the lot at the end of Marsh Lane and head down the trail towards the River. Please RSVP to jvanzwol@scrc.on.ca to attend

Wednesday September 22 – **National Tree Day**. Time TBD. A celebration of St. Clair Conservation's 60th Anniversary and an event commemorating over 4 million trees planted and 100 ha of wetland restored in our watershed. Staff will highlight the importance of terrestrial and aquatic habitat restoration in the preservation of our local species at risk.

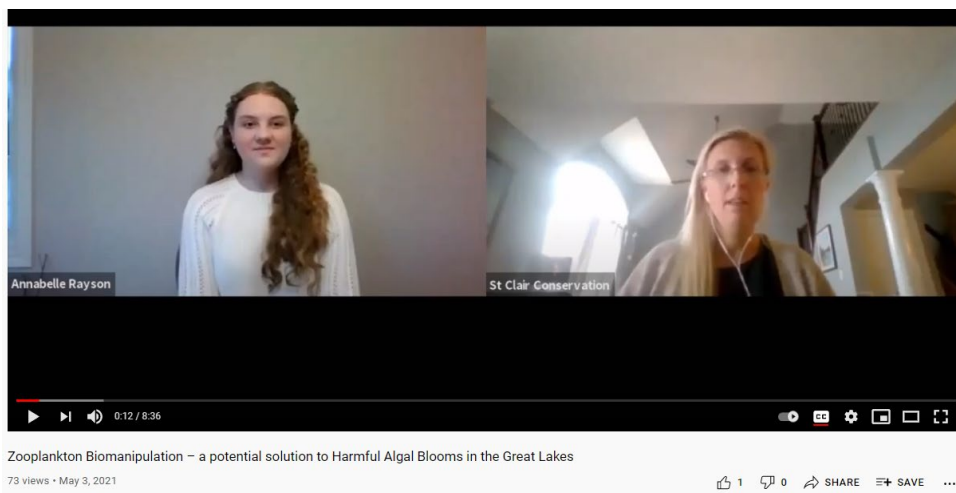
Saturday, October 2 - **Bridgeview Community Tree Planting Event**. 9 – 11 am; This public event at the Bridgeview Conservation Area in the Town of Petrolia will see 560 native shrubs and 40 native riparian perennials planted by the community, SCRCA staff, and Town of Petrolia staff. The goal is to continue to naturalize a portion of Bridgeview park (on the south side of Petrolia Line). Please RSVP to jvanzwol@scrc.on.ca to attend.



This video has led to the Lambton Shores Nature Trails group reaching out for more information about planting dune grasses and a potential community event in the fall. We are also now looking into installing bird habitat on a trail in Forest to promote trail users connections to nature.

Promoting young women in aquatic research

SCRCA staff held an interview with Sarnia area Grade 10 student Annabelle Rayson who conducted a research study on manipulating zooplankton populations in a controlled environment to determine their ability to control harmful algal growth. This project won at the Lambton County Science Fair and Annabelle went on to present at the Youth Canada Science Fair, where she placed Silver in her category! Since then, SCRCA staff have connected Annabelle to University of Guelph researchers who will further her research. The video interview was well received on social media and to date, the YouTube link has been viewed 73 times. Link to video: https://www.youtube.com/watch?v=YnIL_HWMeIQ



Ipperwash Phrag Phighters & Lambton Shores Phragmites Community Group

Staff have been coordinating efforts with IPP to tackle the removal of Phragmites in Lambton Shores. Staff helped out in July spraying and cutting Phragmites at the Lambton United Church Camp. Staff also filmed a video that is currently being edited for outreach purposes.

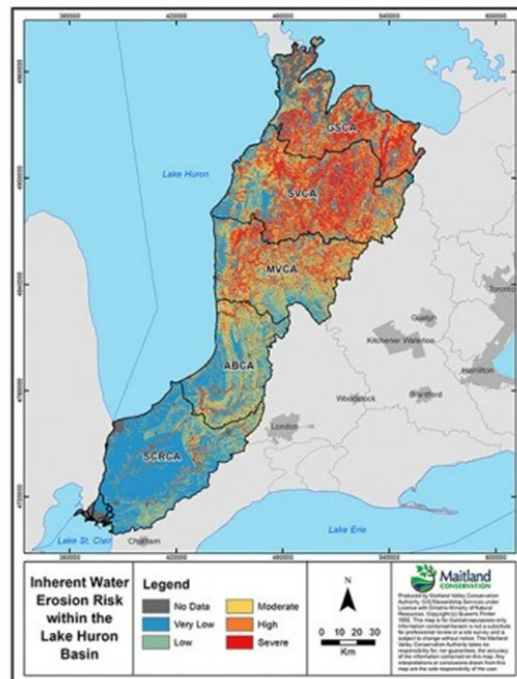
Healthy Lake Huron Erosion Mapping Project with HLH Conservation Authorities

The HLH team (made up of staff from SCRCA, ABCA, SVCA, MVCA, and GSCA), specifically GIS staff, developed maps to understand the risk of soil erosion throughout the Lake Huron basin. The focus was on agricultural land use. The team used OMAFRA and AAFC data that analyzed water erosion risk based on rainfall, soil type, and slope. The erosion potential was categorized under the AAFC labels of severe, high, moderate, low, and very low.

The GIS team looked at:

- The % of each erosion class under natural cover
- The % of each erosion class under agricultural production
- The % of each erosion class under a rotation with three or more crop types (such as corn; soybean; wheat; corn) compared to a rotation with two or fewer crop types (such as corn, soybean).

Mapping allowed the HLH team to examine where the greatest risk of erosion is, how much severely erodible land is under natural cover vs. agricultural production, and how certain agricultural practices such as diverse crop rotations, cover crops, and permanent cover (i.e. pastures) can mitigate erosion potential.



According to AAFC, land that has severe erosion risk should be under permanent cover, whereas areas that have low erosion risk (based on soil type, slope and rainfall) should utilize cover crops and promote diverse (>3 crop rotations).

Upcoming Event: 9th Annual Ipperwash Beach Cleanup, September 11, 2021 9:00 a.m.-11:00 a.m. Meet at the boat launch at the end of Ipperwash Road.

R#2021-0123	917 Old Glass Rd	Chatham-Kent	extend the front section (measure approx. 10' wide) by approximately 10'	Aug-05	Aug-25	20
R#2021-0148	8752 Heritage Line, Chatham	Chatham-Kent	Addition	Jul-17	Jul-26	9
R#2021-0244	26 Grand Street, Wallaceburg	Chatham-Kent	New Garage Build	May-31	Jun-01	1
R#2021-0302	Bay Line	Chatham-Kent	Conduit Installation	May-05	Jun-28	54
R#2021-0303	26882 Bear Line	Chatham-Kent	Conduit Installation	May-05	Jun-28	54
R#2021-0304	Electric Line	Chatham-Kent	Conduit Installation	May-05	Jun-28	54
R#2021-0305	40 Highway (Wallaceburg)	Chatham-Kent	Conduit Installation	May-05	Jun-28	54
R#2021-0316	10444 Croton Line	Chatham-Kent	Accessory Structure	Jul-27	Jul-27	1
R#2021-0326	Near 1657 Kent Line	Chatham-Kent	Integrity Dig	May-12	Jun-28	47
R#2021-0341	227 Winners Circle	Chatham-Kent	Sunroom Addition	May-28	Jul-30	63
R#2021-0433	210 Hudson Crescent, Wallaceburg	Chatham-Kent	New Dwelling	Jun-24	Jul-23	29
R#2021-0435	Jane Road (near Lambton Line intersection)	Chatham-Kent	Directional Drill	Jun-21	Jun-28	7
R#2021-0511	529 Dora Drive, Wallaceburg	Chatham-Kent	Pre-assembled Shed	Jul-23	Aug-03	11
R#2021-0248	Structure 20 - Cuthbert Road, Township of Dawn-Euphemia	Dawn-Euphemia	Bridge Replacement	Aug-24	Aug-24	1
R#2021-0298	Mossie Line & Downie Road	Dawn-Euphemia	Natural Gas Pipeline	Jun-04	Jun-04	1
R#2021-0386	12969 Dankey Line	Dawn-Euphemia	Excavate Wetland	Jul-30	Jul-30	1
R#2021-0405	Inwood Road	Dawn-Euphemia	Culvert Replacement	Jun-08	Aug-25	78

R#2021-0468	Bentpath Line	Dawn-Euphemia	Gas Pipeline Installation	Jul-12	Aug-03	22
R#2021-0403	Oil Heritage Road	Enniskillen	Culvert Replacement	Jun-08	Aug-25	78
R#2021-0406	Mandaumin Road	Enniskillen	Culvert Replacement	Jun-08	Aug-25	78
R#2021-0061	(lot 20 to 24) 12 Eureka Street, Forest	Lambton Shores	Permit to build house	Jun-01	Jul-16	45
R#2021-0077	5482 Beach St	Lambton Shores	proposed addition and new garage at the existing property	May-05	Jun-25	51
R#2021-0267	Thomson Line	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0268	6545 Thomson Line	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0269	Thomson Road, Lambton Shores	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0270	Thomson Line, Lambton Shores	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0271	Thomson Line, Lambton Shores	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0272	Thomson Line, Lambton Shores	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0273	8954 Kinnaird Road, Lambton Shores	Lambton Shores	Installation of HDPE Pipe and Fiber Optics	Jun-02	Jun-02	1
R#2021-0355		Lambton Shores	Installation of HDPE pipe and fiber Optics	May-25	Jun-28	34
R#2021-0459	24353 Coldstream Road, Ilderton	Middlesex Centre	Natural Gas Pipeline Installation	Jun-28	Jul-30	32
R#2020-0522	4859 Oil Springs Line, Enniskillen	Oil Springs	Pole Barn	Apr-06	Jun-22	77

R#2020-0336	Forest Road & Churchill Line, McGill Higgins Outlet	Plympton-Wyoming	Culvert Replacement	Jul-16	Jul-16	1
R#2020-0750	4074 Bluepoint Drive	Plympton-Wyoming	Sunroom to be attached to house.	Mar-29	Jun-22	85
R#2020-0786	3078 Lake View Avenue	Plympton-Wyoming	shoreline protection.	Jun-04	Aug-04	61
R#2021-0109	5223 Douglas Line	Plympton-Wyoming	Bridge reconstruction for wedding venue	Jul-12	Jul-15	3
R#2021-0334	4523 London Line	Plympton-Wyoming	Addition	May-25	Jun-05	11
R#2021-0531	Lot 31, Lambton Lane	Plympton-Wyoming	Construction of a new single family dwelling & Shoreline Protection	Jul-30	Aug-05	6
R#2019-202	550 Lakeshore Road	Sarnia	Groyne Repair	Jul-12	Jul-30	18
R#2020-0671	2966 Sunset Blvd	Sarnia	Sea wall.	Jun-01	Jun-03	2
R#2020-0711	1565 Colborne Road	Sarnia	New garage.	Apr-20	Jun-22	63
R#2021-0198	1010 Plank Rd	Sarnia	Culvert Installation	Jun-10	Jul-06	26
R#2021-0280	1997 Michigan Line	Sarnia	One Floor Addition	Jul-12	Jul-12	1
R#2021-0361	764 Tudor Close West	Sarnia	New Garage	Jul-19	Jul-22	3
R#2021-0391	1900 St. Clair Parkway	Sarnia	Integrity Dig	Jun-02	Jun-28	26
R#2021-0418	1715 Plank Road	Sarnia	Accessory Structure	Jun-23	Aug-23	61
R#2021-0431	604 Beach Lane, Sarnia ON	Sarnia	Addition	Jul-23	Jul-29	6
R#2021-0488	527 Woodrowe Ave, Sarnia ON	Sarnia	Addition	Jul-12	Jul-14	2
R#2021-0553	115 Sunset Avenue, Sarnia (Nearby)	Sarnia	Integrity Dig	Aug-26	Aug-26	1

R#2021-0293	Watterworth Rd & Argyll Drive	Southwest Middlesex	Natural Gas Pipeline	Jun-02	Jun-02	1
R#2021-0294	Multiple	Southwest Middlesex	Natural Gas Pipeline	Jun-02	Jun-02	1
R#2019-001	4855 St. Clair Parkway	St. Clair	Renovation and Addition on Cottage	Jun-18	Aug-06	49
R#2020-0381	935 St. Clair Parkway	St. Clair	New Dwelling	Apr-26	Jun-18	53
R#2020-0482	4691 Riverside Drive, Port Lambton	St. Clair	Addition	Jun-21	Jul-23	32
R#2021-0122	3364 St. Clair Parkway	St. Clair	conduit placed under the roadway to his dock by means of directional drilling	Jul-05	Jul-05	1
R#2021-0199	637 St. Clair Parkway	St. Clair	Construct dwelling within the Terraprobe Development Setback	Jul-30	Aug-06	7
R#2021-0216	Lot 18 Con 4 Township of Moore	St. Clair	Pipeline	May-31	Jun-01	1
R#2021-0239	3523 St Clair Parkway, Sombra	St. Clair	New Dwelling	Jun-15	Jul-30	45
R#2021-0246	2929 St. Clair Gardens, Sombra	St. Clair	New Garage	Jun-08	Jun-17	9
R#2021-0253	3870 St. Clair Parkway	St. Clair	Inground Pool Installation and Shed	Apr-22	Jun-01	40
R#2021-0254	2975 St. Clair Parkway, Sombra	St. Clair	New House Build Request	Jun-01	Jun-01	1
R#2021-0325	Near 1471 Courtright Line	St. Clair	Integrity Dig	May-12	Jun-28	47
R#2021-0327	Near 1693 Kimball Road	St. Clair	Integrity Dig	May-12	Jun-28	47
R#2021-0369	4653 Riverside Drive, Port Lambton	St. Clair	New Single Family Dwelling	Jun-01	Jun-07	6
R#2021-0439	2801 St Clair Parkway	St. Clair	Armour Stone Installation	Jul-13	Jul-23	10

R#2021-0524	TC8: 1143 Petrolia Line, Corunna, ON; TL8: no physical address	St. Clair	Observation Well Drilling Project	Jul-27	Aug-06	10
R#2021-0295	Sutherland Road & Century Drive	Strathroy-Caradoc	Natural Gas Pipeline	Jun-02	Jun-02	1
R#2021-0314	23 Deborah Drive	Strathroy-Caradoc	Pool Installation	Jun-22	Jun-29	7
R#2021-0323	119 Deborah Drive	Strathroy-Caradoc	Installation of Above Ground Pool	Jul-26	Jul-26	1
R#2021-0365	7282 Walkers Drive	Strathroy-Caradoc	Integrity Dig	May-31	Jun-28	28
R#2021-0404	London Line	Warwick	Culvert Replacement	Jun-08	Aug-25	78
Total Permits Issued: 79		Average Number of Days to Issue for this Period: 23.72				

Regulations Inquiries

FileReference	Municipality	Location
R#2020-0754	Adelaide-Metcalfe	486 Second St, Strathroy
R#2021-0363	Adelaide-Metcalfe	27577 Pike Road
R#2021-0381	Adelaide-Metcalfe	6224 Calvert Road
R#2021-0467	Adelaide-Metcalfe	1856 Melwood Drive
R#2021-0567	Adelaide-Metcalfe	Various Locations
R#2021-0135	Brooke-Alvinston	6557 James St.
R#2021-0555	Brooke-Alvinston	6552 James Street & 3202 Park Street
R#2021-0568	Brooke-Alvinston	3658 Sutorville Rd, Alvinston
R#2021-0592	Brooke-Alvinston	6246 Shiloh Line
R#2020-0388	Chatham-Kent	555 Nelson Street, Wallaceburg
R#2020-0565	Chatham-Kent	7473 North River Line
R#2020-0682	Chatham-Kent	South of 744 Nelson Street
R#2020-0687	Chatham-Kent	5 Hingle Point
R#2020-0692	Chatham-Kent	25485 Lindsay Road
R#2020-0695	Chatham-Kent	15 Mason Street
R#2020-0764	Chatham-Kent	7211 Bassette Line & Lot 13 Con 14 PT 2
R#2021-0028	Chatham-Kent	658 Camden Street
R#2021-0030	Chatham-Kent	431 Wallace St

R#2021-0075	Chatham-Kent	8611 Oldfield Line
R#2021-0079	Chatham-Kent	473 Brown St
R#2021-0103	Chatham-Kent	473 Brown St
R#2021-0104	Chatham-Kent	473 Brown St
R#2021-0106	Chatham-Kent	473 Brown St
R#2021-0113	Chatham-Kent	553 Walnut St
R#2021-0115	Chatham-Kent	473 Brown St
R#2021-0153	Chatham-Kent	125 Bruinsma Ave, Wallaceburg
R#2021-0174	Chatham-Kent	473 Brown St
R#2021-0177	Chatham-Kent	9088 Oldfield Line
R#2021-0187	Chatham-Kent	167 Mt. Pleasant Crescent, Wallaceburg
R#2021-0212	Chatham-Kent	9101 Corktown Line
R#2021-0214	Chatham-Kent	15 Martin Park Rd
R#2021-0286	Chatham-Kent	9144 Meadowvale Line
R#2021-0300	Chatham-Kent	30660 Jane Road
R#2021-0306	Chatham-Kent	27172 Baldoon Road
R#2021-0309	Chatham-Kent	7202 Angler Line
R#2021-0310	Chatham-Kent	9912 Oldfield Line
R#2021-0318	Chatham-Kent	2024-2028 Dufferin Ave
R#2021-0331	Chatham-Kent	529 Dora Drive
R#2021-0366	Chatham-Kent	9159 Oldfield Line
R#2021-0424	Chatham-Kent	29951 St. Clair Parkway
R#2021-0425	Chatham-Kent	5094 Dufferin Ave
R#2021-0427	Chatham-Kent	Langstaff Line, Wallaceburg
R#2021-0440	Chatham-Kent	88 Edwy Street, Wallaceburg
R#2021-0443	Chatham-Kent	Oakdale Road and Croton Line (12280 Croton Line)
R#2021-0461	Chatham-Kent	8518 Electric Line
R#2021-0472	Chatham-Kent	11408 Grove Mills Line, Dresden
R#2021-0520	Chatham-Kent	271 Forhan St, Wallaceburg
R#2021-0521	Chatham-Kent	6314 Langstaff Line, Wallaceburg
R#2021-0527	Chatham-Kent	16 Wills Street, Wallaceburg
R#2021-0544	Chatham-Kent	471 Brown Street, Dresden
R#2021-0552	Chatham-Kent	7005 Dufferin Avenue, Wallaceburg
R#2021-0558	Chatham-Kent	30 John Avenue, Wallaceburg

R#2021-0565	Chatham-Kent	657 Wall Street, Wallaceburg
R#2021-0571	Chatham-Kent	8477 Wren Line
R#2021-0599	Chatham-Kent	10201 Pioneer Line
R#2021-0067	Dawn-Euphemia	NE of 7134 Aughrim Line
R#2021-0173	Dawn-Euphemia	Lot 25, Con 3 Dawn
R#2021-0299	Dawn-Euphemia	30258 Brick Road
R#2021-0388	Dawn-Euphemia	1743 Oil Heritage Road
R#2021-0456	Dawn-Euphemia	Lot 29, Con 5 Smith Falls Rd, Dawn Euphemia
R#2021-0470	Dawn-Euphemia	Lot severed from 6780 Bentpath Line
R#2021-0510	Dawn-Euphemia	4626 Edys Mills Line, Oil Springs
R#2021-0551	Dawn-Euphemia	1864 Dawn Valley Road
R#2021-0561	Dawn-Euphemia	Property North of 7153 Mosside Line (Lot 31)
R#2021-0014	Enniskillen	3196 Black Ash Side Road, Enniskillen
R#2021-0357	Enniskillen	4127 Churchill Line
R#2021-0409	Enniskillen	3500 Mandaumin Road
R#2021-0457	Enniskillen	4520 LaSalle Line
R#2018-393	Lambton Shores	9672 Ruth Place
R#2020-0527	Lambton Shores	6572 Lakeshore Road, Bosanquet
R#2020-0707	Lambton Shores	6780 East Parkway Dr, Ipperwash
R#2020-0752	Lambton Shores	5512 Beach Street
R#2020-0800	Lambton Shores	5512 Beach Street
R#2021-0011	Lambton Shores	5512 Beach Street, Lambton Shores
R#2021-0025	Lambton Shores	5512 Beach Street, Lambton Shores
R#2021-0027	Lambton Shores	5512 Beach Street, Lambton Shores
R#2021-0034	Lambton Shores	5512 Beach St, Lambton Shores
R#2021-0059	Lambton Shores	6216 Juniper Lane
R#2021-0071	Lambton Shores	6650 East Parkway Drive
R#2021-0081	Lambton Shores	5512 Beach Street, Bosanquet
R#2021-0090	Lambton Shores	5512 Beach Street
R#2021-0091	Lambton Shores	5512 Beach St
R#2021-0107	Lambton Shores	5512 Beach St
R#2021-0114	Lambton Shores	5512 Beach Street, Lambton Shores
R#2021-0143	Lambton Shores	8370 Glendale Drive
R#2021-0147	Lambton Shores	9712 Centre Sideroad, Lambton Shores

R#2021-0182	Lambton Shores	6897 Clemens Line
R#2021-0192	Lambton Shores	6656 East Parkway Dr
R#2021-0210	Lambton Shores	Lot 20 Tanner Rd
R#2021-0236	Lambton Shores	Lot 20, Tanner Road, Bosanquet
R#2021-0247	Lambton Shores	8779 Birch Street, Bosanquet
R#2021-0423	Lambton Shores	Lt 15 Pl 38 (Lake Valley Grove Road)
R#2021-0508	Lambton Shores	PT LOT 7 WEST IPPERWASH Road, Lambton Shores
R#2021-0522	Lambton Shores	CON 19 S PT LOT 7 RP 25R5213;PART 1; ARN: 384546004021900
R#2021-0529	Lambton Shores	6897 Clemens Line, Lambton Shores
R#2021-0537	Lambton Shores	West Ipperwash Road; Legal Desc: CON 19 S PT LOT 7 RP 25R5213;PART 1
R#2021-0541	Lambton Shores	6897 Clemens Line, Ipperwash
R#2021-0556	Lambton Shores	9171 Wood Drive, Lambton Shores
R#2021-0574	Lambton Shores	West Ipperwash Road, Lot 7
R#2021-0580	Lambton Shores	West Ipperwash Rd, Con 19 Part lot 7
R#2020-0751	Middlesex Centre	Lot 8, Con 9 Lobo
R#2021-0010	Middlesex Centre	10357 Ilderton Road
R#2021-0392	Middlesex Centre	24566 Nairn Road
R#2020-0549	Oil Springs	4723 Orchardview Drive
R#2021-0312	Oil Springs	4716 Orchardview Drive
R#2021-0313	Oil Springs	4724 Orchardview Drive
R#2021-0408	Petrolia	4341 Discovery Line, Petrolia
R#2020-0709	Plympton-Wyoming	3548 Queen Street
R#2020-0717	Plympton-Wyoming	4100 Bluepoint Drive
R#2021-0065	Plympton-Wyoming	Lot 59 Bluepoint Drive
R#2021-0132	Plympton-Wyoming	3854 Lakeshore Rd,
R#2021-0159	Plympton-Wyoming	4338 Bluepoint Drive, Plympton
R#2021-0190	Plympton-Wyoming	4889 Shirley Lane
R#2021-0347	Plympton-Wyoming	3692 Beverly Glen
R#2021-0354	Plympton-Wyoming	Marg Avenue
R#2021-0383	Plympton-Wyoming	4338 Bluepoint Drive
R#2021-0389	Plympton-Wyoming	Lambton Lane (Between 4340 and 4346)
R#2021-0390	Plympton-Wyoming	7165 Bonnie Doon Road
R#2021-0399	Plympton-Wyoming	3601 Queen Street

R#2021-0407	Plympton-Wyoming	5038 Egremont Road
R#2021-0413	Plympton-Wyoming	5266 Aberarder Line
R#2021-0429	Plympton-Wyoming	3190 Dana Street, Camlachie
R#2021-0453	Plympton-Wyoming	7084 Bonnie Doone, Plympton Wyoming
R#2021-0455	Plympton-Wyoming	4921 Edith Lane
R#2021-0473	Plympton-Wyoming	4145 Bluepoint Drive, Plympton-Wyoming
R#2021-0491	Plympton-Wyoming	3054 Sandpiper Trail, Camlachie
R#2021-0500	Plympton-Wyoming	4080 Blue Point Drive, Plympton-Wyoming
R#2021-0501	Plympton-Wyoming	3134 Douglas St
R#2021-0573	Plympton-Wyoming	7646 Oil Heritage Road
R#2021-0576	Plympton-Wyoming	4606 Lakeside Street + Vacant Lot Across
R#2021-0600	Plympton-Wyoming	3446 Egremont Road, Plympton Wyoming
R#2021-0478	Point Edward	201 Louisa Street, Point Edward
R#2020-0524	Sarnia	1628 Michigan Line
R#2020-0588	Sarnia	Sarnia Terminal
R#2020-0802	Sarnia	1245 Birkdale Crescent
R#2021-0004	Sarnia	1930 1/2 Franklin Avenue
R#2021-0084	Sarnia	2876 Old Lakeshore Road
R#2021-0088	Sarnia	2876 Old Lakeshore Road
R#2021-0116	Sarnia	2876 Old Lakeshore Road
R#2021-0265	Sarnia	1963 Michigan Line, Sarnia
R#2021-0377	Sarnia	1798 Churchill Line
R#2021-0445	Sarnia	1525 Lakeshore Road
R#2021-0460	Sarnia	2003 Helen Ave, Bright's Grove
R#2021-0471	Sarnia	1976 Lakeshore Road Sarnia
R#2021-0509	Sarnia	
R#2021-0517	Sarnia	2277 Goldie Lane
R#2021-0550	Sarnia	1597 London Line, Sarnia
R#2021-0560	Sarnia	1800-1815 Robert Street, Sarnia
R#2021-0564	Sarnia	2116 Huron Shores Drive, Sarnia
R#2021-0597	Sarnia	1736 LaSalle Line
R#2021-0601	Sarnia	2006 Olive Ave, Sarnia
R#2021-0068	Southwest Middlesex	Lot 1 Con 10, Alvinston
R#2021-0296	Southwest Middlesex	Ptratt's Siding Road and Railway

R#2021-0373	Southwest Middlesex	Coltsfoot Drive (beside 1850)
R#2021-0438	Southwest Middlesex	5961 Glendon Drive
R#2020-0836	St. Clair	2840 Moore Line
R#2021-0191	St. Clair	3111 St. Clair Parkway
R#2021-0235	St. Clair	1236 St Clair Parkway
R#2021-0237	St. Clair	2615 McCallum Line, Sombra
R#2021-0376	St. Clair	3654 St. Clair Parkway
R#2021-0393	St. Clair	411 Beresford Street
R#2021-0436	St. Clair	2000 Courtright Line, Brigden
R#2021-0446	St. Clair	Various locations
R#2021-0499	St. Clair	379 French Line West
R#2021-0512	St. Clair	2274 Smith Line, Sombra
R#2021-0515	St. Clair	282 Moore Line, Mooretown
R#2021-0530	St. Clair	2274 Smith Line, Sombra
R#2021-0549	St. Clair	781 St. Clair Parkway
R#2021-0554	St. Clair	84 West River Road, Port Lambton
R#2021-0559	St. Clair	4134 St. Clair Parkway
R#2021-0589	St. Clair	3694 St. Clair Parkway
R#2021-0590	St. Clair	197 Cameron Street, Corunna
R#2021-0598	St. Clair	3694 St. Clair Parkway
R#2020-0690	Strathroy-Caradoc	6807 Calvert Dr., Strathroy
R#2021-0029	Strathroy-Caradoc	Corner of Head St & Second St
R#2021-0227	Strathroy-Caradoc	30 Kemp Crescent, Strathroy
R#2021-0297	Strathroy-Caradoc	Sutherland Rd & Century Dr
R#2021-0308	Strathroy-Caradoc	24 McNeil Street
R#2021-0329	Strathroy-Caradoc	23416 Christina Rd
R#2021-0343	Strathroy-Caradoc	7163 Glendon Drive, Melbourne
R#2021-0397	Strathroy-Caradoc	8 McNeil Street
R#2021-0401	Strathroy-Caradoc	74 Parkview Crescent
R#2021-0417	Strathroy-Caradoc	6997 Falconbridge Drive
R#2021-0421	Strathroy-Caradoc	6783 Century Drive
R#2021-0454	Strathroy-Caradoc	79 North Street, Strathroy
R#2021-0463	Strathroy-Caradoc	6953 Falconbridge Drive, Melbourne
R#2021-0493	Strathroy-Caradoc	Mount Brydges

R#2021-0495	Strathroy-Caradoc	8338 Scotchmere Drive
R#2021-0498	Strathroy-Caradoc	52 Metcalfe Street E, Strathroy
R#2021-0516	Strathroy-Caradoc	135 Front Street E, Strathroy
R#2021-0528	Strathroy-Caradoc	23415 Christina Road, Mount Brydges
R#2021-0605	Strathroy-Caradoc	8249 Century Drive, Mount Brydges
R#2020-0795	Warwick	7827 Birnam Line
Total Regulations Inquiries: 193		

Regulations - DART Completed Files

File Reference	Municipality	Drain / Watercourse
R#2021-0506	Adelaide-Metcalfe	Toohill Drain
R#2020-0749	Brooke-Alvinston	Steadman No 1
R#2021-0475	Brooke-Alvinston	Government Drain #1
R#2021-0593	Brooke-Alvinston	Kelly Drain
R#2021-0594	Brooke-Alvinston	Cook Drain
R#2021-0032	Chatham-Kent	Burgess Drain
R#2021-0449	Chatham-Kent	Little Bear Creek South Drain
R#2021-0474	Chatham-Kent	Stephen Henson Drain
R#2021-0139	Enniskillen	Phillips Drain
R#2021-0419	Enniskillen	Perkins Drain
R#2021-0602	Enniskillen	Stewart Drain
R#2021-0415	Middlesex Centre	Borszcz Drain
R#2021-0374	Southwest Middlesex	Sol McIntyre Drain
R#2020-0703	St. Clair	Chowen
R#2020-0796	St. Clair	McDonald Drain No. 2
R#2021-0442	St. Clair	Lewis McDougall Drain
R#2021-0505	Warwick	Cameron and 27-28 Sideroad Drain
Total DART Permits Issued: 17		

Regulations Inquiries - Drains

File Reference	Municipality	Drain / Watercourse
R#2019-132	Adelaide-Metcalfe	Carruthers-McFarlane Drain
R#2020-0541	Adelaide-Metcalfe	Carruthers McFarlane Drain
R#2019-087	Brooke-Alvinston	Hastings Drain
R#2019-600	Brooke-Alvinston	Steadman Drain No 1 and 2

R#2021-0432	Brooke-Alvinston	McNeil Drain
R#2019-808	Chatham-Kent	McGaffey Award Drain
R#2021-0385	Chatham-Kent	DeCow Drain
R#2021-0387	Chatham-Kent	Crowell Creek Drain South Branch
R#2021-0606	Chatham-Kent	Northcott Drain
R#2021-0542	Dawn-Euphemia	Un-named Drain
R#2020-0540	Enniskillen	Bradley Drain
R#2021-0129	Enniskillen	King Drain
R#2020-0312	Plympton-Wyoming	McFarlane Drain
R#2021-0074	Plympton-Wyoming	Fisher Drain
R#2021-0204	Plympton-Wyoming	Greenlees Drain
R#2021-0466	Plympton-Wyoming	Errol Road Branch Drain
R#2021-0572	Plympton-Wyoming	Un-named Drain
R#2021-0579	Plympton-Wyoming	Passingham Ferguson Drain
R#2021-0583	Plympton-Wyoming	Bonnie Doon Creek
R#2021-0585	Plympton-Wyoming	Ferne Ave
R#2021-0586	Plympton-Wyoming	Longo Petiton Drain
R#2020-0160	Sarnia	Farris Subdivision Drain
R#2021-0144	Sarnia	Bird Drain
R#2021-0345	Sarnia	Goodison Drain
R#2020-0681	Southwest Middlesex	Towers
R#2021-0543	Southwest Middlesex	Haggerty Drain #1
R#2021-0545	Southwest Middlesex	McArthur Drain
R#2020-0326	St. Clair	Stewart Drain
R#2020-0702	St. Clair	McGee Drain
R#2021-0430	Strathroy-Caradoc	Petition Drain
R#2021-0507	Strathroy-Caradoc	Cobban Drain - Branch 2
R#2021-0502	Warwick	Eastman VanAert Drain
R#2021-0503	Warwick	Hagle Drain
R#2021-0504	Warwick	McKay Drain
Total Regulations Inquiries Regarding Drains: 34		

PL#2018-040	3236 Devonshire Road	Plympton-Wyoming	B-03-19, B-07-20 A-03-19, A-04-19
PL#2018-109	North of 6810 King Street	Plympton-Wyoming	38T-20001
PL#2018-022	Queen Street	Plympton-Wyoming	51-2018 38T-18004 B01-2018, B01-2020
PL#2019-041	Lakeshore Rd & Egremont Rd	Plympton-Wyoming	38C-05001
PL#2019-081	5223 Douglas Line	Plympton-Wyoming	OPA 52, ZBA 23/20
PL#2019-102	Fleming & Queen Street	Plympton-Wyoming	38T-19004
PL#2020-0075	4386 Confederation Line	Plympton-Wyoming	OPA 53
PL#2021-0024	3288 Devonshire Road	Plympton-Wyoming	
PL#2021-0070	4921 Edith Lane	Plympton-Wyoming	A-12/21
PL#2021-0074	4348 London Line	Plympton-Wyoming	SP01
PL#2021-0079	3396 Egremont Road	Plympton-Wyoming	
PL#2021-0080	Lakeshore Rd and Egremont Rd	Plympton-Wyoming	
PL#2021-0081	Lot 16 Con Front, E of King St	Plympton-Wyoming	
PL#2021-0086	Ivy Lane	Plympton-Wyoming	
PL#2021-0088	5894 Douglas Line	Plympton-Wyoming	
PL#2021-0091	4195 Aberarder Line	Plympton-Wyoming	
PL#2021-0101	4383 London Line	Plympton-Wyoming	
PL#2021-0076	S of Venetian Boulevard	Point Edward	
PL#2018-084	2024 London Line	Sarnia	
PL#2018-014	834 Lakeshore Road	Sarnia	OPA 12 No. 03-2021-85 of 2002 No. SD1-2021
PL#2018-072	1873 London Line	Sarnia	OPA 18 ZBA10-2019 SD2-2019
PL#2020-0015	1597 London Line	Sarnia	
PL#2020-0035	L'heritage Drive, westerly end	Sarnia	OPA#22 ZBA 4-2020-85 of 2002
PL#2020-0037	Modeland Rd and Michigan Ave, Sarnia	Sarnia	OPA#27 No. 13-2020-85 SD2-2020
PL#2020-0072	1758 Confederation Line	Sarnia	
PL#2020-0083	4957 Kimball Road	Sarnia	
PL#2021-0012	1758 Confederation Line	Sarnia	
PL#2021-0013	2437 Michigan Line	Sarnia	

PL#2021-0051	1620/1626 Modeland Road	Sarnia	
PL#2021-0066	1852 Lakeshore Road	Sarnia	
PL#2021-0068	131 Exmouth Street	Sarnia	
PL#2021-0072	1724 Lakeshore Road	Sarnia	A59/2021
PL#2021-0078	1840 London Line	Sarnia	
PL#2021-0083	5641 Blackwell Sideroad	Sarnia	
PL#2021-0084	1748-1794 Blackwell Road	Sarnia	
PL#2021-0089	1003 Colborne Drive	Sarnia	
PL#2021-0092	1748-1794 Blackwell Road	Sarnia	
PL#2021-0094	1345 Christina Street N	Sarnia	
PL#2020-0069	1 Dundas St	Newbury	B-1-2020 A-01-2021
PL#2021-0082	Wellington Street	Newbury	
PL#2019-098	Indian Road & St. Clair Parkway	St. Clair	
PL#2020-0038	1378 Rokeby Line	St. Clair	B-04-20
PL#2020-0085	403 LaSalle Line	St. Clair	
PL#2021-0014	637 St. Clair Parkway	St. Clair	A-09-21
PL#2021-0037	Lot 27, Con 10	St. Clair	
PL#2021-0056	McDonald Street, N of Princess St	St. Clair	
PL#2021-0060	Lot 35, Con Front, S of Penrise Street	St. Clair	
PL#2021-0075	4714 Old River Road	St. Clair	
PL#2021-0077	Indian Road & St. Clair Parkway	St. Clair	
PL#2021-0085	McDonald Street, N of Princess Street	St. Clair	
PL#2021-0090	497 Courtright Line	St. Clair	40 of 2021
PL#2018-106	589 Victoria Street	Strathroy-Caradoc	
PL#2018-018	22805 Adelaide Road	Strathroy-Caradoc	
PL#2018-026	Thorn Drive	Strathroy-Caradoc	OPA9 39T-SC1303
PL#2019-065	Bear Creek Golf Course	Strathroy-Caradoc	
PL#2019-068	Queen Street and Glendon Drive Mount Brydges	Strathroy-Caradoc	ZBA02-2020 39T- SC2001
PL#2021-0047	196 Victoria St	Strathroy-Caradoc	
PL#2021-0054	Pt Lot 19, Con 4, North of Napperton Drive	Strathroy-Caradoc	

PL#2021-0064	137 Frank Street	Strathroy-Caradoc	
PL#2021-0071	Wright Street (Industrial Park)	Strathroy-Caradoc	
PL#2020-0012	7806 Confederation Line	Warwick	38T-21001
PL#2021-0041	7757 Confederation Line	Warwick	
PL#2021-0053	7331 Townsend Line	Warwick	
PL#2021-0057	7140 Egremont Road	Warwick	
PL#2021-0069	308 St. Clair Street	Warwick	
Total Plan Review Items: 84			

Environmental Assessments

File Reference	Location	Municipality
EA#2021-009	Plymton-Wyoming	Plymton-Wyoming
EA#2021-006	Dawn Compressor Station to Corunna Compressor Station	Dawn-Euphemia
EA#2021-005	Bear Creek at Rokeby Line	Enniskillen
EA#2020-009	Port of Sarnia	Point Edward
EA#2020-006	Highway 40 & Modeland Road overpass	Sarnia
EA#2021-008	2701 Lakeshore Road	Sarnia
EA#2021-007	477 Oil Springs Line	St. Clair
EA#2021-002	8119 Zion Line	Warwick
Total Environmental Assessments: 8		

Legal Inquiries

File Reference	Location	Municipality
LL#2021-0029	8228 Rokeby Line	Brooke-Alvinston
LL#2021-0023	6850 Baseline Road	Chatham-Kent
LL#2021-0030	657 Wall Street	Chatham-Kent
LL#2021-0021	Ravine Road	Lambton Shores
LL#2021-0022	Ravine Road	Lambton Shores
LL#2021-0028	5106 Cedarview Drive, Lambton Shores	Lambton Shores
LL#2021-0031	4080 Bluepoint Drive	Plympton-Wyoming
LL#2021-0025	1173 Michener Road	Sarnia
LL#2021-0026	346 Riverview Drive	Strathroy-Caradoc
LL#2021-0027	23415 Christina Rd	Strathroy-Caradoc
LL#2021-0024	335 Wall Street, Watford	Warwick

LL#2021-0032 9093 Confederation Line

Warwick

Total Legal Inquiries: 12

Prepared By: Tracy Prince
 July 18/2021
 DRAFT

ST CLAIR REGION CONSERVATION AUTHORITY
Statement of Revenue and Expenditure
For Six Months Ended 30/06/2021

Item 7.1 (j)

	Actual To Date			Annual Budget Prorated Six Months Ended June 30, 2021		Variance from Budget	
	Revenue	Expenditures	Surplus (Deficit)	Revenue	Expenditures	Revenue	Expenditures
Flood Control & Erosion Control	\$1,424,603	\$2,908,257	(\$1,483,654)	\$1,827,825	\$1,827,825	(\$403,222)	\$1,080,432
Capital Projects/WECI	\$54,477	\$0	\$54,477	\$17,500	\$17,500	\$36,977	(\$17,500)
Conservation Area's Capital Development	\$8,475	\$11,146	(\$2,672)	\$30,000	\$30,000	(\$21,525)	(\$18,854)
IT Capital	\$9,672	\$2,927	\$6,745	\$9,600	\$9,600	\$72	(\$6,673)
Equipment	\$35,400	\$0	\$35,400	\$36,000	\$36,000	(\$600)	(\$36,000)
Planning & Regulations	\$466,984	\$262,574	\$204,410	\$323,098	\$323,098	\$143,886	(\$60,523)
Technical Studies	\$456,159	(\$6,187)	\$462,346	\$139,465	\$139,465	\$316,695	(\$145,651)
Recreation	\$1,198,485	\$531,613	\$666,872	\$744,485	\$744,485	\$454,000	(\$212,872)
Property Management	\$153,017	\$112,329	\$40,688	\$126,154	\$126,154	\$26,863	(\$13,825)
Education and Communication	\$120,420	\$114,086	\$6,334	\$133,480	\$133,480	(\$13,060)	(\$19,394)
Source Water Protection	\$172,764	\$91,724	\$81,040	\$216,250	\$216,250	(\$43,486)	(\$124,526)
Conservation Services/Healthy Watersheds	\$914,048	\$659,381	\$254,666	\$455,239	\$455,239	\$458,809	\$204,143
Administration/AOC Management	\$1,127,982	\$527,065	\$600,917	\$814,186	\$814,186	\$313,797	(\$287,121)
	\$6,142,485	\$5,214,915	\$927,570	\$4,873,280	\$4,873,280	\$1,269,205	\$341,635

Notes:

1. Municipal matching, non-matching, and Recreation levies have been invoiced and are recorded in the actual revenue reported above. See General Levy Report for amounts outstanding.
2. The significant variances from budget to actual is reflective of the nature/timing and uniqueness of the particular projects. The variances will reduce and disappear as the year progresses.
3. Budget for the year is divided by 12 and multiplied by the number of months in the reporting period, this does not reflect the seasonality of the nature/ timing of projects



ST. CLAIR REGION CONSERVATION AUTHORITY
Cheques June to August, 2021

Item 7.1 (k)
Sarah Hume

CHQ. #	DATE	VENDOR	DESCRIPTION	AMOUNT
121857	6/3/2021	R & M Construction	Brights Grove Project	\$ 206,945.47
121867	6/3/2021	VALLEY LAWN CARE	Lawn Care	\$ 7,412.80
121868	6/3/2021	WATFORD HOME HARDWARE BUILDING	Boardwalk Supplies - Coldstream	\$ 24,613.91
121873	6/10/2021	CONSERVATION ONTARIO	Levy	\$ 14,962.00
121885	6/10/2021	SOMERVILLE NURSERIES INC.	Trees	\$ 75,171.50
121888	6/10/2021	Tim L. Dobbie Consulting Ltd	Planning Assessment	\$ 9,237.75
121890	6/24/2021	AECOM Canada Ltd	Highland Glen Project	\$ 8,152.81
121894	6/24/2021	Camis Inc.	Reservation System agreement	\$ 15,820.00
121903	6/24/2021	Parsons Inc.	Sediment Management Project	\$ 9,533.25
121920	7/9/2021	Facca Incorporated	Old Lakeshore Rd E	\$ 164,243.62
121927	7/9/2021	Lerners LLP	Flood Easement - McKeough	\$ 10,105.68
121929	7/9/2021	R & M Construction	Brights Grove Project	\$ 750,295.63
121936	7/9/2021	VALLEY LAWN CARE	Lawn Care	\$ 7,480.60
121948	7/29/2021	Fortify Protection Incorporated	Security at LCH	\$ 5,377.16
121958	7/29/2021	Parsons Inc.	Sediment Management Project	\$ 30,340.30
121979	8/19/2021	BF ENVIRONMENTAL CONSULTANTS	Wetland Creation and Deno of Bates barn	\$ 17,471.25
121992	8/19/2021	Invasive Phragmites Control centre	Phrag Management Plan	\$ 11,300.00
121999	8/19/2021	R & M Construction	Brights Grove Project	\$ 93,375.44
122000	8/19/2021	Parsons Inc.	Sediment Management Project	\$ 38,817.76
122011	8/19/2021	VALLEY LAWN CARE	Lawn Care	\$ 7,700.95
TOTAL CHEQUE DISBURSEMENTS - BANK #1 -				\$ 1,508,357.88

INTERNET BANKING June to August 2021

TRANS #	DATE	VENDOR	DESCRIPTION	AMOUNT
9822	6/30/2021	HYDRO ONE Networks Inc.	Hydro	\$ 22,146.02
9823	6/30/2021	Libro Credit Union - Visa	Employee Expenses	\$ 5,524.75
9824	6/30/2021	OMERS	Pension	\$ 37,889.00
9827	6/30/2021	RECEIVER GENERAL	Source Deductions	\$ 68,779.54
9829	6/30/2021	RWAM Insurance Administrators Inc	Group Benefits	\$ 13,222.71
9834	6/30/2021	WORKPLACE SAFETY & INS. BOARD	WSIB	\$ 6,735.36
9844	7/31/2021	HYDRO ONE Networks Inc.	Hydro	\$ 27,836.47
9845	7/31/2021	Libro Credit Union - Visa	Employee Expenses	\$ 5,577.39
9847	7/31/2021	OMERS	Pension	\$ 37,625.46
9848	7/31/2021	ONTARIO MINISTER OF FINANCE	Employer Health Tax	\$ 5,382.29
9850	7/31/2021	RECEIVER GENERAL	Source Deductions	\$ 73,689.57
9852	7/31/2021	RWAM Insurance Administrators Inc	Group Benefits	\$ 13,249.80
9855	7/31/2021	Township of St. Clair - Property Taxes	Property Tax	\$ 19,412.75
9860	7/31/2021	WORKPLACE SAFETY & INS. BOARD	WSIB	\$ 7,565.60
9867	8/31/2021	HYDRO ONE Networks Inc.	Hydro	\$ 31,704.09
9868	8/31/2021	Libro Credit Union - Visa	Employee Expenses	\$ 6,522.96
9875	8/31/2021	OMERS	Pension	\$ 36,351.24
9876	8/31/2021	ONTARIO MINISTER OF FINANCE	Employer Health Tax	\$ 5,129.69
9877	8/31/2021	PETRO CANADA INC.	Fuel for Vehicles	\$ 5,321.63
9878	8/31/2021	RECEIVER GENERAL	Source Deductions	\$ 70,216.10
9880	8/31/2021	RWAM Insurance Administrators Inc	Group Benefits	\$ 13,256.71
9885	8/31/2021	WORKPLACE SAFETY & INS. BOARD	WSIB	\$ 7,486.15
TOTAL INTERNET DISBURSEMENTS - BANK NO. 1 -				\$ 520,625.28

Notes: June Visa Computer Purchase - \$1,915.07
 July Visa CK Demo permit (Bates) - \$601.40
 Valhalla Pure 60th Anniversary Hats- \$1,525.50
 Aug Visa MTO Renewal - \$1,001.00
 Key Contact - News Letter - \$1,777.71
 Princess Auto - Pressure Washer - LCH - \$502.22
 Canadian Tire - Field Gear - Bio - \$508.49

PAYROLL RUNS			
PAYROLL NO. 12	\$	80,409.78	
PAYROLL NO. 13	\$	83,249.16	
PAYROLL NO. 14	\$	106,797.69	
PAYROLL NO. 15	\$	92,846.72	
PAYROLL NO. 16	\$	94,986.08	
PAYROLL NO. 17	\$	93,878.94	
PAYROLL NO.			
TOTAL PAYROLL RUNS -			\$ 552,168.37
TOTAL DISBURSEMENTS -			\$2,581,151.53



Item 7.1 (I)
 GLYSUM2021
 Sarah Hume
 08/31/2021

2021 GENERAL LEVY SUMMARY

MUNICIPALITY	GROSS LEVY	PAID TO DATE	OUTSTANDING
Sarnia	\$ 441,956.00	331,467.00	\$ 110,489.00
Chatham-Kent	153,868.00	153,868.00	0.00
Brooke-Alvinston Twp.	21,080.00	21,080.00	0.00
Dawn Euphemia Twp.	31,269.00	15,634.50	15,634.50
Enniskillen Twp.	23,560.00	23,560.00	0.00
Lambton Shores M.	58,864.00	58,864.00	0.00
Oil Springs V	2,343.00	2,343.00	0.00
Petrolia T	29,919.00	29,919.00	0.00
Plympton-Wyoming T	64,563.00	32,281.50	32,281.50
Point Edward V	26,135.00	26,135.00	0.00
St. Clair Twp.	132,137.00	132,137.00	0.00
Warwick Twp.	27,176.00	27,176.00	0.00
Adelaide Metcalfe Twp.	22,636.00	22,636.00	0.00
Middlesex Centre Twp.	26,453.00	26,453.00	0.00
Newbury V	1,802.00	1,802.00	0.00
Southwest Middlesex M.	13,807.00	13,807.00	0.00
Strathroy-Caradoc M.	102,008.00	102,008.00	0.00
TOTAL	\$ 1,179,576.00	\$ 1,021,171.00	\$ 158,405.00

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ST. CLAIR REGION
CONSERVATION AUTHORITY
205 MILL POND CRESCENT
STRATHROY ON N7G 3P9



Non-registered account #440-17189-13

June 30, 2021

Item 7.1 (m)

Your Investment Report

Account Summary

This table provides an overview of your account, including the opening and closing balance for the reporting period.

Your Investments	Opening Value Jun 1, 2021	Closing Value Jun 30, 2021	Balance on Jun 30, 2021 (CAD\$)
Canadian Dollar Investments			
Cash Account	1,508,884.13	1,517,716.63	1,517,716.63
	1,508,884.13	1,517,716.63	1,517,716.63
Grand Total (CAD\$)			1,517,716.63
		Last Statement May 31, 2021	1,508,884.13

You can access up-to-date account information online through BMO Nesbitt Burns Gateway at: www.gateway.bmonesbitburns.com. To register for Gateway, please contact your Investment Advisor.

We're here to help

We're dedicated to helping you succeed in meeting all of your wealth management goals. Call any member of our team referenced below if you have questions about **Your Investment Report**.

FLICK/BATCH#4
Investment Advisor
519-646-1180

Batch Flick Wealth Management
www.batchflick.com
Assistant: Patricia Daer
Patricia.Daer@nbpcd.com

JAMES YEOMANS
BMO Private Wealth Market Leader
(519) 672-8560

Suite 1900
One London Place
255 Queens Avenue
London, ON N6A 5R8



Regulated by
Investment Industry Regulatory
Organization of Canada

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Non-registered account #440-17189-13

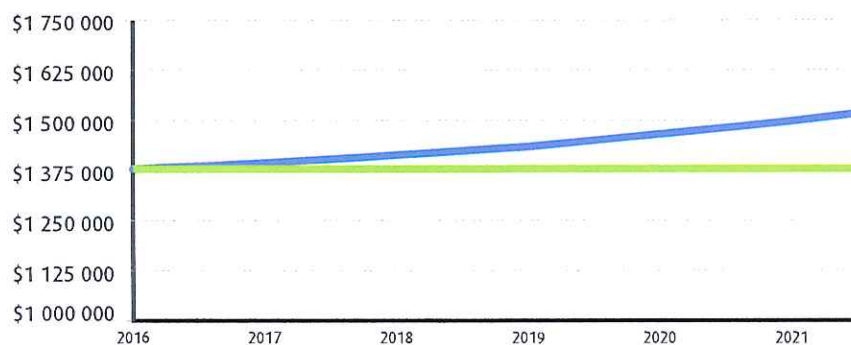
June 30, 2021

▶ Changes to your account

This table provides a summary of the change in value of your account, including all deposits, withdrawals and the change in market value of your investments, for both the current year and as of the start of reporting. Where applicable, balances have been converted to Canadian dollars, see page 1 for exchange rates.

	This Year (2021)	Since January 1, 2016
Opening Value	1,498,175.04	1,379,179.68
Deposited	+ 0.00	+ 0.00
Withdrawn	- 0.00	- 0.00
Net Invested	= 0.00	= 0.00
Change In Market Value	+ 19,541.59	+ 138,536.95
Closing Value on Jun 30, 2021	1,517,716.63	1,517,716.63

Net Invested is the value of total deposits less the value of total withdrawals.



● MARKET VALUE
● NET INVESTED

The Change in Market Value of your account since January 1, 2016 is \$138,536.95.
This includes gains, losses and income received with respect to the investments held in your account.

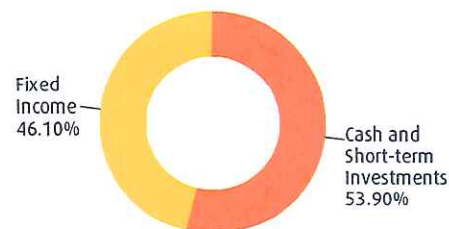
▶ Summary of your investments in Canadian dollars

Your Investor Profile

Investment Objective Income

Time Horizon 10 yrs and more

Investment Category	Amount	Target %	Holdings %
● Cash and Short-term Investments	817,716.63	10.00	53.90
● Fixed Income	700,000.00	90.00	46.10
● Equities	0.00	0.00	0.00
Total	1,517,716.63		100.00



Investments held in your account have been chosen based on objectives you selected on the Client Account Agreement. As your circumstances change, it is important to talk to your Investment Advisor about updating these objectives.

Non-registered account #440-17189-13

June 30, 2021

Your Canadian Dollar Investments

All amounts are reported in Canadian Dollars.

▶ Income you received

Type of Income	Current Month	Year to Date
Interest	8,832.50	19,601.97
Total	8,832.50	19,601.97

Under **Income you received**, amounts reported as dividends do not include income from ETFs, REITs and funds even though these transactions are reported as dividends under **Account activity for this month**.

▶ Expenses you paid

Type of Expense	Current Month	Year to Date
Interest	0.00	60.38
Total	0.00	60.38

Under **Expenses you paid**, amounts reported as interest include accrued interest paid on fixed income purchases. Accrued interest is not reported separately for purchase transactions under **Account activity for this month**.

▶ Your investment details

	Quantity	Per Unit	Cost		Market Value on June 30, 2021	
			Total	Per Unit	Total	Per Unit
Cash Account						
• Cash and Short-term Investments						
CASH			134,716.63		134,716.63	
BMO TRUST COMPANY GIC ANNUAL DUE 08/26/2021 2.060%	100,000	100.000	100,000.00	100.000	100,000.00	100,000.00
EQUITABLE BANK GIC ANNUAL DUE 05/17/2022 2.520%	100,000	100.000	100,000.00	100.000	100,000.00	100,000.00
HAVENTREE BANK GIC ANNUAL DUE 05/25/2022 0.840%	100,000	100.000	100,000.00	100.000	100,000.00	100,000.00
HOME TRUST COMPANY GIC ANNUAL DUE 05/25/2022 0.820%	83,000	100.000	83,000.00	100.000	83,000.00	83,000.00
VANCITY GIC ANNUAL DUE 06/23/2022 1.150%	300,000	100.000	300,000.00	100.000	300,000.00	300,000.00
Subtotal			817,716.63		817,716.63	
• Fixed Income						
Fixed Income						
LBC TRUST GIC ANNUAL DUE 01/20/2023 2.220%	100,000	100.000	100,000.00	100.000	100,000.00	100,000.00



Non-registered account #440-17189-13

June 30, 2021

Your Canadian Dollar Investments (continued)

All amounts are reported in Canadian Dollars.

▶ Your investment details (continued)

	Quantity	Cost		Market Value on June 30, 2021	
		Per Unit	Total	Per Unit	Total
EQUITABLE TRUST GIC ANNUAL DUE 01/23/2023 1.160%	100,000	100.000	100,000.00	100.000	100,000.00
HOMEQUITY BANK GIC ANNUAL DUE 05/25/2023 1.080%	100,000	100.000	100,000.00	100.000	100,000.00
CONCENTRA BANK GIC ANNUAL DUE 06/23/2023 1.320%	100,000	100.000	100,000.00	100.000	100,000.00
CANADIAN WESTERN BANK GIC ANNUAL DUE 11/06/2023 0.990%	100,000	100.000	100,000.00	100.000	100,000.00
LAURENTIAN BANK GIC ANNUAL DUE 11/28/2023 2.240%	100,000	100.000	100,000.00	100.000	100,000.00
B2B BANK GIC ANNUAL DUE 06/24/2024 1.400%	100,000	100.000	100,000.00	100.000	100,000.00
Fixed Income Subtotal			700,000.00		700,000.00
Subtotal			700,000.00		700,000.00
Total for Cash Account			1,517,716.63		1,517,716.63
Total Canadian Dollar Investments			1,517,716.63		1,517,716.63

Average cost and market price indicator descriptions can be found in "Important information about your account".

▶ Account activity for this month

Date	Activity	Description	Quantity	Unit Price	Commission	Amount
Cash Account						
Jun 1, 2021		Opening Cash Balance				884.13
Jun 23, 2021	Interest	B2B BANK GIC ANNUAL DUE 06/24/2024 INT 1.400% CPN INT ON 100000 BND REC 06/22/21 PAY 06/23/21	100,000		0.00	1,400.00

Non-registered account #440-17189-13

June 30, 2021

Your Canadian Dollar Investments (continued)

All amounts are reported in Canadian Dollars.

▶ Account activity for this month (continued)

Date	Activity	Description	Quantity	Unit Price	Commission	Amount
Jun 23, 2021	Interest	CONCENTRA BANK GIC ANNUAL DUE 06/23/2023 INT 1.320% CPN INT ON 100000 BND REC 06/22/21 PAY 06/23/21	100,000		0.00	1,320.00
Jun 23, 2021	Interest	VANCITY GIC ANNUAL DUE 06/23/2022 INT 1.150% CPN INT ON 300000 BND REC 06/22/21 PAY 06/23/21	300,000		0.00	3,450.00
Jun 28, 2021	Redemption	BANK OF MONTREAL MORTGAGE CORP GIC ANNUAL DUE 06/28/2021 INT 2.130% ISSUE REDEEMED FOR CASH	-125,000		0.00	125,000.00
Jun 28, 2021	Interest	BANK OF MONTREAL MORTGAGE CORP GIC ANNUAL DUE 06/28/2021 INT 2.130% CPN INT ON 125000 BND REC 06/25/21 PAY 06/28/21	125,000		0.00	2,662.50
Jun 30, 2021		Closing Cash Balance				134,716.63

This report includes activity recorded in your account since your last statement. For a more comprehensive listing of your account activity, sign into your BMO Nesbitt Burns Gateway account.



Non-registered account #440-17189-13

June 30, 2021

Your Year-to-Date Fees Summary

▶ Fees you paid

This section summarizes all compensation received by BMO Nesbitt Burns with respect to your account. Our compensation comes from two sources: what we charge you directly (Operating and Transaction charges), and payments we receive from third parties.

	CAD (\$)
Operating charges	
Total operating charges	0.00
Transaction charges	
Total transaction charges	0.00
Total fees you paid in 2021	0.00

See examples of operating charges in "Important Information about your Account". Some fees and charges may be reported as before-tax amounts and applicable tax is reported separately within the 'Sales Tax' line item. Where this is not possible the sales tax is included within the line item.

▶ Payments BMO received from third parties

	CAD (\$)
GIC Commission	957.50
Total payments BMO Nesbitt Burns received from third parties in 2021	957.50

▶ Bulletin board

The USD/CAD conversion rate is: 1.2402, as of June 30, 2021

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Account Number: **460-16010**
 Account Type: Regular Account
 For the Period: **June 1 to 30, 2021**
 Last Statement: May 31, 2021

Item 7.1 (m)

ST. CLAIR REGION CONSERVATION
 AUTHORITY
 205 MILL POND CRES
 STRATHROY ON N7G 3P9

Address Information

255 Queens Avenue
 Suite 900
 London ON
 N6A 5R8

Phone: (519) 679-9490
 Website: www.scotiawealthmanagement.com
 Branch Manager: Christie Nicolacopoulos



Your Wealth Advisor

Craig Emptage (519) 660-3259
craig.emptage@scotiawealth.com

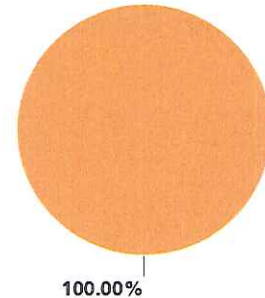
Your Investment Team

Michael Willemse (519) 660-3268
 Tammy Jackson (519) 660-3215
 Yousef Nassereddine (519) 660-3224

CANADIAN Account Overview

Currency: Canadian Dollar

Asset Class Summary	Jun. 30, 2021 Market Value	% of Total Assets
Fixed Income	809,294	100.00
Total Value of Account	\$809,294	100.00
Total Value on Last Statement, May 31, 2021	\$805,058	



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Details of Your Account Holdings

Type	Security Description	Quantity	Average Cost	Adjusted Book Value	Market Price	Market Value
Fixed Income						
CASH	MACKENZIE GLOBAL TACTICAL INVESTMENT GRADE BD FD SERIES F (4807)	13,605.095	9.977	135,740	9.819	133,588
CASH	MANULIFE STRATEGIC INCOME FUND CL F NL (659)	15,720.981	12.316	193,628	12.449	195,710
CASH	PIMCO MONTHLY INCOME FUND (CANADA) CL M (505)	17,829.949	14.350	255,866	14.147	252,240
CASH	SIGNATURE CANADIAN BOND CORP CLASS EF NL (15137)	21,830.358	10.304	224,947	10.433	227,756
Total Fixed Income						\$809,294
Total Account Holdings				\$810,181	\$809,294	

The average cost and adjusted book value displayed on this statement incorporates re-invested dividends and/or mutual fund distributions and does not necessarily reflect your original purchase price. Please see Average Cost & Adjusted Book Value in the Statement Notes for more information.

Monthly Activity

Date	Type	Activity	Description	Quantity	Price	Credit/Debit(-)
Opening Cash Balance						
\$0.00						
Jun. 01, 2021	CASH	DIVIDEND	PIMCO MONTHLY INCOME FUND (CANADA) CL M (505) REINVEST 05/31/21 @ \$14.1228 PLUS FRACTIONS OF 0.784 BOOK VALUE \$830.20	58		
Jun. 21, 2021	CASH	DIVIDEND	MACKENZIE GLOBAL TACTICAL INVESTMENT GRADE BD FD SERIES F (4807) REINVEST 06/18/21 @ \$9.7910 PLUS FRACTIONS OF 0.869 BOOK VALUE \$400.14	40		
Jun. 28, 2021	CASH	DIVIDEND	MANULIFE STRATEGIC INCOME	30		

Monthly Activity - continued

Date	Type	Activity	Description	Quantity	Price	Credit/Debit(-)
			FUND CL F NL (659) REINVEST 06/25/21 @ \$12.4361 PLUS FRACTIONS OF 0.103 BOOK VALUE \$374.37			

Closing Cash Balance **\$0.00**

Summary

Income Summary		
	This Period	Year-to-Date
Total Income	\$0	\$0

A Note From ScotiaMcLeod

Please be advised that you can request a Fund Facts document for mutual funds purchased through your systematic or pre-authorized purchase plan or group investment plan by contacting your Wealth Advisor.

Your Personal Investment Profile

The following information reflects your stated investment objectives and risk tolerance for this account, as well as your overall investment knowledge. If you would like to make any changes, have questions about whether or not this is appropriate for you or would like to discuss how your current investments correspond to this profile, please contact your Wealth Advisor.

For more information, please review Guidelines for Investment Objectives and Related Account Risk Factors in the ScotiaMcLeod Relationship Disclosure Document and Terms and Conditions brochure.

Alternatively, please visit https://www.scotiawealthmanagement.com/content/dam/scotiabank/swm/TandC_eng.pdf

Investment Objectives

Income: _____ 100%
 Growth: _____
 Speculative Trading: _____

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Your Personal Investment Profile - continued

Risk Tolerance

Low: 90%

Medium: 10%

High:

Overall Investment Knowledge

Investment Knowledge: Medium

Time Horizon

Long Term: 7+ Years



Joint Health & Safety Committee Quarterly Meeting Agenda

Date: March 30, 2021

Time: 8:30am

Microsoft Teams Meeting

Facilitator: Greg Wilcox
Co-Chair: Jeff Sharp

Chair: Greg Wilcox
Minutes: Emily De Cloet

Attendees: Greg Wilcox (Manager Representative)
Emily De Cloet, Jeff Sharp (Strathroy Office Worker Representatives)
Jessy Vander Vaart (Lands Worker Representative)

Regrets: None.

Guests: None

1. Motion to approve the November 12, 2020 meeting minutes, as presented.

Moved by: Jeff Sharp

Seconded by: Emily De Cloet

Carried

2. Business arising from the minutes.

- **Greg Wilcox** to report on action items:

2.1 Review of incident/injury investigation reports since last meeting

- No reports since last meeting.

2.2 Health & Safety Manual Fire Evacuation Are/ Section Wardens

- Update on peer review by JHSC members (ongoing)
 - Change in approach after discussion at managers meeting
 - No Section wardens, one calling tree and guest sign in to be maintained by admin staff for evacuation
 - Jeff to work on evacuation plan, Greg to work on emergency preparedness plan

2.3 Electrofishing Health & Safety Policy

- JHSC has provided feedback to Biology regarding the policy and this item has been marked complete.

2.4 Review draft policy

- Update on SOP for SCRC employee COVID-19 exposure, Visitor SOP, off-site meeting SOP, fleet vehicle SOP and office sanitization SOP (schedule)
 - Input has been provided to Management and no further correspondence has been received on this item
 - Noted issues surrounding staff scheduling in Teams Shifts and discussed hesitancy of staff to report non-compliance of their supervisors to upper management. Further discussed the importance of compliance for all staff's health and safety, and a reminder email from the JHSC will be sent outlining the importance of scheduling shifts and wearing masks.

2.5 Training Matrix

- Update on review of training matrix and required refreshers on WHMIS, AOC, SOP's, MOL Employee/Supervisor etc.
 - Noted Working at Heights refresher course coming up in April, Emily attending
 - Discussed health and safety training within the Admin/Health and Safety Manual and having specific issues taken out and made into individual training that can be signed off on (i.e. Sharps Training)
 - Noted it would be less of a time commitment if staff were to review H&S policies biannually
 - Greg to follow-up with H&S Consultant regarding gap analysis of our policies and documents prior to starting our own recommendations of how often training should be done/reviewed

- **Jeff Sharp** to report on action items:

2.6 Evacuation Accountability Policy

- Management did not agree "Fire Wardens" should be used in a Fire Evacuation; Admin would be responsible for tracking staff in the event of a fire evacuation. A phone tree would be used to track staff missing. Ashley to look into phone tree.
- Jeff to rewrite Evacuation Plan to account for changes of removing Wardens and incorporating Phone Tree
- Action item complete.

- **Emily De Cloet** to report on action items:

2.7 McKeough Dam

- Update on final report from external inspection of the McKeough Dam (ongoing)
 - Report never received, task marked complete moving forward

- 2.8** Changes to 'Working at Heights'
- Greg to discuss working at heights and ladder training at upcoming Supervisors meeting
 - Training items to be covered in Training Matrix review
 - Update on the inspection and relevancy assessment on heights equipment
 - Equipment to be assessed by trainer when staff are receiving their Working at Heights training
 - Emily to find checklist for inspecting equipment prior to use

- 2.9** Area Reports and Workplace Inspections
- Warwick (June 11, 2020)
 - Completed in November 2020, inspection found first aid supplies needed replenishing
 - L.C. Henderson (Oct 15, 2020)
 - Completed in November 2020, needed fire extinguishers inspected, some documents needed updating on H&S Board; next inspection looking to early April
 - AW Campbell
 - Completed Dec. 3, 2020, needs eyewash station, first aid supplies need replenishing
 - McLean
 - Completed but needing documentation submitted
 - Jeff and Greg to accompany Jessy on first couple inspections to train
 - Clark Wright (Jan 21, 2021) - outstanding
 - SCRCA Office (Feb 4, 2021) - outstanding
 - McKeough (Mar 11, 2021) – outstanding

3. New Business

- Welcome Lands Representative, Jessy Vander Vaart
- Jeff brought forward a staff's concerns about being asked to be Security at a SCRCA event and the lack of training they were given. Greg noted that this issue was discussed at the Managers meeting and that moving forward security would be hired externally for events when required

4. JHSC Goals and Objectives in 2021

- To regularly review MOL website to educate ourselves and learn from documented investigations and fines (ongoing) – Greg recommended MOL supervisor and employee responsibility training.
- To review Health and Safety Manual and make changes as necessary (ongoing)
- To recommend and continually encourage staff in a supervisory role complete safety reviews and 5-point checklists on a frequent basis (ongoing)

- Update JHSC files on the O drive (ongoing)
- Recommend supervisory staff schedule retraining refreshers with their staff once a month (ongoing) WHMIS 2015 has now been implemented and available.
- To send occasional Health and Safety Bulletins to all staff (i.e. Hot and Cold Weather Alerts forwarded to staff from Lambton Public Health)

5. Proposed meeting dates:

- June 8, 2021
- August 17, 2021
- November 16, 2021

6. Adjournment

Moved by: Emily De Cloet

Seconded by: Jessy Vander Vaart

Carried

June 8, 2021

Signature of Chair

Date

July 7, 2021

Signature of Co-chair

Date



Joint Health & Safety Committee Quarterly Meeting Minutes

Date: June 8, 2021

Time: 8:30am

Warwick Conservation Area, Warwick

Facilitator: Greg Wilcox
Co-Chair: Jeff Sharp

Chair: Greg Wilcox
Minutes: Jeff Sharp

Attendees: Greg Wilcox (Manager Representative)
Emily De Cloet, Jeff Sharp (Strathroy Office Worker Representatives)
Jessy Vander Vaart (Lands Worker Representative)

Regrets: None.

Guests: None.

1. Motion to approve the March 30, 2021 meeting minutes, as presented.

Moved by: Emily De Cloet

Seconded by: Jessy Vander Vaart

Carried

2. Business arising from the minutes.

Greg Wilcox to report on action items:

- 2.1** Review of incident/injury investigation reports since last meeting
- No reports since last meeting.
- 2.2** Health & Safety Manual Fire Evacuation Area/ Section Wardens
- Update on peer review by JHSC members (ongoing)
 - Emergency preparedness plan
- 2.3** Review draft policy
- Update on SOP for SCRCA employee COVID-19 exposure, Visitor SOP, off-site meeting SOP, fleet vehicle SOP and office sanitization SOP (schedule)
 - Input has been provided to Management and no further correspondence has been received on this item (ongoing)
 - Waiting for training matrix to be developed for office staff, all Lands staff are currently using system developed by Manager of Lands.

2.4 Training Matrix

- Update from H&S Consultant regarding gap analysis of our policies and documents (ongoing)
- No response has been received from Consultant, potential need to look for a new consultant

Jeff Sharp to report on action items:

2.5 Evacuation Accountability Policy

- Re-write of Evacuation Plan to account for changes of removing Wardens and incorporating Phone Tree (ongoing)

Emily De Cloet to report on action items:

2.6 Changes to 'Working at Heights'

- Update on the inspection and relevancy assessment on heights equipment - Completed refreshing training for working at height, legislation has changed and current equipment may not be compliant.
 - Equipment for working on stream gauge need to be addressed to ensure safe working conditions.
 - Update on checklist for inspecting equipment prior to use. (ongoing)
 - Going to review new legislation for "work at heights" to determine the procedures that need to be adapted for work completed by Conservation Authority staff

2.7 Area Reports and Workplace Inspections

- Warwick (June 10, 2021)
- L.C. Henderson (April 15, 2021) - Completed
- AW Campbell (May 13, 2021) – Outstanding
- McLean (June 17, 2021)
- Clark Wright (Jan 21, 2021) - Completed June 7, 2021
- SCRCA Office (Feb 4, 2021) - Completed June 7, 2021
- McKeough (Mar 11, 2021) – Completed April 13, 2021

3. New Business

- Discussion regarding variants and public perception of COVID-19 and compliance of public and how that is affecting SCRCA staff.
- Discussion the need to update policies to address the changing science surrounding COVID-19. ie. Mask at desk in light of greater potential of spread of variants.

4. JHSC Goals and Objectives in 2021

- To regularly review MOL website to educate ourselves and learn from documented investigations and fines (ongoing) – Greg recommended MOL supervisor and employee responsibility training.
- To review Health and Safety Manual and make changes as necessary (ongoing)
- To recommend and continually encourage staff in a supervisory role complete safety reviews and 5-point checklists on a frequent basis (ongoing)
- Update JHSC files on the O drive (ongoing)
- Recommend supervisory staff schedule retraining refreshers with their staff once a month (ongoing) WHMIS 2015 has now been implemented and available.
- To send occasional Health and Safety Bulletins to all staff (i.e. Hot and Cold Weather Alerts forwarded to staff from Lambton Public Health)

Proposed meeting dates:

- August 18, 2021
- November 17, 2021

5. Adjournment

Moved by: Emily De Cloet

Seconded by: Jeff Sharp



Signature of Chair



Signature of Co-chair

Carried

August 17, 2021
Date

August 24, 2021
Date

Meeting Date: September 16, 2021 **Item 7.1 (o)**
Report Date: September 5, 2021
Submitted by: Donna Blue

Subject: Communications Update

Recommendation:

That the Board of Directors acknowledges the Communications Update, dated September 5, 2020, including information regarding conservation education, upcoming events, and conservation scholarships.

Strategic Objectives(s):

Goal 3 – Provide recreation and education opportunities for the public to enjoy and learn from our natural environment.

Conservation Education – 2021-2022 School Year

On September 7, 2021, the SCRCA Conservation Education team will return to work for the 2021-2022 school year.

School boards released their “Return to Learn” plans throughout the summer that outline COVID-19 policies for the 2021-2022 school year including whether field trips would be permitted and if visitor access restrictions would be lifted. Virtual learning models continue to be offered in addition to in-person learning models. Below is a summary of current plans for each of the major school boards the SCRCA serves.

School Board	Return to Learn Plan
Lambton Kent District School Board	<ul style="list-style-type: none"> • Visitors permitted pending successful COVID-19 screening and advanced arrangement (unsure if this will include SCRCA in-class conservation education programs) • Field trips are permitted
St. Clair Catholic District School Board	<ul style="list-style-type: none"> • Visitors permitted pending successful COVID-19 screening and advanced arrangement (unsure if this will include SCRCA in-class conservation education programs) • Field trips are permitted

Thames Valley District School Board	<ul style="list-style-type: none"> • Gradual return to permitting visitors into schools; currently only those visitors who are deemed essential and have been approved by school administration will be allowed into TVDSB schools • Field trips not permitted
London District Catholic School Board	<ul style="list-style-type: none"> • Visitors are prohibited except for emergency circumstances or for limited pre-arranged appointments/meetings • Field trips are not permitted for at least the month of September

Discussions will be held over the next month to finalize the SCRCA’s 2021-2022 conservation education program strategy and options.

2021 Conservation Scholarships

On July 12th and July 17th, the recipients of the 2021 Conservation Scholarships were presented with their awards.

In recognition of the SCRCA’s 60th Anniversary, the St. Clair Region Conservation Foundation generously approved an additional \$2,000 in scholarship funding that was distributed between all applicants to the 2021 scholarship program as a one-time “60th Anniversary Bursary”.

**A.W. Campbell Memorial Scholarship (\$1,000)
Zachary Zavitz, Strathroy District Collegiate Institute, Strathroy**



A.W. Campbell Memorial Scholarship (\$1,000)
Nicole Guthrie, Northern Collegiate Institute and Vocational School, Sarnia



Tony Stranak Conservation Scholarship (\$500)
Johanna Xiu DeKoning, Holy Cross Catholic Secondary School, Strathroy



Mary Jo Arnold Conservation Scholarship (\$500)
Lucie Slakmon, Northern Collegiate Institute and Vocational School, Sarnia



Upcoming Events

Special Virtual Presentation – Dr. Dianne Saxe – Why Wetlands Matter

Date – Monday, September 13, 2021

Time – 7:00 pm – 8:00 pm

Platform – Zoom Webinar

Registration - <https://bit.ly/38qRTX1>

Geocaching Adventure/CITO (Cache In, Trash Out)

Date – Sunday, September 19, 2021

Time – 9:00 am – 3:00 pm

Location – Lorne C. Henderson Conservation Area, Petrolia

National Tree Day/SCRCA Celebration – 4 Million Trees Planted, 100 Hectares of Wetland Created

Date – Wednesday, September 22, 2021

Time – TBD

Location – Gold Creek Drive at Komoka Road, Komoka (More details coming soon)

Foundation Memorial Forest Dedication – **Cancelled (information on virtual ceremony coming soon)**

Date – Sunday, September 26, 2021

Time – 2:00 pm

Location – Lorne C. Henderson Conservation Area, Petrolia

Media and Social Media Analytics:

In order to continually improve upon our activities related to local media outlets and social media, communications staff will be reviewing analytics to help assess our communications efforts.

The following statistics cover the timeframe from June 1, 2021, to August 31, 2021:

Media Relations

Activity	2021 (June - August)	2020 (June - August)
Media Releases	8	5
News Article Mentions	231	106

Social Media

Facebook

Activity	Total	2021 (June – August)	2020 (June – August)
New Likes	1832	29	80
New Followers	1910	31	83
Posts	--	53	77

Twitter

Activity	Total	2021 (June – August)	2020 (June – August)
Tweets	--	90	74
Retweets	--	56	35
New Followers	769	30	29
Engagements*	--	1051	981

* Engagements = clicks, retweets, replies, follows, and likes

Meeting Date: September 16, 2021
Report Date: September 3, 2021
Submitted by: Natasha Pozega

Item 7.1 (p)

Subject: St. Clair River Area of Concern Update

Recommendation:

That the Board of Directors acknowledges the report dated September 3, 2021 on the St. Clair River Area of Concern (AOC).

Background:

RAP Coordination

On June 14, 2021, the Areas of Concern Annex (Annex 5) leads for the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health supported the “not impaired” designation recommended by the Canadian Remedial Action Plan Implementation Committee (CRIC) for the Fish Tumours or Other Deformities beneficial use impairment. This marks another milestone for the St. Clair River Area of Concern, with four beneficial uses remaining “impaired” and one “requires further assessment”.

Following the announcement of this redesignation, Natasha Pozega, RAP Coordinator, was interviewed by local reporter, Paul Morden, to provide any update on the status of beneficial use impairments in the St. Clair River. The article was circulated by several media outlets including the Sarnia Observer, Sarnia this Week, Chatham Daily News, and Wallaceburg Courier Press.

The Initial Draft Status Assessment Report for BUI 9-*Restrictions on Drinking Water Consumption or Taste and Odour Problems* was presented to the Binational Public Advisory Council (BPAC) on August 19, 2021. An updated report will be

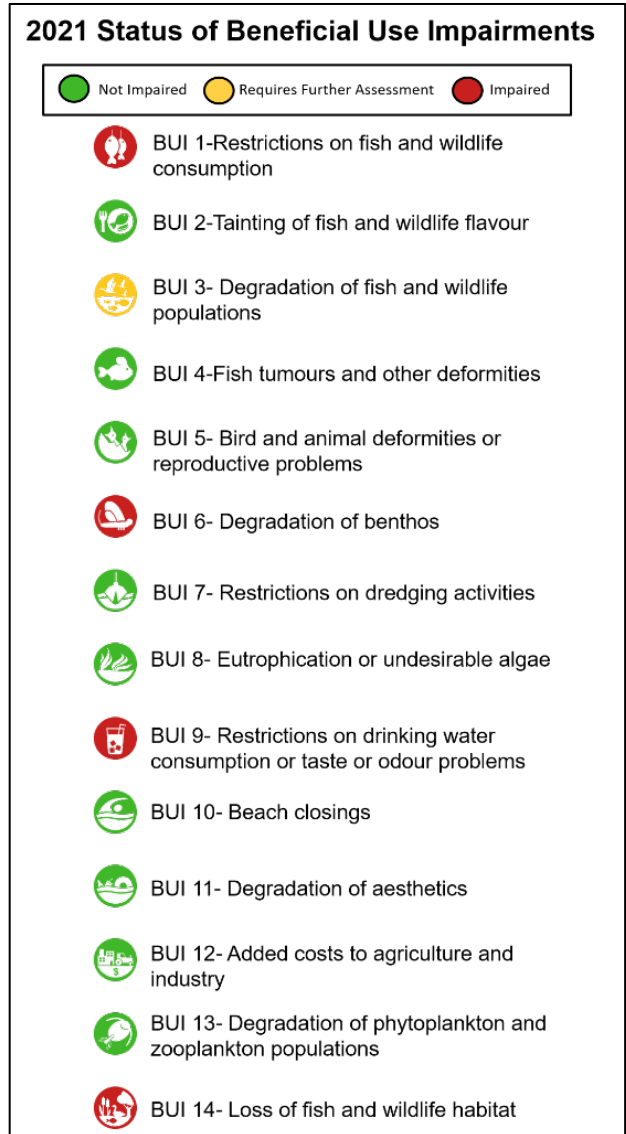


Figure 1: Status of Beneficial Use Impairments- updated July 2021

presented to the CRIC for formal decision at the next meeting. This BUI is currently considered “impaired”, and the report recommends redesignation to “not impaired”.

Meetings

Canadian RAP Implementation Committee (CRIC)

- Next Meeting: TBD

Friends of the St. Clair River (FOSCR)

- June 28, 2021 – Signage Project Sub-committee – Teleconference
- July 27, 2021 – Signage Project Sub-committee - Teleconference
- Next Meeting: TBD

Binational Public Advisory Council (BPAC)

- August 19, 2021 – Teleconference
- Next Meeting: TBD

Outreach and Engagement



Figure 2: Social media flyer promoting Fish Consumption Survey

RAP Coordinator, Natasha Pozega attended the Bluewater Anglers Walleye Derby on August 7, 2021 to promote the St. Clair River Fish Consumption Survey launched earlier this year. This survey will collect information about fishing locations, fish consumption behaviors, and limited demographics about the individual. This survey supports the advancement of BUI 1- *Restrictions on Fish and Wildlife Consumption* and was identified as a deliverable in the 2017-2022 St. Clair River Area of Concern Workplan. The survey can be completed at friendsofstclair.ca/fishsurvey/.



Figure 3: FOSCR booth at Mooretown Docks welcoming Theodore TOO

The Friends of St. Clair River (FOSCR) was a Silver Sponsor for the visit of Theodore Too to Sarnia-Lambton. Theodore TOO is a replica of the famous cartoon tugboat who has recently moved from Halifax, NS to the Hamilton Harbour. Theodore is currently on a mission to promote careers in the marine industry and to emphasize the importance of maintaining, preserving, and restoring Canadian bodies of water. Natasha Pozega, RAP Coordinator, organized a booth with FOSCR on August 26, 2021 at the Mooretown Docks and August 28 & 29, 2021 at Centennial Park in Sarnia to talk to the public about the importance of restoring and protecting the St. Clair River. The event was very well attended with an estimated 3000 visitors to the Mooretown Docks alone.



Figure 4: Save the Date for the upcoming Virtual Information Session

Due to restrictions associated with the COVID-19 pandemic, the St. Clair River Science Symposium was converted to a 3-part virtual series for 2021-22. The second session is scheduled for October 20, 2021 from 7pm-8pm and will update the community on *Fish and Wildlife Populations in the St. Clair River*. This is a free event that is open to all. Registration is now open at friendsofstclair.ca/symposium.

The Friends of St. Clair River and the RAP Office continue to partner on the production of St. Clair River News, a free monthly E-Newsletter. The goal of this newsletter is to increase awareness and engagement in the Area of Concern and highlight environmental initiatives happening in the region.

Links to Recent Newsletters:

- [June 2021 E-Newsletter](#)
- [July 2021 E-Newsletter](#)
- [August 2021 E-Newsletter](#)

Each of the past newsletters can be viewed at friendsofstclair.ca/about-us/newsletters/.

Strategic Objectives(s):

Goal 2 – Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
PMA 1	\$13,500	\$2,000	\$1,000			\$16,500
PMA 2	\$60,000	\$60,000	\$6,750	\$4,500		\$131,200
PMA 3	\$56,600	\$56,600	\$56,600	\$13,750	\$13,750	\$197,300
PMA 4	\$5,400	\$2,400	\$1,100			\$8,900
PMA 5	\$3,200	\$2,200	\$1,100			\$6,700
PMA 6	\$2,400	\$1,100	\$1,100			\$4,600
Total	\$141,300	\$124,300	\$67,650	\$18,250	\$13,750	\$365,250

Strategy Moving Forward:

Due to the significant costs associated with eliminating phragmites from WWCA, staff are proposing to tackle Phragmites Management Area 1 (PMA-1) using SCRCA staff. This PMA is not as densely populated as the other areas. By starting in PMA1, staff will be able to evaluate how effective control methods are before considering larger areas and assess the feasibility of other PMAs.

By using staff resources, the costs will be slightly reduced from the estimates in the plan. PMA 1 will serve as a demonstration site as it is highly visible to property visitors. This will be important, as significant funding would need to be raised if SCRCA is to proceed with phragmites management in other PMAs.

PMAs with greater densities of phragmites would require a combination of staff and contractor labour.

Financial Impact:

Anticipated costs to treat PMA 1 over a three-year period are approximately \$12,000 to \$14,000. Funding for this project will be obtained through grants and donations. As such, the start date will be funding dependent.



Invasive Phragmites Management Plan for the Wawanosh Wetland Conservation Area



Revised version August 5, 2021



Prepared for:
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Cover Photo: Taken from the western dike of the Main Wetland looking eastward, Wawanosh Wetland Conservation Area, June 30, 2020.

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1. Introduction

The Wawanosh Wetland Conservation Area (WWCA), was created in the 1980's by Ducks Unlimited Canada (DUC) in partnership with St. Clair Region Conservation Authority (SCRC; Figures 1, 2). Located in Lambton County, east of Sarnia, the two wetlands provide staging habitat for North American waterfowl along their migratory routes on both the Mississippi and Atlantic Flyways (Figures 3, 4). The wetlands and adjacent upland, also provide habitat for other migratory birds and wetland wildlife including turtles, amphibians, fish, and muskrats. As well, the WWCA is a popular destination for a large number of visitors who come to partake in various recreational activities such as hiking along the trails, bird watching, fishing, and hockey and skating on the frozen pond in the winter (Figures 5, 6).

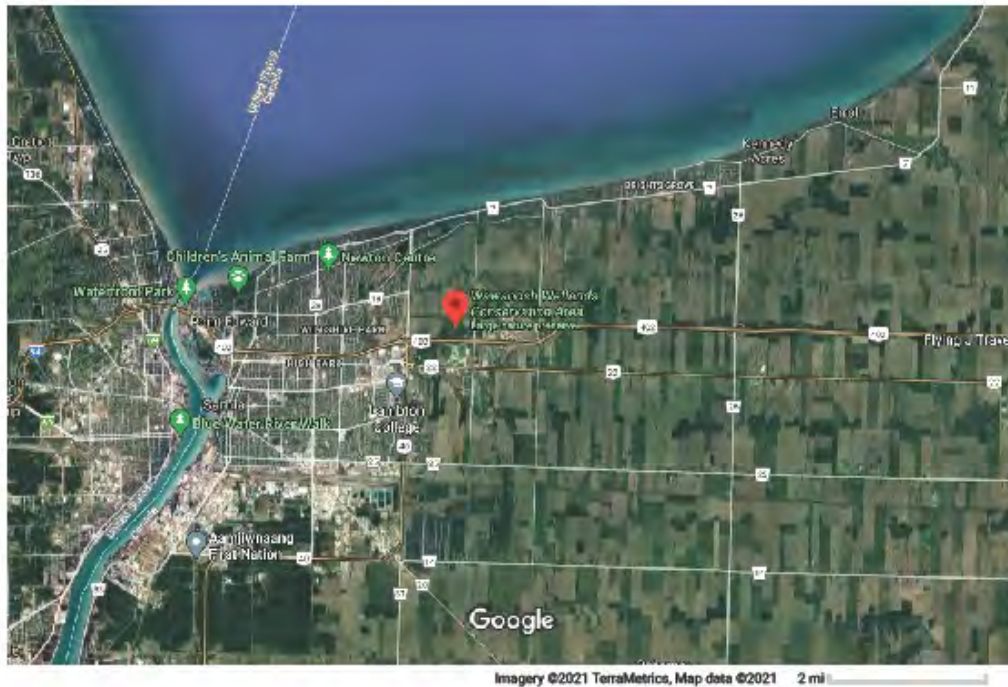


Figure 1. Location of the Wawanosh Wetland Conservation Area in Lambton County, Ontario.



Figure 2. Schematic map showing the locations of the wetlands and upland habitats at the Wawanosh Wetland Conservation Area (source: St. Clair Region CA).



Figure 3. Information sign posted at the Wawanosh Wetland Conservation Area.



Figure 4. Information signage on migratory birds at the Wawanosh Wetland Conservation Area.



Figure 5. Walking along one of the trails at the Wawanosh Wetland Conservation Area, June, 2020.



Figure 6. Visitors playing hockey on the North Pond at the Wawanosh Wetland Conservation Area, January, 2021.

Invasive *Phragmites australis*, hereafter referred to as Phragmites, has attained densities at the WWCA that are now negatively impacting habitat quality as well as the aesthetic enjoyment of visitors. During the dormant period, the high density, dry biomass also poses a liability risk due to the potential for a fire which can be extremely hot and spread rapidly (Figure 7). If a fire were to inadvertently occur at the WWCA, it could cause significant damage to infrastructure but, more importantly, the associated smoke would create potentially deadly conditions for traffic on the adjacent roads including Highway 402.



Figure 7. A Phragmites fire on a golf course in Michigan (Source: <https://www.youtube.com/watch?v=v2kZ2sUQPuE>).

Considered to be Canada's worst invasive plant, Phragmites has numerous modes of spread, expands at an exponential rate, outcompetes all other plants including cattail and woody species, and has no natural control constraints. One seedling can produce upward of 60 ramets in one growing season and, because this grass is clonal, a large colony can establish within 5-7 years. More than 2/3rds of the total biomass is belowground and consists of a tight network of roots and rhizomes which can extend downward several metres. It is these structures that must be targeted for any control measure to be effective.

Phragmites is now a dominant plant throughout a significant portion of the WWCA wetlands and adjoining upland habitat. Numerous individual smaller cells are also found on the surrounding lands including the laneway leading into the parking lot, adjacent private properties, the ditch

on the east side of the main wetland, along the trails and embankment on the west side of the Wawanosh Ditch, along nearby roadsides and Highway 402. Controlling Phragmites after it has become established is much more difficult than dealing with new invasions but, it can be accomplished with a comprehensive approach that is sufficiently funded and has a long-term commitment. The initial control actions require the most effort and financial investment but, once the population has been significantly reduced, this substantially declines and eradication is an achievable goal. This Management Plan provides a recommended strategy to guide short and long-term actions and includes detailed information on control options, their anticipated efficacy, pros and cons, estimated costs, and timing, as well as considerations regarding visitor education, safety and other relevant matters. Implementing an effective Phragmites management program at the WWCA will require that Phragmites is controlled on the neighboring lands. Ultimately, a regional control approach will need to be undertaken to ensure long-term protection of these and other valuable natural areas. This Management Plan is intended to be a living document to be revised as required. Updates and adjustments to control target timelines and approaches will likely be needed on an annual basis to account for budget allocations, actual control work undertaken and efficacy, native plant species responses, and the emergence of innovative control tools.

2. Restoration Project Outline

2.1 The Issue

Invasive Phragmites has become the dominant vegetation community in the Wawanosh Wetland complex negatively impacting native plant diversity, wetland function, habitat quality and quantity, and aesthetic enjoyment by visitors. Phragmites is currently present throughout ~10 ha of wetland and ~12 ha of adjoining upland habitat. It is also scattered throughout the adjacent properties. Due to Phragmites ability to spread by various means and grow at exponential rates, the long-term protection of the Wawanosh Wetlands will require that control efforts occur throughout the WWCA property as well as the adjacent lands.

2.2 Goals and Objectives

The short-term goal of this project is to significantly reduce the current Phragmites population, and the areas where it occurs, by using effective and environmentally responsible control methods. The long-term goal is total eradication from the WWCA property and the surrounding properties. The objectives of this project are to restore the native vegetation communities, improve wetland and upland habitat quality and visitor aesthetic enjoyment, and ensure protection from Phragmites re-invasion in perpetuity.

2.3 Target Timelines

A feasible short-term (3 to 5 years) target for this project is the reduction of Phragmites throughout the two WWCA wetlands and surrounding areas by at least 90% of the current population. Achieving this goal will be largely dictated by annual budget allocations. The initial control work will incur the most expense and would likely need to be undertaken by contractors

who have the required equipment and expertise. However, once an area has been treated, remnant, lower density populations could either be managed by SCRCA technicians, a qualified contractor, volunteers, or a combination of these options. The long-term protection of this site, with the goal of total eradication, could be attained within 7 to 10 years.

3. Control Methods

Feasible control options for this project include a combination of herbicide and cutting-to-drown methods. Herbicide application will need to be undertaken by licensed applicators with Landscape or Aquatic Exterminator qualifications. Treating the large, high-density cells will require use of specialized equipment that can maneuver through open water (Jon Boat), challenging terrain (Centaur), or both (Fat Truck, Marsh Master) and are furnished with commercial grade herbicide spray units. The areas with lower density Phragmites, and smaller cells, can be treated with herbicide manually using backpack spray units or spray equipment mounted on all-terrain vehicles (Gator, ATV, or equivalent).

It is recommended that for all dry land application, the herbicide WeatherPRO (active ingredient glyphosate) is used since this product will not kill mature trees and tends to have less suppression of native plant response post spraying compared to the other dryland herbicide Arsenal Powerline (active ingredient imazapyr). The recommended rate of application for WeatherPRO is 8L/ha (5% concentration) with the surfactant Methylated Seed Oil added at a 1% concentration. Arsenal Powerline would be required if the areas have been treated at least twice with the glyphosate product and live plants still remain. Switching the active ingredient would ensure mortality and, at this stage, there should be few individual plants and very little product required. Since Arsenal Powerline is ~5 times more expensive per litre than WeatherPRO, use of smaller volumes would not only save money but, also reduce risks of negatively impacting trees. If the SCRCA manages this project, a Letter of Opinion permit allowing herbicide use on dry land, will not need to be obtained through the Ministry of Natural Resources and Forestry.

The water-safe herbicide Habitat Aqua (active ingredient imazapyr) recently received approval for use in Canada. Information regarding the permitting process in Ontario can be found at <https://youtu.be/A1K-iLFg3Jk>. The current listed cost for a case (2 x 9L jugs) is approximately \$4,000 and the water-safe surfactant, AquaSurf will also be required. This herbicide could be applied using boats (Jon Boat) or amphibious machines (Fat Truck, Marsh Master or equivalent). Phragmites within two drip lines distance from mature trees should not be treated with this product since this will likely cause tree mortality. The treated Phragmites stalks may fall over during the dormant season on their own. Within the high-density cells, this can create a thick thatch that will be slow to decompose and likely delay the natural recovery of desirable vegetation for several years. The additional step of biomass removal in these areas could be undertaken to promote more rapid plant recovery.

Aerial application is included on the Habitat Aqua label and a helicopter should be able to treat in ~1 hour the same area that would take several days of ground application. This is based upon

work that has been occurring in the Long Point region during the past 5 years under a Health Canada Emergency Use Permit (Figure 8). This permit allows the use of RoundUP Custom, which is a water safe glyphosate product used in the United States, to control Phragmites in wet areas. The project is managed by Nature Conservancy Canada in partnership with the Ministry of Natural Resources and Parks, Canadian Wildlife Service, Ontario Parks, Norfolk County and numerous other partners. To date 100's of hectares of high density Phragmites have been successfully managed using both aerial and ground application. At the WWCA site, the only areas where aerial herbicide application might be feasible are the large, high-density cells located in the open section of the Main Wetland. However, there are a few considerations that might negate this as a desirable option: 1) a sizable buffer would need to be left around the tree-line to ensure the mature trees did not inadvertently get exposed to the imazapyr as this would likely kill them, 2) the cost of the herbicide and the helicopter may be too high for the amount of area that could be treated, 3) ground application would still need to occur to treat the Phragmites in the buffer zones, 4) the standing dead stalks would likely need to be removed to facilitate touch up of survivors the following growing season which is an additional cost and, 4) a considerable amount of upfront work would need to occur to attain permits, undertake public consultation, and acquire permission from adjacent property owners.



Figure 8. Helicopter spraying invasive Phragmites with a water safe herbicide, Long Point, Lake Erie, ON (Source: Phragmites australis control projects/longpointbiosphere.com).

A feasible non-chemical option to control Phragmites in the open water sections of the wetlands is use of the cutting-to-drown method. This entails cutting the stalks as close to the sediment as possible to deprive the roots and rhizomes of oxygen. This method works particularly well in murky water since sunlight is not able to penetrate too far into the water column and promote the development of a new shoot. In water depths of ~0.5m, at least 95% mortality can be achieved with one cut and in deeper water, 100% mortality is possible. Once cut, the stalks need to be collected since they can sprout roots and shoots at their nodes when damp (Figure 9). Although cutting to drown targets a much lower Phragmites area per day compared to herbicide application, a large benefit is the biomass is removed at the same time. Specialized amphibious machines (Truxor or equivalent) are able to cut high density Phragmites in any water depth and also collect the cut material (Figures 10, 11, 12, 13). Lower density and smaller cells can be cut manually using Stihl gas powered cutters, and in really sparse patches spades or cane cutters can be used (Figures 14, 15, 16). Manual cutting can be undertaken by trained volunteers once the main infestation has been reduced and volunteers can also work along-side experienced crews.



Figure 9. Roots and shoots sprouting from nodes along a Phragmites stalk that fell into the water.



Figure 10. Truxor cutting high density Phragmites in a Lake Huron coastal wetland.



Figure 11. Truxor removing cut Phragmites from a Lake Huron coastal wetland.



Figure 12. Lake Huron shoreline before Truxor cutting occurred, July 2015.



Figure 13. Lake Huron shoreline after Truxor cutting occurred, August 2018.



Figure 14. Oliphant Fishing Islands Phragmites Community Group volunteer cutting Phragmites using a gas-powered Stihl saw.



Figure 15. Educational postcard illustrating the spading method to control Phragmites.



Figure 16. Educational postcard illustrating the cane cutting method to control Phragmites.

This work should occur outside of the fish spawning regulation windows which also reduces potential to interfere with nesting birds. The Truxors have paddle tracks on pontoons, are relatively light weight and move slowly which allows the operator to avoid wildlife. The machines operated by the IPCC operate with water safe hydraulic fluid and engine coolant to reduce potential contaminant issues to the environment.

There are several options for dealing with the cut biomass. The preferred option is to pile the material in strategic locations throughout the wetland to provide structure for birds, turtles, snakes, muskrats and other wildlife (Figure 17). The stalks will dry out, even if sitting in water, and the piles quickly shrink and are eventually colonized by native plants. New shoots that may emerge can be easily controlled by pulling them out of the pile and laying back on top to dry or, if the roots are too deep, they can be sprayed with herbicide. If making Phragmites piles in the wetland is not an option, the biomass can be transported to a fallow field or other suitable location where it can be spread out to dry and eventually be burned (Figure 18). Alternatively, the biomass can be taken to a local landfill or other suitable location where it can be isolated from mulch material and left to desiccate over time (Figure 19). Both of these options will incur additional expense since a backhoe with a clam bucket and dump trucks would be needed. This would also reduce cutting efficiencies since it would take much more time to remove cut material from the wetland than it would to create piles.



Figure 17. Cut Phragmites piled on the shoreline in an embayment was used by 40 Common Terns to nest on the following spring, Oliphant, Lake Huron.



Figure 18. Cut Phragmites from a Lake Huron coastal wetland that had been transported to a local fallow field to dry and be burned.



Figure 19. Cut Phragmites being unloaded from a collection barge and placed into a dump truck to be transported to the local landfill, Oliphant, South Bruce Township, Lake Huron.

Additional information on Phragmites control methods can be found in the document: *Invasive Phragmites (Phragmites australis) Best Management Practices in Ontario: Improving species at risk habitat through the management of Invasive Phragmites* (Nichols 2020, Ontario Invasive Plant Council, May 2020 edition).

4. Recommended Management Strategy

Due to the scope of the current Phragmites infestation throughout the WWCA and adjacent properties, this project would be best undertaken by targeting specific sections in a systematic fashion. To facilitate this approach, the focus area has been divided into five Phragmites Management Areas (PMAs) based somewhat upon site features and land ownership (Figure 20). Using the PMAs as a guide will make the project more manageable for annual planning and budgeting purposes and also for tracking actions undertaken and monitoring results. PMA 1 covers the North Wetland and surrounding upland area. PMA 2 includes the Main Wetland and surrounding uplands. PMA 3 encompasses the area along the southern boundary of the Wawanosh Wetland CA including the section along Highway 402. PMA 4 covers private land adjacent to the conservation area on the eastern side of the WWCA as well as the road allowance along Blackwell Side Road. PMA 5 encompasses the lands west of the WWCA property including the Wawanosh Drain, the park land and private properties. Significant Phragmites reduction (>90% of current population) should be attainable wherever initial control actions have been undertaken within each PMA.

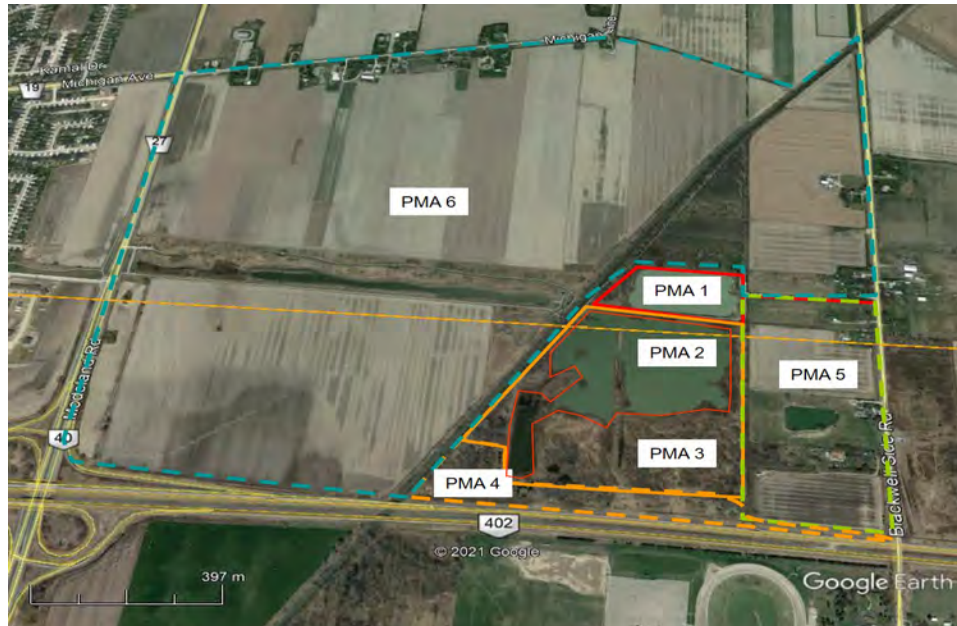


Figure 20. Map showing suggested Phragmites Management Area locations in the Wawanosh Wetland Conservation Area and adjacent properties.

It is recommended that restoration efforts begin in PMA 1 for several reasons: 1) the Phragmites along the edge of the North Wetland will be much easier to control compared to the high degree of infestation in the Main Wetland, 2) if the recommended control work can take place in 2021, there would be a substantial improvement to the aesthetic enjoyment of the North Wetland immediately after the treated biomass has been removed and, 3) this wetland is adjacent to the parking lot and is highly visible making it an ideal demonstration site. The next priority areas recommended to focus control efforts are PMA 2 and 3. Due to the significant extent of Phragmites invasion in this section of the WWCA, achieving control success will require the largest financial investment over a 3 to 5-year period. PMAs 4 and 5 cover adjacent lands and control work would ideally be undertaken within this same time period and with partner support. PMA 4 is located along the southern end of PMA 2 and the Phragmites extends past the WWCA property boundary into Ministry of Transportation (MTO) jurisdiction. The MTO portion could potentially be treated by the same crew undertaking the work for WWCA since Phragmites can be accessed from the WWCA trails and the density does not merit the need for a boom spray truck. The MTO would need to be engaged in the WWCA Phragmites control plans and should cover all of their related costs. Controlling Phragmites in PMA 5 will require private land owner approval but, there is not a significant amount of Phragmites currently present on these properties and costs will be minimal. Phragmites within the PMA 6 area is also not extensive and undertaking control on these properties will require engagement and cooperation of the various owners. Control options for each PMA along with anticipated outcomes, estimated costs, timelines and pros and cons are provided below.

4.1 Phragmites Management Area I

PMA 1 covers the North Wetland and adjacent upland area as well as the laneway into the site (Figure 21). The wetland is ~3.5 ha (8.6 ac) but, the majority of the Phragmites is confined to the shoreline edge and the surrounding berm (Figures 22, 23). The highest Phragmites densities occur along the northern and western sections although Phragmites is scattered around the entire perimeter of the wetland covering an estimated 1.3 ha (1.6 ac). Along the berm and in the upland areas, Phragmites is intermixed with woody plants which may inadvertently be exposed to herbicide and not survive. Species including willows and dogwood will rejuvenate on their own but there may need to be some upfront management of public expectations and concerns. There is a very small cell located along the main entrance into the parking lot that will need to be controlled as well (Figure 24).



Figure 21. The demarcated location for Phragmites Management Area 1 in the Wawanosh Wetland Conservation Area.



Figure 22. High density Phragmites along the northeastern edge of North Pond, June 30 2020.



Figure 23. High density Phragmites in close proximity to mature trees along the western end of North Pond, June 30, 2020.



Figure 24. Phragmites along the entrance into the Wawanosh Wetland Conservation Area.

Three potential control options for PMA 1 along with associated costs, expected outcomes and pros and cons are provided below.

4.1a Control Option #1

Year 1

Herbicide Application:

- treat Phragmites on the dry portions with herbicide (WeatherPRO + MSO)
- if water levels can be drawn down this would increase amount that could be sprayed
- estimate 1 day with a 4-person crew using backpack spray units and a specialized machine (Fat Truck, Marsh Master or equivalent) equipped with tank, hose and hand gun
- the specialized machine will need to traverse the shoreline to allow herbicide application to occur from the water's edge back toward the land thereby increasing herbicide coverage of the Phragmites while reducing the potential for spray drift to reach the water
- a manual crew will need to walk through the upland areas to target Phragmites using backpack spray units
- the recommended target period to undertake this work is between August and early October

- all of the trails around the perimeter of the North Wetland and the parking lot should be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets

Biomass removal:

- biomass removal can be achieved using an amphibious machine (Truxor or equivalent) and a manual crew equipped with gas powered saws
- estimate 2 days with one machine and 3 crew
- the recommended target period to undertake this work is late October to December
- this work should not interfere with visitors wishing the use the trails around the North Pond or the parking lot
- cutting the stalks in the water will have the added benefit of achieving greater mortality through drowning
- the cut material can be piled in strategic locations along the shoreline to provide structure for birds, turtles, snakes, muskrats and other wildlife
- these piles will shrink and eventually become colonized by native plants
- new Phragmites shoots that emerge the following growing season can be controlled by pulling them from the pile and laying on top to dry (if the plants cannot be pulled out with the roots intact, they can be treated with herbicide)

Cost estimate:

herbicide application- ~\$6,000 (estimate based on 1 day, 4-person crew, equipment, chemical)
 biomass cutting and piling- ~\$7,500 (estimate based on 2 days, 3-person crew, equipment, includes manual cutting)

Year 2

Anticipate <10% regrowth; manual cutting in water and backpack treatment on dry land or possibly Habitat Aqua application on all surviving plants

Cost Estimate:

~\$2,000 (estimate based on ~ 1 day, 2-person manual crew spraying/possibly cutting re-growth in water; portion of costs could be absorbed if work is done by the crew while on site to undertake work in other areas)

Year 3

Anticipate <5% regrowth; manual cutting in water and backpack treatment on dry land or possibly Habitat Aqua application on all surviving plants; SCRCA staff or volunteers could control surviving plants

Cost estimate:

~\$1,000 (estimate based on ~ 1/2 day, 2-person manual crew spraying/possibly cutting re-growth in water; portion of costs could be absorbed if work is done by the crew while on site to undertake work in other areas)



Anticipated Control:

Year 1 anticipate >90% mortality of current population; est. cost \$13.5K

Year 2: anticipate >98% mortality of current population; est. cost \$2K

Year 3: anticipate 100% mortality of current population; est. cost 1K

Summary: achieve eradication in PMA 1 by end of Year 3; est. total cost \$16.5K

Pros

- herbicide treatment should result in >90% mortality after the first application
- cutting the stalks later in the fall will have several benefits: a) the removal of the biomass will immediately improve site lines and access to the water by visitors, b) removal of the standing stalks in the water will improve control efficacy by drowning the belowground structures, c) removing the standing stalks will improve native plant recovery and also improve the ability to see and treat any Phragmites re-growth the following year

Cons

- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- SCRCA staff or other personnel will need to be onsite the day the herbicide application takes place to speak with the public and allay concerns
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.1b Control Option #2

Year 1

- control the Phragmites with herbicide using the water safe Habitat Aqua for the majority of the Phragmites and WeatherPRO in areas close to mature trees
- can apply from the berm using a specialized track machine equipped with commercial grade herbicide application equipment and a manual crew using backpack spray units; 3 to 4-person crew required
- this work can take place between mid-July (birds finished nesting) to early October (before plants naturally senesce)
- remove standing dead during the dormant season using either a) Truxor or equivalent to cut and pile, b) Marsh Master with mulcher (would require water draw down), c) Centaur to roll or compress (would require water draw down), d) Centaur to roll or compress to be followed by a prescribed fire (would require water draw down)



Cost estimate:

Herbicide application- ~\$6,800 (estimate based on 1 day, 4-person crew, equipment, chemical)
biomass cutting and piling- ~\$7,500 (estimate based on 2 days, 3-person crew, equipment, includes manual cutting)

Year 2

Anticipate <5% re-growth; backpack sprayer treatment with Habitat Aqua on surviving plants except under trees

Cost estimate:

~\$2,200 (estimate based on ~ 1 day, 2-person crew; chemical costs will be higher; a portion of costs can be absorbed with crews on site to undertake work in other areas, or SCRCA staff could undertake work)

Year 3

Anticipate <1% re-growth; backpack sprayer treatment with Habitat Aqua on surviving plants except under trees

Cost estimate:

~\$1,000 (estimate based on ~ 1/2 day, 2-person crew; portion of costs can be absorbed if work is done by the crew while on site to undertake the work in other areas, or SCRCA staff could undertake work)

Anticipated Control:

Year 1: anticipate >95% mortality of current population; est. cost \$14.3K

Year 2: anticipate ~99% mortality of current population; est. cost \$2.2K

Year 3: anticipate 100% mortality of current population; est. cost \$1K

Summary: achieve eradication in PMA 1 by end of Year 3; est. total cost 17.5K

Pros

- use of the water safe herbicide allows for application to all of the Phragmites without the need to draw down the water levels
- the herbicide can be applied earlier in the growing season (late June/early July) and the plants will stay green after being treated
- Habitat Aqua could be applied from the berm without concern for over-drift into the water which should reduce the time to treat the entire area

Cons

- the active ingredient in Habitat Aqua (imazapyr) will kill mature trees so care must be taken when applying near vegetation that is not the target
- there is currently no permit process in place to allow the use of this product in Ontario
- the cost of Habitat Aqua is not yet known but, indications are that it will be ~5-6 times higher than WeatherPRO per litre

- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- use of a water safe herbicide may require general public and First Nation consultation
- SCRCA staff or other personnel will need to be onsite the day the herbicide application takes place to speak with the public and allay concerns
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.1c Control Option #3

Year 1

- control the Phragmites with herbicide using either Option 1 or Option 2 application methods but do not remove the biomass

Cost estimates: same as above for herbicide application ~\$10K

Pros

- cost savings by not removing standing dead biomass
- use of Habitat Aqua may cause weaker stalk development resulting in stalks falling over on their own during the winter
- birds may use older stalks in higher density areas for nesting

Cons

- appearance of dead Phragmites stalks for several years may detract from aesthetic enjoyment of the site by visitors
- presence of dead stalks will make it more difficult to observe and treat surviving plants in the following growing season
- presence of dead stalks in high density areas will delay native plant recovery
- presence of dead stalks may pose a liability risk due to fires
- use of WeatherPRO will require a water drawdown
- use of Habitat Aqua may be more expensive and care will need to take place close to trees and other valuable vegetation
- there is currently no permit process in place to allow the use of this product in Ontario
- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- SCRCA staff or other personnel will need to be onsite the day the herbicide application takes place to speak with the public and allay concerns

- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.2 Phragmites Management Area 2

Phragmites Management Area 2 (PMA 2) encompasses the Main Wetland (Figure 25). There is a substantial amount of high density Phragmites along the fringe and within the open water section of this wetland covering an estimated 4.6 ha (11.2 ac) area (Figure 26). Three potential control options for PMA 2 along with associated costs, expected outcomes and pros and cons are provided below.



Figure 25. Location of Phragmites Management Area 2 (PMA 2) at the Wawanosh Wetland Conservation Area.



Figure 26. Invasive Phragmites in the Main Wetland at the Wawanosh Wetland Conservation Area.

4.2a Control Option #1

Year 1

- utilize amphibious machines (Truxors or equivalent) to cut and pile the high density Phragmites in the pond
- recommend 10 days of work
- recommended timing is between mid- July and late fall
- estimate 50% of area targeted

Cost estimate: \$60,000 (based on 10 days, 2 machines cutting and piling Phragmites); additional costs to remove biomass from site

Year 2

- utilize amphibious machines (Truxors or equivalent) to cut and pile the high density Phragmites
- recommend 10 days of work
- recommended timing is between mid- July and late fall
- estimate 98% of area controlled

Cost estimate: \$60,000 (based on 10 days, 2 machines cutting and piling Phragmites); additional costs to remove biomass from site



Year 3

- manually cut to drown surviving plants in water using either Stihl gas powered saws, cane cutters or spades or treat with Habitat Aqua
- recommend 3 days of work
- recommended timing is between mid- July and late fall
- estimate 99% of area controlled
- can either be undertaken by contractor, SCRCA staff, volunteers or combination of these options

Cost estimate: \$6,750 (based on 3 days, 2-person crew, boat, required equipment)

Year 4

- manually cut to drown surviving plants in water using either Stihl gas powered saws, cane cutters or spades or treat with Habitat Aqua
- recommend 2 days of work
- recommended timing is between mid- July and late fall
- anticipate 100% of area controlled
- can either be undertaken by contractor, SCRCA staff, volunteers or combination of these options

Cost estimate: \$4,500 (based on 2 days, 2-person crew, boat, required equipment)

Anticipated Control:

Year 1: anticipate ~>95% mortality of cut population (1/2 of current area); est. costs \$60k

Year 2: anticipate ~98% mortality of current population (all current area cut); est. costs \$60k

Year 3: anticipate ~99% mortality of current population; est. costs \$6.75k

Year 4: anticipate ~100% mortality of current population; est. costs \$4.5k

Summary: achieve eradication in PMU 1 by end of Year 4; est. total cost \$131K

Pros

- areas cut each year should attain at least >95% mortality
- this method controls Phragmites and removes biomass at the same time
- mechanical control demonstrates an integrated pest management approach
- reduces overall herbicide use which can be an advantageous approach for garnering support during public consultations and outreach
- strategically placed Phragmites piles can provide structure for wetland wildlife to utilize
- the cleared area can be repopulated by native aquatic plants
- trails can remain open to the public while this work is occurring

Cons

- cutting and piling is time consuming and much less area can be covered in one day compared to herbicide application

- water levels would need to be maintained for at least 6 weeks after cutting to ensure drowning can take place

4.2b Control Option #2

Year 1

- apply Habitat Aqua to Phragmites in the pond using specialized equipment (Jon boat, Fat Truck, Marsh Master or other)
- estimate 4 days of work to treat entire area, 4-person crew
- anticipate >95% control
- recommended timing is between early August until mid-October (before plants naturally senesce)
- all of the trails around the perimeter of the Main Wetland should be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets
- remove biomass during dormant period using Marsh Master with mulcher (would require ice to support machine) or amphibious machine (Truxor or equivalent) to cut and pile; or leave biomass standing
- estimate 5 days (mulching) or up to 10 days (cutting and piling; would not need to cut all of the standing dead, strategically remove highest density areas)

Cost estimate:

Herbicide application-~\$24,000 (estimate based on 4 days, 4-person crew, equipment, chemicals)

Biomass mulching- ~\$24,000 (estimate based on 5 days; Marsh Master with mulcher)

Biomass cutting and piling - ~\$60,000 (estimate based on 10 days, 2 amphibious machines)

Year 2

- apply Habitat Aqua to surviving Phragmites in the pond using specialized equipment (Jon boat, Fat Truck, Marsh Master or other)
- estimate 3 days to cover entire area and treat surviving plants, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- some trails may need to be closed while this work is occurring
- anticipate 98% control
- biomass removal not required if undertaken the year before

Cost estimate:

Herbicide application-touch up of surviving plants: ~\$12,000 (estimate based on 3 days, equipment, 2 crew, chemical)



Year 3

- apply Habitat Aqua to surviving Phragmites in the pond using specialized equipment (Jon boat, Fat Truck, Marsh Master or other)
- estimate 2 days to cover entire area and treat surviving plants, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- some trails may need to be closed while this work is occurring
- anticipate 99% control

Cost estimate:

Herbicide application-touch up of surviving plants: ~\$8,000 (estimate based on 2 days, equipment, 2 crew, chemical)

Year 4

- apply Habitat Aqua to surviving Phragmites in the pond using specialized equipment (Jon boat, Fat Truck, Marsh Master or other)
- estimate 1 day to cover entire area and treat surviving plants, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- anticipate 100% control

Cost estimate:

Herbicide application-touch up of surviving plants: ~\$4,000 (estimate based on 1 day, equipment, 2 crew, chemical)

Anticipated Control:

Year 1: anticipate 95% mortality of current population; est. cost \$24K (no biomass removal) to \$84K (with biomass removal)

Year 2: anticipate 98% mortality of current population; est. cost \$12K

Year 3: anticipate 99% mortality of current population; est. cost \$8K

Year 4: anticipate 100% mortality of current population;

Summary: achieve eradication in PMU 1 by end of Year 4; est. total cost \$48K (no biomass removal) up to \$108K (with biomass removal)

Pros

- use of the water safe herbicide allows for application to all of the Phragmites without the need to draw down the water levels
- with the right equipment, a large area can be treated in one day
- the plants will stay green after being treated with this product which may reduce negative perceptions of the public toward the use of herbicides

- biomass removal post herbicide application greatly enhances the ability to find and treat surviving plants the following growing season, native plant response, and aesthetic enjoyment by park visitors

Cons

- the active ingredient in Habitat Aqua (imazapyr) will kill mature trees so care must be taken when applying near the treed section
- there is currently no permit process in place to allow the use of this product in Ontario
- the cost of Habitat Aqua is not yet known but, indications are that it will be ~5-6 times higher than WeatherPRO per litre
- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- use of a water safe herbicide may require general public and First Nation consultation
- SCRCA staff or other personnel may need to be onsite the day the herbicide application takes place to speak with the public and allay concerns
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.2c Control Option #3

Year 1

- helicopter application of Habitat Aqua for large, high-density cells
- estimate 1 hour of spraying
- anticipate >98% control efficacy
- utilize specialized equipment (Jon boat, Fat Truck, Marsh Master or other) for ground application of the herbicide to treat Phragmites in the buffer zones and pond edges
- estimate 3 days of work, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- trails around the Main Wetland will need to be closed
- anticipate >95% control
- remove biomass during dormant period using Marsh Master with mulcher (would require ice to support machine) or amphibious machines (Truxor or equivalent) to cut and pile; or leave biomass standing
- estimate 5 days (mulching) to 10 days (cutting and piling)



Cost estimate:

Herbicide application- aerial ~\$6,000 (estimate based on day rate which includes spraying plus flight to and from base, chemicals); ground ~\$18,000 (estimate based on 2 days, equipment, 2 crew, chemical)

Biomass mulching- \$24,000 (estimate based on 5 days; Marsh Master with mulcher)

Biomass cutting and piling - ~\$60,000 (estimate based on 10 days, 2 amphibious machines)

Year 2

- utilize appropriate equipment (Jon boat, Fat Truck, Marsh Master or other) to apply herbicide to treat surviving plants
- estimate 2 days to cover entire area, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- some trails around the perimeter of the Main Wetland may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets
- anticipate 99% control
- biomass removal not required if undertaken the year before

Cost estimate:

Herbicide application-touch up of surviving plants: ~\$8,000 (estimate based on 2 days, equipment, 2 crew, chemical)

Year 3

- utilize appropriate equipment (Jon boat, Fat Truck, Marsh Master or other) to apply herbicide to surviving plants
- estimate 1.5 days to cover entire area, 2-person crew
- recommended timing is between early August until mid-October (before plants naturally senesce)
- some trails around the perimeter of the Main Wetland may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets
- anticipate 100% control

Cost estimate:

Herbicide application-touch up of surviving plants: ~\$6,000 (estimate based on 1.5 days, equipment, 2 crew, chemical)

Anticipated Control:

Year 1 estimate >90% reduction of current population; est. \$24K (no biomass removal) to \$84K (with biomass removal)

Year 2: estimate 99% reduction of current population; est. cost \$8K

Year 3: estimate 100% reduction of current population; est. cost 6K

Summary: achieve eradication in PMU 1 by end of Year 3; est. total cost \$38K (no biomass removal) to \$98K (with biomass removal)

Pros

- use of the water safe herbicide allows for application to all of the Phragmites without the need to draw down the water levels
- helicopter application would cover in one hour an area that would take several days of ground application to treat
- the downdraft from the helicopter helps push the herbicide onto the leaves with an even coverage without breakage or disturbance to plants thereby increasing uptake
- the plants will stay green after being treated with this product which may reduce negative perceptions of the public toward the use of herbicides
- biomass removal post herbicide application greatly enhances the ability to find and treat surviving plants the following growing season, native plant response, and aesthetic enjoyment by park visitors

Cons

- buffer zones will need to be in place around mature trees, structures, trails etc. and only high-density cells (>70% Phragmites) should be targeted from the air to reduce herbicide contact with water and non-target species
- obtaining a permit for aerial application may be a time consuming and lengthy process with many conditions and additional work to satisfy safety of surrounding residents especially with regard to drinking water sources which may increase costs
- there is currently no permit process in place to allow the use of this product in Ontario
- the cost of Habitat Aqua is not yet known but, indications are that it will be ~5-6 times higher than WeatherPRO per litre
- ground application of Habitat Aqua will still be required to treat buffer zones
- the active ingredient in Habitat Aqua (imazapyr) will kill mature trees so care must be taken when applying near the treed section
- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- use of a water safe herbicide may require general public and First Nation consultation
- SCRCA staff or other personnel may need to be onsite the day the herbicide application takes place to speak with the public and allay concerns
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled work dates will need to be flexible

4.3 Phragmites Management Area 3

Phragmites Management Area 3 (PMA 3) encompasses the large upland area adjacent to the Main Wetland and the dry portions within the Main Wetland covering an estimated 21.4 ha (~54 ac) area (Figure 27). Phragmites in this PMA will be the most challenging to control because it is growing under large trees and interspersed among shrubs which constrains herbicide application and the ability to observe and target all of the plants (Figures 28, 29, 30). There will be a significant amount of manual control required in conjunction with use of specialized all-terrain spray equipment to access hard to reach sites and allow effective treatment of the large, dense cells.



Figure 27. Demarcation of Phragmites Management Area 3 in the Wawanosh Wetland Conservation Area.



Figure 28. Invasive Phragmites in the upland habitat adjacent to the Main Wetland at the Wawanosh Conservation Area.



Figure 29. Invasive Phragmites along the trail on the east side of the Main Wetland at the Wawanosh Wetland Conservation Area.



Figure 30. Invasive Phragmites along the trail in the western side of the Wawanosh Wetland Conservation Area.

Depending upon the amount of work that can be supported each year, substantial Phragmites control (~90% current levels) could be attained within 3 years and reductions >98% of current levels could be attained within 5 years. There is only one recommended control option for PMA 3 which is provided below with information on associated costs, expected outcomes and pros and cons.

4.3.a Control Option

Year 1

- control Phragmites in the dry areas with the herbicide WeatherPRO (and MSO) and in the wet areas with Habitat Aqua
- target large cells using specialized machine (Fat Truck, Marsh Master or equivalent) equipped with tank, hose and hand gun
- target areas along trails and forest edges using backpack spray units and an ATV equipped with spray tank, pump, hose and handgun
- estimate 5 days with a 4-person crew
- anticipate 1/3 of area treated
- recommended timing is between early August and mid-October (before plants naturally senesce)

- some trails in the vicinity of the area being treated may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets due to herbicide spraying or close proximity to crews using equipment
- standing dead biomass in the large, high-density sections would be best cut and piled or mulched using specialized equipment (Marsh Master, Truxor or equivalent)
- estimate 2 days mulching or 3 days cutting and piling
- standing dead Phragmites along the trails, around signage, and blocking views should be cut manually using gas powered saws
- estimate 3 days; 2-person crew
- the recommended target period to undertake this work is late October to early winter
- this work should not interfere with visitors

Cost estimate:

herbicide application- ~\$5,800/day x 5 days = \$29,000 (estimate based 4-person crew, specialized machine, ATV, equipment, chemical)

Biomass mulching- \$9,600 (estimate based on 2 days; Marsh Master with mulcher)

Biomass cutting and piling - ~\$18,000 (estimate based on 3 days, 4-person crew, 2 amphibious machines, manual cutting)

Year 2

- control Phragmites in the dry areas with the herbicide WeatherPRO (and MSO) and in the wet areas with Habitat Aqua
- target large cells using specialized machine (Fat Truck, Marsh Master or equivalent) equipped with tank, hose and hand gun
- target areas treated in previous year plus new areas along trails and forest edges using backpack spray units and an ATV equipped with spray tank, pump, hose and handgun
- estimate 5 days with a 4-person crew
- anticipate 2/3 of area treated
- recommended timing is between early August and mid-October (before plants naturally senesce)
- some trails in the vicinity of the area being treated may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets
- standing dead biomass in the large, high-density sections would be best cut and piled or mulched using specialized equipment (Marsh Master, Truxor or equivalent)
- estimate 2 days mulching or 3 days cutting and piling
- standing dead Phragmites along the trails, around signage, and blocking views should be cut manually using gas powered saws
- estimate 3 days; 2-person crew
- the recommended target period to undertake this work is late October to early winter
- this work should not interfere with visitors

Cost estimate:

herbicide application- ~\$5,800/day x 5 days = \$29,000 (estimate based 4-person crew, specialized machine, ATV, equipment, chemical)

Biomass mulching- \$9,600 (estimate based on 2 days; Marsh Master with mulcher)

Biomass cutting and piling - ~\$18,000 (estimate based on 3 days, 4-person crew, 2 amphibious machines, manual cutting)

Year 3

- control Phragmites in the dry areas with the herbicide WeatherPRO (and MSO) and in the wet areas with Habitat Aqua
- target large cells using specialized machine (Fat Truck, Marsh Master or equivalent) equipped with tank, hose and hand gun
- target areas treated in previous years plus new areas along trails and forest edges using backpack spray units and an ATV equipped with spray tank, pump, hose and handgun
- estimate 5 days with a 4-person crew
- anticipate 100% of area treated
- recommended timing is between early August and mid-October (before plants naturally senesce)
- some trails in the vicinity of the area being treated may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets
- standing dead biomass in the large, high-density sections would be best cut and piled or mulched using specialized equipment (Marsh Master, Truxor or equivalent)
- estimate 2 days mulching or 3 days cutting and piling
- standing dead Phragmites along the trails, around signage, and blocking views should be cut manually using gas powered saws
- estimate 3 days; 2-person crew
- the recommended target period to undertake this work is late October to early winter
- this work should not interfere with visitors

Cost estimate:

herbicide application- ~\$5,800/day x 5 days = \$29,000 (estimate based 4-person crew, specialized machine, ATV, equipment, chemical)

Biomass mulching- \$9,600 (estimate based on 2 days; Marsh Master with mulcher)

Biomass cutting and piling - ~\$18,000 (estimate based on 3 days, 4-person crew, 2 amphibious machines, manual cutting)

Year 4

- control Phragmites in the dry areas with the herbicide WeatherPRO (and MSO) and in the wet areas with Habitat Aqua
- target surviving plants in areas treated in previous years using backpack spray units and an ATV equipped with spray tank, pump, hose and handgun
- estimate 5 days with a 2-person crew



- anticipate 100% of area re-treated
- recommended timing is between early August and mid-October (before plants naturally senesce)
- some trails in the vicinity of the area being treated may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets

Cost estimate:

herbicide application- ~\$13,750 (estimate based 2-person crew, specialized machine, ATV, equipment, chemical)

Year 5

- control Phragmites in the dry areas with the herbicide WeatherPRO (and MSO) and in the wet areas with Habitat Aqua
- target surviving plants in areas treated in previous years using backpack spray units and an ATV equipped with spray tank, pump, hose and handgun
- estimate 5 days with a 2-person crew
- anticipate 100% of area re-treated
- recommended timing is between early August and mid-October (before plants naturally senesce)
- some trails in the vicinity of the area being treated may need to be closed to public while this work is taking place to reduce any potential for issues with visitors or their pets

Cost estimate:

herbicide application- ~\$13,750 (estimate based 2-person crew, specialized machine, ATV, equipment, chemical)

Anticipated Control:

Year 1 anticipate >90% mortality of current population in the portion (1/3) of the area treated; est. cost \$56.6K

Year 2: anticipate >90% mortality of current population in the portion (2/3) of the area treated; est. cost \$56.6K

Year 3: anticipate >90% mortality of current population in the portion (100%) of the area treated; est. cost \$56.6K

Year 4: anticipate >98% control in the PMU B; est. cost \$13.8K

Year 5: anticipate ~99% control in the PMU B; est. cost \$13.8K

Year 6: annual touch up as required

Summary: attain ~99% control in PMU B by end of Year 5; est. total cost \$197.3K

Pros

- herbicide treatment should result in >90% mortality within the area treated after the first application

- cutting the stalks during the dormant period will improve native plant recovery and the ability to see and treat surviving Phragmites the following growing season

Cons

- herbicide application will require trails and portions of the parking area to be cordoned off during the application period which will cause some disruption to visitors
- herbicide use in natural areas may cause some consternation of visitors and upfront education will need to take place
- SCRCA staff or other personnel will need to be onsite the day the herbicide application takes place to speak with the public and allay concerns
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.4 Phragmites Management Area 4

Phragmites Management Area 4 (PMA 4) encompasses the area along the southern boundary of the Wawanosh Wetland CA including the section along Highway 402 (Figure 20). Here, Phragmites is scattered throughout the upland area adjacent to, and throughout, the highway road allowance (Figures 31, 32, 33). The area is dry and would be most efficiently controlled using herbicides. There is only one recommended control option for PMA 4 which is provided below including information on associated costs, expected outcomes and pros and cons. Since a large portion is on MTO property, they will need to be engaged. MTO could hire a contractor to undertake the control work on their property or cover the cost for work to be done by the same crew undertaking work on the WWCA property. This later option would be the most cost effective and the MTO property can be easily accessed off of the trail that goes around the southern end of the WWCA. There is only one recommended control option for PMA 3 which is provided below with information on associated costs, expected outcomes and pros and cons.



Figure 31. Phragmites in the upland area adjacent to Highway 402, Wawanosh Wetland Conservation Area, January 2021.



Figure 32. Phragmites within the Highway 402 road allowance adjacent to Wawanosh Wetland Conservation Area, January 2021.



Figure 33. Phragmites in the upland area adjacent to Highway 402, Wawanosh Wetland Conservation Area, January 2021.

4.4a Control Option

Year 1

Herbicide Application:

- treat Phragmites on the dry portions with herbicide (WeatherPRO + MSO)
- estimate 1 day with a 2-person crew using backpack spray units and an ATV equipped with tank, hose and hand gun
- the recommended target period to undertake this work is between August and early October
- this area can be accessed from the trail at the south end of WWCA and the work should not interfere with visitors
- the high-density cells along the highway could be mulched using a bobcat or equivalent and a manual crew equipped with gas powered saws could remove standing dead around obstructions (signs, trees etc.)
- estimate 1 day; recommended target period to undertake this work is late October to December or very early spring (before birds start nesting)

Cost estimate:

herbicide application- ~\$2,400 (estimate based on 1 day, 2-person crew, equipment, chemical)

biomass mulching and manual cutting- ~\$3,000 (estimate based on 1 day, 2-person crew, equipment)



Year 2

Anticipate <10% regrowth; target surviving plants with herbicide using backpack spray units

Cost Estimate:

~\$2,400 (estimate based on ~ 1 day, 2-person crew, ATV, equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Year 3

Anticipate <1% regrowth; target surviving plants with herbicide (switch to Arsenal Powerline) using backpack spray units

Cost estimate:

~\$1,100 (estimate based on ~ 1/2 day, 2-person crew, ATV, equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Anticipated Control:

Year 1 anticipate >90% mortality of current population; est. cost \$5.4K

Year 2: anticipate >98% mortality of current population; est. cost \$2.4K

Year 3: anticipate 100% mortality of current population; est. cost \$1.1K

Summary: achieve eradication in PMA 3 by end of Year 3; est. total cost \$8.9K

Pros

- herbicide treatment should result in >90% mortality after the first application
- the entire area could be treated in ~1 day
- control of the Phragmites along Highway 402 will require that MTO become a partner and may lead to a more comprehensive control efforts including the northern side of the highway
- the MTO portion could be accessed from the WWCA trail thereby negating the need for a crash truck
- removal of the high-density cells by mulching and manual cutting will greatly improve the ability to see and re-treat surviving Phragmites the following growing season
- this work should not interfere with park visitors wishing to use the trail in that section of the WWCA

Cons

- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible
- controlling Phragmites in close proximity to the highway will take extra time since the crew will need to take into account air currents produced by transport trucks and, other large vehicles

4.5 Phragmites Management Area 5

Phragmites Management Area 5 (PMA 5) covers private land adjacent to the conservation area on the eastern side of the WWCA as well as the road allowance along Blackwell Side Road (Figure 20). In this section, the Phragmites is located in both wet and dry areas including a ditch that runs along the eastern side of the WWCA property and a pond on private land (Figures 34, 35, 36). It will be very difficult to control the Phragmites in the ditch without causing mortality to the woody plants interspersed among the Phragmites. These plants can quickly regenerate but the landowner adjacent to this section will need to be engaged and also provide their approval to access the ditch along their side. This same landowner has the pond with Phragmites. The cost to control Phragmites on these adjacent properties should be absorbed by the WWCA control program. Controlling Phragmites along the Blackwell Side Road and the other roads in the vicinity will require Municipal engagement to hire a contractor to undertake this work. There is only one recommended control option for PMA 5 which is provided below with information on associated costs, expected outcomes and pros and cons.



Figure 34. Phragmites in a ditch on private property adjacent to the trail along the southeastern sections of the Wawanosh Wetland Conservation Area, January 2021.



Figure 35. Phragmites in a ditch adjacent to the trail along the southeastern section of the Wawanosh Wetland Conservation Area, January 2021.



Figure 36. Phragmites on the edge of a pond located on private property adjacent to the southeastern section of the Wawanosh Wetland Conservation Area, January 2021.



4.5a Control Option

Year 1

Herbicide Application:

- treat Phragmites on the dry portions with herbicide (WeatherPRO + MSO) and the wet areas with Habitat Aqua
- estimate 1 day with a 2-person crew using backpack spray units and an ATV equipped with tank, hose and hand gun
- the recommended target period to undertake this work is between August and early October
- the ditch can be accessed from the trail on the eastern side of the WWCA
- because of the close proximity of the ditch, this section of the trail should be closed to park visitors while this work is being undertaken
- the section along the edge of the pond could be treated using backpack sprayer and the standing dead biomass should be manually cut during the dormant season
- estimate 1/2 day
-

Cost estimate:

herbicide application- ~\$2,400 (estimate based on 1 day, 2-person crew, ATV, equipment, chemical)

biomass mulching and manual cutting- ~\$1,000 (estimate based on 1/2 day, 2-person crew, equipment)

Year 2

Anticipate <10% regrowth; target surviving plants with herbicide using backpack spray units

Cost Estimate:

~\$2,200 (estimate based on ~ 1 day, 2-person crew, ATV, equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Year 3

Anticipate <1% regrowth; target surviving plants with herbicide (switch to Arsenal Powerline) using backpack spray units

Cost estimate:

~\$1,100 (estimate based on ~ 1/2 day, 2-person crew, ATV, equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Anticipated Control:

Year 1 anticipate >90% mortality of current population; est. cost \$3.4K

Year 2: anticipate >98% mortality of current population; est. cost \$2.2K

Year 3: anticipate 100% mortality of current population; est. cost \$1.1K

Summary: achieve eradication in PMA 4 by end of Year 3; est. total cost \$6.7K

Pros

- herbicide treatment should result in >90% mortality after the first application
- the entire area could be treated in ~1 day including the Blackwell Side Road
- removal of the high-density Phragmites on the edge of the pond will greatly improve the ability to see and re-treat surviving Phragmites the following growing season
- controlling the Phragmites in this area will help protect the WWCA lands from re-infestation long-term
- the work along Blackwell Side Road will require that the Municipality and County become partners which will hopefully lead to a more comprehensive program to control Phragmites along all Municipal and County roads

Cons

- the work on private lands will require up front consultations and approvals which may take time
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

4.6 Phragmites Management Area 6

Phragmites Management Area 6 (PMA 6) encompasses the lands west of the WWCA property including the Wawanosh Drain, the park land and private properties (Figure 20). Phragmites is not yet well established in this area but, small cells are scattered along the edge of the drain and throughout the park (Figures 37, 38). There is only one recommended control option for PMA 6 which is provided below with information on associated costs, expected outcomes and pros and cons.



Figure 37. Phragmites along the western bank of the Wawanosh Drain, January 2021.



Figure 38. Phragmites in the naturalized area west of the Wawanosh Drain, January 2021.



4.6a Control Option

Year 1

Herbicide Application:

- treat Phragmites on the dry portions with herbicide (WeatherPRO + MSO) and the wet areas with Habitat Aqua
- estimate 1 day with a 2-person crew using backpack spray units and an ATV equipped with tank, hose and hand gun
- the recommended target period to undertake this work is between August and early October
- the Phragmites density is not high enough in any of the areas to require cutting during the dormant season

Cost estimate:

herbicide application- ~\$2,400 (estimate based on 1 day, 2-person crew, ATV, equipment, chemical)

Year 2

Anticipate <5% regrowth; target surviving plants with herbicide using backpack spray units

Cost Estimate:

~\$1,100 (estimate based on ~ 1/2 day, 2-person crew, ATV equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Year 3

Anticipate <1% regrowth; target surviving plants with herbicide (switch to Arsenal Powerline) using backpack spray units

Cost estimate:

~\$1,100 (estimate based on ~ 1/2 day, 2-person crew; ATV, equipment, chemical; portion of costs could be absorbed if crew is already on-site to undertake work in other areas)

Anticipated Control:

Year 1 anticipate >95% mortality of current population; est. cost \$2.4K

Year 2: anticipate >99% mortality of current population; est. cost \$1.1K

Year 3: anticipate 100% mortality of current population; est. cost \$1.1K

Summary: achieve eradication in PMA 5 by end of Year 3; est. total cost \$4.6K

Pros

- herbicide treatment should result in >95% mortality after the first application because the densities are not yet high
- the entire area could be treated in ~1 day

- controlling the Phragmites in this area will help protect the WWCA lands from re-infestation long-term
- will require that the Municipality and County become partners which will hopefully lead to a more comprehensive program to control Phragmites along all Municipal and County roads

Cons

- the work on private lands will require up front consultations and approvals which may take time
- weather is always a factor for herbicide application and treatments should not occur on days with high winds, high heat or humidity or rain, therefore scheduled dates will need to be flexible

5. Considerations

There are a number of items that would enhance this project and require consideration:

- 1) establishing an early detection rapid response program would ensure Phragmites is controlled in a timely fashion and safeguard long term protection of the WWCA and surround areas from re-invasion
- 2) training volunteers in Phragmites recognition and mechanical control methods along with facilitating work events would decrease maintenance costs and ensure long-term engagement and protection of the WWCA; the Municipality or SCRCA could cover the liability of volunteers (as an example, the Municipality of Kincardine covers liability for all of the volunteers working to keep Municipal lands, including the Lake Huron shoreline, free from Phragmites re-infestation; or some volunteer groups are members of FOCA and are covered under their insurance)
- 3) the responsibility for covering control costs on private lands will need to be determined up front; this could either be covered under the WWCA project or, property owners could be asked to contribute a portion of the control costs and/or, provide in-kind support
- 4) an outreach program to train local residents on how to identify and mechanically control young Phragmites would be invaluable for fostering community support and ensuring that the properties in this area do not become re-infested; this program could also be incorporated into local schools as part of their outdoor education or volunteer hour program
- 5) once the high density Phragmites has been removed, some areas may require seeding; this could be undertaken as a local school project, by volunteers or by SCRCA staff
- 6) the ability to raise or lower the water levels in the wetlands will assist with control efficiencies, for instance, lowering the water level will allow more Phragmites to be

- treated with WeatherPRO along the edge of the berm while raising the water level will promote drowning after the stalks have been cut
- 7) the development of a regional control program which would further serve to protect the Wawanosh Wetlands and other natural areas, mitigate further spread, reduce issues with liability and impacts to infrastructure and ultimately reduce associated impact and control costs; This program could be managed by the SCRCA and work on Municipal, County and MTO roads and privately owned land throughout the region could be supported through a fee for service with potential financial support from the Provincial and Federal Government
 - 8) a website could be established to include information about the restoration project, updates, announcements and other pertinent information and also garner more financial support (ie. visitor donations) and interest as well as engagement of additional partners including corporate sponsorship
 - 9) educational signage (to include a photo showing current conditions with a time stamp) could be posted at the parking lot area along with pamphlets or other means of information dissemination such as a website address on the sign

6. Summary

This WWCA Phragmites Management Plan encompasses both the WWCA and adjacent properties which has been divided into six Phragmites Management Areas (PMAs) to facilitate better control program implementation. PMA 1, PMA 2, and PMA 3 are on the WWCA property and will require the most time, effort and investment to be restored. PMA 4 which covers both WWCA and MTO property and PMA 5 and PMA 6 which are on the adjacent lands, all currently have much less Phragmites but, they should also be included in control efforts to ensure the long-term protection of the WWCA. It is recommended that Phragmites in the area around the North Pond (PMA 1) be targeted first followed by PMA 2 and PMA 3 with the other three PMA's concurrently being managed. For each PMA, the estimated years to achieve significant control (>98%) or total eradication and costs are: a) PMA 1: 3 years at ~16.5k \$; b) PMA 2: 3 to 4 years at ~\$131.3K; c) PMA 3: 5 years at ~\$197.3k; d) PMA 4: 3 years at ~\$8.9K; d) PMA 5: 3 years at ~6.7k, and e) PMA 6: 3 years at ~\$4.6k (see summary Table 1). With sufficient funding, this project could attain significant reduction in Phragmites by the end of Year 4 and >98% eradication by Year 6. The long-term, the protection of this site will require annual assessments and control of surviving plants or pioneer populations. The establishment of a Regional Control Program will further reduce re-introduction. Establishing partnerships with the Municipality, County, MTO, local residents, volunteer groups, and other entities with a vested interest will be imperative for ensuring successful outcomes both short- and long-term.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
PMA 1	\$13.5k	\$2k	\$1k	In-kind	In-kind	In-kind	\$16.5k
PMA 2	\$60k	\$60k	\$6.75k	\$4.5k	In-kind	In-kind	\$131.25k
PMA 3	\$56.6k	\$56.6k	\$56.6k	\$13.75k	\$13.75k	In-kind	\$197.3k
PMA 4	\$5.4k	\$2.4k	\$1.1k	In-kind	In-kind	In-kind	\$8.9k
PMA 5	\$3.4k	\$2.2k	\$1.1k	In-kind	In-kind	In-kind	\$6.7k
PMA 6	\$2.4k	\$1.1k	\$1.1k	In-kind	In-kind	In-kind	\$4.6k
Total	\$141.3k	\$124.3k	\$67.65k	\$18.25k	\$13.75k		\$365.25k

Table 1. Summary of Option A pricing for each Phragmites Management Area (PMA) demarcated for the Wawanosh Wetland Conservation Area and Adjacent land.

agreement for the property for approval by Dawn-Euphemia Council as well as the Board of Directors.”

CARRIED

Attached is the draft copy of the lease for review by the Board of Directors.

The lease has been revised several times through discussions with Dawn-Euphemia staff and consultation with legal counsel. Dawn-Euphemia staff have recommended changing clause 4(6) and Dawn-Euphemia council requested the following change:

Current clause:

- 4(6) If at any time and from time to time, the C.A. receives an arm’s length offer to purchase the Premises which it is willing to accept (other than any offer from any government department, commission, or Conservation Authority or public body), then it shall give the Municipality a copy of such an offer and the Municipality shall have the right for a period of forty-five (45) days from receiving such an offer to purchase the Lands and Premises on the same terms and conditions as set out therein.

Dawn Euphemia has requested that clause 4(6) be revised to reflect:

that in the event that the CA is in a position to dispose of the Shetland Park and Campground, due to change of legislation, lack of interest or other reason, then the municipality shall have first option of ownership and as such, the CA shall donate the park back to the municipality and that the municipality shall have the right for a period of forty-five (45) days to accept or reject the transfer of ownership; AND upon transfer of ownership, the Conservation Authority may be able to recoup appropriate costs as mutually agreed to by both parties.

Municipal Concerns:

- That the Shetland Conservation Area remain open to the public and not be sold to a private investor
- Hesitant to make capital investments in property if it could be sold and investment lost
- Private investor could make an offer that is beyond what the Municipality is willing to pay

Financial Impact:

Amending clause 4(6) as recommended by the Municipality would limit the Authority and any future Board of Directors if they deem it necessary to sell this property. Although the Board of Directors 2020 motion “affirms the Authority’s commitment to retain the property in perpetuity”, legal counsel has advised against such a clause.

In the event that the Municipality wishes to make a significant capital investment in the property, subsequent agreements can be drafted to protect that investment.



THE CORPORATION OF THE TOWNSHIP OF DAWN-EUPHEMIA

4591 Lambton Line, RR 4, Dresden, ON N0P 1M0
 Tel: 519-692-5148 Fax: 519-692-5511 Public Works: 519-692-5018
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August 27, 2021

Greg Wilcox
 Manager of Conservation Areas
 St. Clair Region Conservation Authority
 205 Mill Pond Cres.
 Strathroy, Ontario
 N7G 3P9

Re: Shetland Campground Lease

Mr. Wilcox,

At the regular meeting of Council, on Tuesday, August 3, 2021, Council was presented with a report regarding the Shetland Campground Lease. The report was discussed at length, and the following resolution was passed:

2021-131

Shetland Campground Lease

That Council requests the St. Clair Region Conservation Authority (SCRCA) Board of Directors to revise clause 4.6 of the draft "Conservation Area Lease and Management Agreement" to reflect that in the event that the Conservation Authority is in a position to dispose of the Shetland Park and Campground, due to change of legislation, lack of interest or other reason, then the municipality shall have first option of ownership and as such, the Conservation Area shall donate the park back to the municipality and that the municipality shall have the right for a period of forty-five (45) days to accept or reject the transfer of ownership; AND upon transfer of ownership, the Conservation Authority may be able to recoup appropriate costs as mutually agreed to by both parties. *Carried*

At this time, we trust that this resolution will suffice to move forward with a lease agreement that is beneficial to both the SCRCA and the Municipality.

Please do not hesitate to contact Donna Clermont, Administrator-Clerk with further suggestions or questions that should arise.

Sincerely,

Terri Towstiu
 Deputy-Clerk

Cc: Donna Clermont, Administrator-Clerk

Attachment: Report dated August 3, 2021 from Donna Clermont, Administrator Clerk Re: Shetland Campground Lease

Conservation Area Lease and Management Agreement

Made as of the 1 day of January, 2022.

B E T W E E N:

ST. CLAIR REGION CONSERVATION AUTHORITY (the “C.A.”)

-and-

TOWNSHIP OF DAWN-EUPHEMIA (the “Municipality”)

WHEREAS the C.A. owns those lands (hereinafter referred to as the “Lands” or the “Premises”) known as the Shetland Conservation Area in the Township of Dawn-Euphemia, in the County of Lambton which are more particularly described as CON 3 W PT LOT 26 S OF RIVER IRREG. and CON 3 PT LOT 26 PT LOT 27 REG. (PINS 43372-0083 and 43372-0084)

AND WHEREAS the C.A. and the Municipality have agreed to enter into this Agreement to provide for the lease and management of those Lands by the Municipality;

NOW THEREFORE THIS AGREEMENT WITNESSES that, in consideration of the mutual promises, covenants and agreements herein contained, the C.A. and the Municipality agree each with the other as follows:

1. GRANT OF LEASE

- (1) The C.A. leases the Lands to the Municipality:
 - (a) at the Rent set forth in Section 2;
 - (b) for the Term set forth in Section 3; and
 - (c) subject to the conditions and in accordance with the covenants, obligations and agreements herein this Lease and Management Agreement (the “Agreement” or the “Lease”).

2. RENT

- (1) Rent means the amounts payable by the Municipality to the C.A. pursuant to this Section.
- (2) The Municipality covenants to pay to the C.A., during the Term (as hereinafter defined) of this Agreement rent in the sum of **two dollars (\$2.00)** per annum, payable annually on the first day of each year of the Term;
- (3) The Municipality further covenants to pay all other sums required by this Agreement to be paid to the C.A. or to any other party pursuant to the provisions of this Agreement.
- (4) The Municipality and the C.A. agree that it is their mutual intention that this Agreement shall be completely carefree for the C.A. and the Municipality promises to pay the following expenses related to the Premises;
 - (i) any licenses or permits that the Municipality may require;
 - (ii) utilities (including but not limited to gas, electricity, water, heat, air-conditioning);
 - (iii) maintenance costs;

- (iv) insurance premiums;
 - (v) municipal property taxes and related assessments against the Lands and any buildings or structures thereon;
- (5) The Municipality agrees to arrange for all of the foregoing charges to be invoiced directly to the Municipality as far as it is possible to do so, and for any such charges invoiced directly to the Municipality, the Municipality shall pay same as and when they become due and shall produce proof of payment to the C.A. immediately if requested to do so. For any charges which cannot be directly invoiced to the Municipality (e.g. taxes, insurance premiums), the C.A. shall send the Municipality copies of such invoices and the Municipality agrees to pay such charges (or reimburse the C.A. if the C.A. has already paid such charges) upon receipt. Charges past thirty (30) days from the date of delivery to the C.A. shall accrue interest at 10% per annum.
- (6) The Municipality hereby agrees to indemnify and protect the C.A. from any liability accruing to the C.A. in respect of the expenses payable by the Municipality as provided for herein, and if the Municipality fails to make any of the payments required by this Agreement, then the C.A. may make such payments and charge them to the Municipality.

3. TERM, POSSESSION & TERMINATION

- (1) The Municipality shall have possession of the Lands for an initial term of five (5) years, commencing on the 1st day of January, 2021 and ending on the 31st day of December, 2026, (the "Term").
- (2) Subject to the C.A.'s rights under this Agreement, and as long as the said Agreement is in good standing the C.A. covenants that the Municipality shall have quiet enjoyment of the Lands during the Term of this Agreement without any interruption or disturbance from the C.A. or any other person or persons lawfully claiming through the C.A..
- (4) Unless a written notice of termination is given by either party to the other by June 30th, 2026, this Agreement shall automatically renew for a further period of five (5) years after August 31, 2026 on the same terms and conditions (except there shall be no further right of renewal) .
- (5) This Agreement may be terminated effective December 31st of any year of the Term or any renewal term if the party who wishes to terminate provides written notice thereof to the other party no later than June 30th of such year. For clarity, in order to terminate this lease on December 31st 2022, a party who wishes to terminate would need to provide written notice to the other party no later than June 30th, 2022.

4. ASSIGNMENT, RIGHT OF FIRST REFUSAL, SEASON CAMPERS

- (1) The Municipality shall not assign this Agreement or sublet the whole or any part of the Lands to any other party without first obtaining prior written approval from the C.A, and the Municipality hereby waives its right to the benefit of any present or future Act of the Legislature of Ontario which would allow the Municipality to assign this Agreement or sublet the Lands without the C.A.'s prior written approval.
- (2) Any consent granted by the C.A. shall be conditional upon the assignee, sublessee or occupant executing a written agreement directly with the C.A. agreeing to be bound by all the terms of this Agreement as if the assignee, sublessee or occupant had originally executed this Agreement as tenant.

- (i) For greater certainty, this section does not apply to seasonal camper agreements administered by the Municipality, the written approval of which is not required from the C.A.
- (3) The C.A. is not responsible for or liable for the administration of or any costs or claims related to seasonal campers or seasonal camper lease agreements, including any costs associated with evicting seasonal campers for non-payment, etc. The Municipality shall administer seasonal camper agreements in accordance with all applicable legislation, ensuring that seasonal campers shall not acquire any residential leasehold rights, protection under the Residential Tenancies Act, or other such claims, and shall indemnify the C.A. in respect of this covenant.
- (4) The consent of the C.A. to any assignment or subletting shall not operate as a waiver of the necessity for consent to any subsequent assignment or subletting.
- (5) Any consent given by the C.A. to any assignment or other disposition of the Municipality's interest in this Agreement or in the Lands shall not relieve the Municipality from its obligations under this Agreement, including its management of the Lands as provided for herein.
- (6) If at any time and from time to time, the C.A. receives an arm's length offer to purchase the Premises which it is willing to accept (other than any offer from any government department, commission, or Conservation Authority or public body), then it shall give the Municipality a copy of such an offer and the Municipality shall have the right for a period of forty-five (45) days from receiving such an offer to purchase the Lands and Premises on the same terms and conditions as set out therein.

5. USE & MANAGEMENT

- (1) During the Term of this Agreement, the Municipality will use, occupy and manage the Lands for park, recreational, camping, and conservation purposes only, and for no other purpose except with the C.A.'s prior written approval.
- (2) The Municipality shall manage the Lands at it's own expense, in compliance with all laws, regulations and Ministry orders or certificates.
- (3) The Municipality shall not do or permit to be done in, on or upon the Lands anything which may:
 - (a) constitute a nuisance;
 - (b) cause damage to the Lands including environmental damage or contamination of any kind;
 - (c) cause injury or annoyance to occupants of neighbouring Premises;
 - (d) make void or voidable any insurance upon the Land;
 - (e) constitute a breach of any by-law, statute, order or regulation of any municipal, provincial or other competent authority relating to the Lands.
- (4) The Municipality shall at all times use and manage the Lands in a manner which is consistent with the objective, policies and guidelines of the C.A., which objective, policies and guidelines may be revised and/or updated from time to time. Nothing in this Section 5(4) shall be construed as a delegation of authority from the C.A. to the Municipality.

6. MANAGEMENT OF THE PROPERTY

- (1) In connection with the management of the Lands the following provisions shall apply:
- (a) The Municipality shall be responsible for all signs and for directing the public to and from those parts of the Lands where appropriate. And agrees to permit the C.A.'s name to be appropriately displayed on signs erected in areas where the C.A. has contributed to the land assembly program, such display to be in such manner and size as is agreed upon by the Municipality and the C.A.
 - (b) The Municipality shall be responsible for all necessary administrative and supervisory services and facilities in connection with the maintenance, development and use of the Lands;
 - (c) From time to time, the Municipality shall conduct inspection of the Lands related to the activities outlined in this Agreement, should any non-trivial concerns be identified (i.e., any substantial damage or any changes materially affect the appearance or character of the Lands), the Municipality shall give written notice to the C.A. immediately.
 - (d) The Municipality shall be bound by, and shall adhere to, all regulations, restrictions and/or certificate conditions placed upon the Lands by a Ministry or by the C.A.
 - (e) The Municipality or the C.A. may plant additional trees on the Lands as part of the Memorial Tree Program of the St. Clair Region Conservation Foundation or Municipal Memorial Tree Program.
 - (i) Only trees native to the local region shall be planted. The sourcing of those trees shall be from nurseries that grow trees from seeds rather than from other methods (i.e., grafting).
 - (f) The C.A. retains exclusive control and management of the Sydenham River (the "River") that runs through the Lands. Notwithstanding the forgoing, the Municipality shall have control and management of the boat launch and dock areas, provided however that C.A. approval shall be required for shoreline alteration. The Municipality shall have ongoing obligations with respect to erosion management and control, as directed by the C.A.

7. REPAIR AND MAINTENANCE

- (1) The Municipality covenants that during the Term of this Agreement and any renewal thereof it shall keep in good condition the Lands and Premises including all alterations and additions made thereto, and shall, with or without notice, promptly make all necessary repairs and replacements as would a prudent tenant under the circumstances, but the Municipality shall not be liable to effect repairs attributable to reasonable wear and tear.
- (2) The Municipality shall permit a representative or a person authorized by the C.A. to enter Premises to examine the condition thereof and view the state of repair at reasonable times. If upon such examination repairs are found to be necessary, written notice of the repairs required shall be given to the Municipality by or on behalf of the C.A. and the Municipality shall make the necessary repairs within the time specified in the notice.
- (3) If the Municipality refuses or neglects to keep the Lands and buildings in good repair, the C.A. has the right, but not the obligation, to effect the repairs without being liable for any loss, damage or inconvenience to the Municipality in connection with its entry and repairs, and if the C.A. makes repairs the Municipality

shall pay the cost of them immediately.

- (4) Upon the expiry of the Term or other determination of this Agreement the Municipality agrees peaceably to surrender the Premises, including any alterations or additions made thereto, to the C.A. in a state of good repair, reasonable wear and tear and damage by fire, lightning and tempest only excepted.

8. ALTERATIONS AND ADDITIONS

- (1) With the exception of minor alterations or improvements to existing structures or the erection of reasonable signage, the Municipality may not make any additions, alterations, replacements or improvements or erect any buildings or structures ("**Changes**") to/on the Lands without the express written consent of the C.A. For clarity, any Changes which would ordinarily require a building permit or which would alter the footprint of existing buildings, or which would require the removal of trees or brush, shall require approval.
- (i) Notwithstanding the forgoing, the Municipality shall have an obligation to remove Hazard Trees at its expense without requiring approval from the C.A. For the purposes of this Agreement, Hazard Tree shall mean any tree on the Lands which is dead, dying or diseased and/or which poses an imminent threat of injury to person or property.
- (2) Prior to the C.A. approving any Changes, the Municipality shall submit to the C.A. conceptual plans of the proposed Changes for the C.A.'s approval. Within thirty (30) days after receiving such plans from the Municipality, the C.A. shall advise the Municipality in writing whether or not it approves of the Changes, and if not, request modifications to such plans and other items. Within fifteen (15) days after the Municipality receives the C.A.'s request, the Municipality shall submit revised plans and other similar material for the C.A.'s approval, and the parties agree to negotiate in good faith to modify the proposed Changes in order to obtain the C.A.'s consent thereto within the limits of the C.A.'s rights to withhold consent set out under this section.

9. INSURANCE

- (1) **C.A.'s insurance** During the Term of this Agreement and any renewal thereof, the C.A. shall take out and maintain with respect to the Lands, insurance coverage insuring against loss or damage by fire, lightning, storm, and other perils that may cause damage to the Lands and buildings or to its property located on the Lands. Any cost and expense related to such insurance policies shall be paid (or reimbursed) by the Municipality as set out in section 2.
- (2) **Municipality's insurance** The Municipality shall, at its sole cost and expense, take out and maintain in full force and effect, during the Term and any renewal thereof, the following insurance:
- (a) Comprehensive general liability and property damage Insurance, protecting the Municipality against claims for personal and bodily injury, death, property damage, third party or public liability claims resulting from its operations and arising from any accident or occurrence upon or in or on the Premises or the places chattels from any cause to an amount not less than FIVE MILLION (5,000,000.00); provided that such policy shall contain a cross liability clause. Such policy shall add the C.A. as additional insured with respect to the Municipality's liability in relation to their operation and management of the Lands.
- (b) "All-risk" insurance insuring against the risk of damage to the Municipality's property within the Lands caused by fire, flood or other perils and the policy shall provide for coverage on a replacement cost basis to protect the

Municipality's chattels, decorations and improvements.

- (3) **Mutual Indemnification/Hold Harmless** The Municipality hereby agrees to indemnify and hold harmless the C.A. and its respective directors, officers, employees, volunteers and agents, from and against any and all liability, loss, costs, damages and expenses (including legal, expert and consultant fees), causes of action, actions, claims demands, lawsuits or other proceedings, (collectively “**Claims**”), by whomever made, sustained, incurred, brought or prosecutes, included for third party bodily injury (including death), personal injury and property damage, in any way based upon, occasioned by or attributable to anything done or omitted to be done by the Municipality, its directors, officers, agents, employees, partners, affiliates, volunteers, subcontractors or independent contractors in the course of performance in the Municipality’s obligations under, or otherwise in connection with, this Agreement. Likewise, the C.A. agrees to indemnify and hold harmless the Municipality and its respective directors, officers, employees, volunteers and agents, from and against liabilities and Claims for any encumbrance on or damage to the Premises, injury to property or injury to any person occurring in or about the Premises, occasioned by or arising from intentional or reckless act(s), default, or negligence of the C.A., its directors, officers, agents, employees, partners, affiliates, volunteers, subcontractors, independent contractors, licensees and invites. The Parties agree that neither shall be liable to the other for special or consequential damages of any kind.
- (a) the Municipality and the C.A. agree that the foregoing indemnity shall survive the termination of this Agreement notwithstanding any provisions of this Agreement to the contrary.

10. DEFAULT

- (1) An Act of Default has occurred when:
- (a) the Municipality has failed to pay any amount required to be paid by it under this Agreement, whether demand for payment has been made or not;
- (b) The Municipality has breached its covenants or failed to perform any of its obligations under this Agreement ; and
- (i) the C.A. has given notice specifying the nature of the default and the steps required to correct it; and
- (ii) the Municipality has failed to correct the default as required by the notice within a reasonable time;
- (c) any insurance policy is cancelled or not renewed by reason of the use or occupation of the Lands, or by reason of non-payment of insurance premiums;
- (d) the Lands are used by any other person or persons, or for any other purpose than as provided for in this Agreement without C.A.’s written consent.
- (2) When an Act of Default on the part of the Municipality has occurred and has not been remedied the C.A. shall have the right to terminate this Agreement and to re-enter the Premises and deal with them as it may choose.
- (3) If, because an Act of Default has occurred, the C.A. exercises its right to terminate this Agreement and re-enter the Premises prior to the end of the Term, the Municipality shall nevertheless be liable for payment of all amounts payable by the it in accordance with the provisions of this Agreement.

- (4) If, when an Act of Default has occurred, the C.A. chooses not to terminate the Lease and re-enter the Premises, the C.A. shall have the right to take any and all necessary steps to rectify any or all Acts of Default of the Municipality and to charge the costs of such rectification to the Municipality and to recover the costs.
- (5) If, when an Act of Default has occurred, the C.A. chooses to waive its right to exercise the remedies available to it under this Agreement or at law, the waiver shall not constitute condonation of the Act of Default, nor shall the waiver be pleaded as an estoppel against the C.A. to prevent it from exercising its remedies with respect to a subsequent Act of Default. No covenant, term, or condition of this Agreement shall be deemed to have been waived by the C.A. unless the waiver is in writing and signed by the C.A.

11. RULES AND REGULATIONS

The Municipality agrees on behalf of itself and all persons entering the Premises with the Municipality's authority or permission to abide by such reasonable rules and regulations as the C.A. may make or update from time to time.

12. NOTICE

Any notice or other communication required or permitted to be given to the Municipality or C.A. under this Agreement shall be in writing and, unless some other method of giving the same is accepted by the person to whom it is given, shall be given by courier or by email to the party to whom it is to be given at the respective addresses as follows:

St. Clair Region Conservation Authority,
205 Mill Pond Crescent,
Strathroy, Ontario
N7G 3P9

Attention: Greg Wilcox
Phone number:
Email: gwilcox@scrca.on.ca

Township of Dawn-Euphemia
4591 Lambton Line
Dresden, Ontario
N0P 1M0

Attention: Clerk
Phone number:
Email:

Notice by courier shall be deemed to be delivered on the date of delivery with proof of delivery from the courier. Notice by email shall be deemed to be delivered on the day the email is sent for emails sent before 12pm (noon), or the next business day after the email is sent for emails sent after 12pm (noon). Each party bears responsibility to provide the other party with any changes to the above-noted addresses or email addresses.

13. INTERPRETATION

- (1) The words importing the singular number only shall include the plural, and vice versa, and words importing the masculine gender shall include the feminine gender, and words importing persons shall include firms and corporations and vice versa.
- (2) Unless the context otherwise requires, the word "C.A." and the word "Municipality"

wherever used herein shall be construed to include their respective successors and assigns.

14. BINDING

This Agreement shall be binding on the parties, their successors, affiliates, purchasers, administrators, and assigns.

14. EXECUTION

In Witness of the foregoing covenants the C.A. and the Municipality have executed this Agreement.

**ST. CLAIR REGION
CONSERVATION AUTHORITY
("C.A.")**

Per: Joe Faas, Chair

Per: Brian McDougall, GM / Secretary Treasurer

**CORPORATION OF
THE TOWNSHIP OF DAWN-EUPHEMIA**

Per: Alan Broad, Mayor

Per: Donna Clermont, Administrator-Clerk

Staff will contact Brooke-Alvinston to discuss any available opportunities for building use prior to or during removal.

Removal Steps:

- Disconnect hydro and install a new outdoor panel to feed the Group C camping area which is currently powered by the panel in the Museum
- Remove historical items and store them in a rented storage container until determination is made on what to do with them
- Contact local museums to determine interest in donation of artifacts
- Sell or dispose of remaining items
- Building demolition and site rehabilitation

Financial Impact:

Electrical Work	\$7,500
Storage Container Rental	\$1,200
Demolition and Debris Removal	\$6,500
Site Rehabilitation	\$1,500
Total	\$16,700

Funds to cover costs associated with the removal of the Campbell House Museum will come from the Campground Capital reserve account.



Above: The existing Memorial Plaque

Motion from 1990 Executive Committee:

The Finance and Administration Advisory Board has recommended that Towns which have a Conservation Area within their municipality be charged 100% for the costs of maintenance commencing for the year 1990. This proposal is a direct result of a Review of Conservation Authorities program by the Province of Ontario, which treats these Conservation Areas as non-grantable by the Ministry of Natural Resources.

EC-90-035

MacIntyre – Wray

“That the Executive Committee approves the recommendation of the Finance and Administration Advisory Board that towns which have a conservation area within their municipality be charged 100% for the cost of maintenance commencing for the year 1990.”

Motion from 1990 General Meeting:

A resolution to revise the financing for the maintenance of local conservation areas was considered.

GM-90-28

Dedecker – Douglas

“That the Fall General Meeting approves the recommendation of the Executive Committee for a 50% cost sharing policy for the annual net maintenance costs for the local Conservation Areas of Shetland, Coldstream, Wawanosh Wetlands, Highland Glen, Charles J. McEwen, Clark Wright, and Melwood with the benefitting municipalities in which these areas are located and further that this policy be effective in 1991 and a financial analysis for each site be presented for consideration to each municipality affected by this policy.”

Starting in 1996, local/rural CA funding switched from the 50:50 cost share to a 90:10 cost share with the Municipality funding 90% of maintenance costs. The remaining 10% is funded through general levy. Also in 1996, the Highland Glen Conservation Area was re-designated as a regional conservation area.

Motion from 1996 Executive Committee:

A proposal to designate the Highland Glen Conservation Area as a regional Conservation Area was considered.

EC-96-150

Dedecker – Skinner

“That the Executive Committee recommend to the Board of Directors that Highland Glen be designated a regional conservation area and further that staff of the St. Clair Region Conservation Authority and the Township of Plympton endeavour to raise funds to offset the cost to general levy including establishing a user fee for launching boats.”

Motion from 1996 General Meeting:

The Executive Committee has recommended that the Highland Glen Conservation Area be designated as a regional conservation area for 1997 and beyond.

GM-96-157

Rankin – Webb

“That the Board of Directors approves the recommendation from the Executive Committee, that the Highland Glen Conservation Area be designated a regional conservation area in 1997 and beyond.”

Financial Impact:

Regional CAs (general levy)	Local/In Town (100% of costs to local municipality)	Local/Rural (90:10 cost share with local municipality)
A.W. Campbell L.C. Henderson Warwick Highland Glen	Strathroy Camden Tony Stranak Esli Dodge Bridgeview Crothers	Coldstream C.J. McEwen Wawanosh Wetlands Shetland Clark Wright Peers Wetland

Most Conservation lands located “in town” are leased to the local Municipality for management and maintenance.

Coldstream CA has been leased to Middlesex Centre (formerly Township of Lobo) since 1997. C.J. McEwen was leased to Plympton-Wyoming in 2020. Although designated as local/rural CAs, upon entering into the lease agreements the Municipalities have paid 100% of the costs of management and maintenance.

Regional Conservation Areas with campgrounds do not receive levy funding and operate on a self-sustaining basis including the accumulation of a capital reserve to assist in funding necessary upgrades and improvements.

1980

- Highland Glen Master Plan completed
- Acknowledged the shortage of boat launching facilities in the area
- Recommended acquiring the property to the North to create a boat launching facility (was never acquired)

1984

- April 2 – The Council of the Town of Forest passed a resolution requesting the Authority to consider the development of a public boat launch at Highland Glen CA
- May 10 - Conservation Areas Advisory Board recommends that a boat ramp not be installed at the Highland Glen Conservation Area

1985

- Request by Plympton Township, Bluewater Anglers, and public to provide fishing and recreational boat access point at Highland Glen Conservation Area
- May 30 - Conservation Areas Advisory Board recommends the construction of a boat ramp at Highland Glen Conservation Area

1986

- Access road and parking lot constructed at a cost of approx. \$50,000
- cost shared 50% Province, 50% Plympton Township

1987

- Boat ramp constructed at a cost of approx. \$60,000
- cost shared 50% Province, 50% Plympton Township

1988/89

- Boat ramp receives active use
- Several accidents and complaints as a result of lack of protection from unpredictable lake conditions
- Threat to property and life if protective measures not constructed

Late 1980's

- Gatehouse operated for a few years to collect boat ramp fees
- Discontinued as it was not financially feasible

1989

- Representatives from Provincial and Federal Members of Parliament, Plympton Township, Lambton County, Conservation Authority, and MNR meet to review project
- Funding commitment from Federal Small Craft & Harbours (\$60,000) and Plympton Township (\$25,000)
- \$10,000 MNR funding re-allocated from proposed development at Shetland and Esli Dodge CAs

- \$50,000 of additional funding required, requested from the Province through Conservation & Recreation Land Management Capital Development and Resident Sport Fishing License Program

1990

- Contract awarded for steel component of work
- \$50,000 shortfall to complete project remains, Plympton Township lends Authority \$50,000 interest free to complete armour stone component of project to be repaid by Dec. 31, 1990
- Project substantially complete and open to the public June 28

2016

- McKay Pay app payment system introduced to collect fees from boat ramp users

2019

- Damaged observed to a groyne and the boat ramp walkways making it unsafe for use, erosion damage also threatening the infrastructure

2020

- Boat ramp closed to the public due to safety concerns
- Data request submitted to MTO to determine the municipality of origin of boat ramp users based on licence plate numbers collected in 2017 – 2019

Municipality	Any Fee Paid	Single Use Fee	Season Fee
Adelaide-Metcalfe	22	22	0
Brooke-Alvinston	27	22	5
Chatham-Kent	6	6	0
Dawn-Euphemia	2	1	1
Enniskillen	61	52	9
Lambton Shores	188	138	49
Middlesex Centre	10	10	0
Plympton-Wyoming	125	98	27
Sarnia	140	127	13
St. Clair	16	16	0
Strathroy-Caradoc	32	31	1
Warwick	10	8	2
Out of Watershed	207	189	18
No Data	98	77	21

Fees paid by municipality. This does not capture any boat ramp use that was not paid for or where the licence plate was entered incorrectly. Some “out of watershed” users are likely to be cottage owners in the area, whose licence plates are registered at their home address. Others will be “out of watershed” residents who are renting/camping in the area or have travelled to use the facility.

2020

- AECOM contracted to complete a report on the Highland Glen Conservation Area and boat ramp

2021

- AECOM completed the study in July of 2021
- Boat ramp remains closed

In 2020, AECOM was contracted to investigate various issues at the site and develop rehabilitation concepts with preliminary designs. This report is now complete and can be reviewed as ite 8.6 (b), following this report.

AECOM Report:

The AECOM report identifies the infrastructure that is in need of repair, replacement, or upgrading and provides preliminary cost estimates. Recommended timing has been identified for each recommended improvement. Facility upgrades could be phased in over a 5-10 year period. A number of upgrades were identified as immediate with some being required in the first year to safely re-open the facility. Below are the site map and summary table from the report.



Site Map

Description of Work	Preliminary Cost Estimate	Proposed Timing
Immediate Recommendations		
Boat Launch		
Modular Floating Platform	\$10,000	< 1 year
Erosion Protection of Shore East of Ramp	\$15,000	< 1 year
Dredging Boat Launch Basin	\$60,000	< 1 year
Site Protection		
Groyne Wall - Floating Breakwater	\$50,000	< 1 year
Groyne Wall - Rock Fill Breakwater	\$450,000	3-5 years
West Breakwater Damage Repair	\$9,000	< 1 year
Northeast Breakwater Damage Repair	\$12,000	< 1 year
East Beach Protection		
Parking Lot Steel Sheet Pile Wall Protection	\$391,000	1-3 years
Beach Access		
Aluminum Stairway	\$10,000	< 1 year
South Retaining Wall		
Short-term Railing Safety Measure	\$500	< 1 year
Long-term Recommendations		
Boat Launch		
Boat Ramp Replacement	\$550,000	5-10 years
Retaining Wall for Protection of Shore East of Ramp	\$280,000	5 years
South Seawall		
Steel Sheet Pile Replacement	\$320,000	1-3 years
South Retaining Wall		
Concrete Splash Apron	\$20,000	1-3 years
Railing Replacement	\$22,000	1-3 years
Site Drainage		
Culvert Upgrades	\$150,000	1-3 years

Summary Table of Recommendations

It should be noted that both the West Breakwater and the Northeast Breakwater were only viewed above the waterline through photographs. Light surface corrosion and minor damages were observed above the water surface. AECOM has recommended a close-up investigation of the full length of both breakwaters to assess any other damage. The investigation should include both an above and underwater inspection to assess the existing condition of the breakwaters. The underwater inspection would be carried out by a commercially qualified dive team in accordance with the Ontario Regulations for Diving Work. A preliminary cost between \$15,000 and \$20,000 is estimated. This cost does not appear in the recommendations table.

Options for Consideration:

	Option for Discussion	Benefits/Concerns		Cost Estimates
1	Install aluminum stairway beach access and short-term railing safety solution	<ul style="list-style-type: none"> • Beach access is used by visitors of all ages and abilities • Reduce liability risk 	<ul style="list-style-type: none"> • Currently steep and can be slippery • Risk of visitor injury in current condition 	\$10,000 stairway \$500 railing
2	Complete minor repairs to West and Northeast breakwater to prevent further degradation	<ul style="list-style-type: none"> • Complete repairs before further degradation occurs 	<ul style="list-style-type: none"> • Delayed repair could shorten structure lifespan • If the facility is not restored this investment would be lost 	\$9,000 (West), \$12,000 (Northeast)
3	Short-term repairs to allow boat ramp to safely open while awaiting future work	<ul style="list-style-type: none"> • Would provide for public use more quickly • Would provide lake access for emergency services more quickly • Would allow revenue collection to resume • Provides time to source grant funding for larger repairs 	<ul style="list-style-type: none"> • Staff concerns regarding floating breakwater (cost of installing and removing annually, storage, sediment infilling) • \$50,000 breakwater structure is only temporary 	\$10,000 floating dock \$60,000 dredging \$50,000 floating breakwater \$10,000 erosion protection of shore east of ramp
4	Approve repairs listed as 5 year or earlier with current funding structure, conditional on a	<ul style="list-style-type: none"> • Start the process of facility rehabilitation • Provides staff direction to start 	<ul style="list-style-type: none"> • Costs not covered by grant would be the responsibility 	\$10,000 modular floating platform \$60,000 dredging \$450,000 rockfill breakwater

	minimum of 50% grant funding of any works	<p>applying for funding opportunities</p> <ul style="list-style-type: none"> • May require community partners for some grants • Would eliminate the need for the floating breakwater if funding can be secured to install new rockfill breakwater 	<p>of all Municipalities (general levy)</p> <ul style="list-style-type: none"> • May need to allow levy to be phased over a number of years providing municipalities more time to budget for costs • Timeline dictated by funding availability 	<p>\$391,000 parking lot protection \$280,000 retaining wall east of ramp \$320,000 south seawall steel sheetpile replacement \$20,000 concrete splash apron \$22,000 railings \$150,000 culvert upgrades \$20,000 underwater investigation of west and northeast breakwater</p> <p>Total \$1,721,000 pre tax (minimum \$860,500 pre tax sourced through grant)</p>
5	Underwater investigation of West and Northeast breakwater structures	<ul style="list-style-type: none"> • Eliminates concerns over unknown condition of these structures • Report only includes \$21,000 in minor repairs for these structures • Conditions above the waterline only show minor corrosion • Could be done ahead of any other repairs to confirm breakwaters are 	<ul style="list-style-type: none"> • Additional cost • Unknown timeline for completion 	<p>\$15,000 - \$20,000</p>

		in reasonable condition		
6	Form a Highland Glen Boat Ramp Committee	<ul style="list-style-type: none"> • A smaller group of board members can meet with staff to develop recommendations • Recommend future direction for Highland Glen CA • Recommend how repairs should be funded • Whether or not repairs should be completed 	<ul style="list-style-type: none"> • Potential delays in decision (may also accelerate decision making?) 	To be determined based on recommendations
7	Complete only immediate repairs to keep the facility operational	<ul style="list-style-type: none"> • Levy funding to complete only necessary repairs to safely re-open • Would allow public use for an unknown period of time • Use boat ramp revenues to fund minor repairs and annual costs associated with installation of floating breakwater 	<ul style="list-style-type: none"> • Would not protect the long-term operation of the facility • Would require temporary floating breakwater 	\$10,000 floating dock \$60,000 dredging \$50,000 floating breakwater
8	Decommission boat ramp and operate Highland Glen CA as a day use property with beach access and picnic facilities	<ul style="list-style-type: none"> • Reduces the parking congestion on busy days • Reduces future maintenance expenses • Decommissioning costs expected to be much lower than repairs and upgrades 	<ul style="list-style-type: none"> • Loss of boat access to Lake Huron for the public • Loss of emergency access to the lake (search and rescue) • Loss of harbour which could be used 	Unknown at this time

			by boaters during storm/rough water	
--	--	--	-------------------------------------	--

Staff Recommendations:

1. Install aluminum beach access stairway and short-term railing safety solution in 2022.
2. Complete minor repairs to West and Northeast breakwater structures in 2022 to prevent further degradation.
3. That the short-term floating breakwater solution is not implemented due to concerns regarding annual installation and removal, storage, sedimentation inside the boat ramp protection area, and cost.
4. A. That the Board of Directors approve the repairs listed in option 4 to be completed when a minimum of 50% grant funding can be obtained for any listed works. Staff will try to minimize the costs levied to member Municipalities through grant acquisition. Municipalities will have the option to split the Highland Glen levy over 2 years.

Alternate recommendation #4

4. B. That the Board of Directors form a Highland Glen Boat Ramp Committee, working with staff to evaluate options, evaluate the funding model, and develop recommendations for the full Board's review.

St. Clair Region Conservation Authority
**Highland Glen Conservation Area
and Boat Launch**

Preliminary Design Report

Prepared by:

AECOM

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London, ON, Canada N6A 6k2

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Distribution List

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	1	St. Clair Region Conservation Authority
	1	AECOM File

Revision History

Revision #	Date	Revised By:	Revision Description
0	03/31/2021	BT	Pre-Draft – Report
1	06/10/2021	KC	Draft - Report
2	07/19/2021	KC	Final - Report

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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Executive Summary

Highland Glen Conservation Area is located on the south shore of Lake Huron in the Township of Plympton-Wyoming, in Lambton County. Highland Glen Conservation Area consists of 11 hectares of forested ravine land, a 600m long beach and a boat launch providing small craft access to Lake Huron. Highland Glen Conservation Area is owned and maintained by the St. Clair Region Conservation Authority (SCRCA).

In late 2019, the original groyne on the west side of the boat launch ramp was damaged due to wave action and is now missing. In addition to the damage to the groyne wall, water levels on Lake Huron have been high, leading to unsafe conditions surrounding the use of the boat launch, and erosion on both the east and west sides of the ramp protection structure has been observed. On the east side of the boat ramp, the erosion has exposed the east side of the steel sheet pile wall of the boat ramp and has eroded the banks further along the beach. The banks have continued to erode, putting the adjacent parking lot at risk and making beach access difficult as paths have been eroded, resulting in large drop offs.

The recent damage that has occurred at this site means that recreational opportunities – including the use of the boat launch and beach access – are no longer possible. In order to restore the safe usage of the boat ramp and provide access to the beach for the public, a number of short and long-term repair solutions are required and are the subject of this report. A summary of recommendations is provided in the Table below.

Description of Work	Preliminary Cost Estimate	Proposed Timing
Immediate Recommendations		
Boat Launch		
Modular Floating Platform	\$10,000	< 1 year
Erosion Protection of Shore East of Ramp	\$15,000	< 1 year
Dredging Boat Launch Basin	\$60,000	< 1 year
Site Protection		
Groyne Wall - Floating Breakwater	\$50,000	< 1 year
Groyne Wall - Rock Fill Breakwater	\$450,000	3-5 years
West Breakwater Damage Repair	\$9,000	< 1 year
Northeast Breakwater Damage Repair	\$12,000	< 1 year
East Beach Protection		
Parking Lot Steel Sheet Pile Wall Protection	\$391,000	1-3 years
Beach Access		
Aluminum Stairway	\$10,000	< 1 year
South Retaining Wall		
Short-term Railing Safety Measure	\$500	< 1 year
Long-term Recommendations		
Boat Launch		
Boat Ramp Replacement	\$550,000	5-10 years
Retaining Wall for Protection of Shore East of Ramp	\$280,000	5 years
South Seawall		
Steel Sheet Pile Replacement	\$320,000	1-3 years
South Retaining Wall		
Concrete Splash Apron	\$20,000	1-3 years
Railing Replacement	\$22,000	1-3 years
Site Drainage		
Culvert Upgrades	\$150,000	1-3 years

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1. Introduction

Highland Glen Conservation Area is located on the south shore of Lake Huron in the Township of Plympton-Wyoming, in Lambton County. It is located approximately 35 km northeast of Sarnia, Ontario and is accessible via County Road 7 (Lakeshore Road). The Conservation Area is located at 5046 Lakeshore Road, on the north side of the road, 50 m east of County Road 30 (Oil Heritage Road).

Highland Glen Conservation Area consists of 11 hectares of forested ravine land, a 600m long beach complete with a boat launch which provides small craft access to Lake Huron. Highland Glen Conservation Area is owned and maintained by the St. Clair Region Conservation Authority (SCRCA).

Groyne Wall, South Seawall, South Seawall Extension, South Retaining Wall, Boat Ramp, West Breakwater, and Northeast Breakwater were investigated as part of this assignment. This report provides a description of each structure, summarizes observations from the site investigation, provides general condition assessments, and reviews alternative rehabilitation options.

The location of Highland Glen Conservation Area Boat Launch is shown in **Figure 1**.



Figure 1. Key Map

2. Summary of Existing Conditions

2.1 General

A general aerial view of the Highland Glen Conservation Area Boat Launch identifying various facility components is shown in **Figure 2**, a Site Plan is provided in **Appendix A**, and photographs of the site are provided in **Appendix B**.



Figure 2. Aerial View

Table 1 summarizes the structure types, construction dates and length of each structure investigated within the scope of work of this assignment.

Table 1. Summary of Structures

Structure No	Structure Description and Type	Date of Construction	Approximate Length (m)
#1	Groyne Wall (steel sheet pile wall)	Approx. 1975	15
#2	South Seawall (steel sheet pile wall)	Approx. 1975	11
#3	South Seawall Extension (steel sheet pile wall)	1987	12
#4	South Retaining Wall (steel sheet pile wall)	Approx. 1975	28
#5	Boat Ramp (concrete deck between steel sheet piles)	1986/87	32
#6	West Breakwater (steel sheet pile wall with armour stone)	1990	17.5
#7	Northeast Breakwater (steel sheet pile wall with armour stone)	1990	60

The Highland Glen Conservation Area was purchased by SCRCA in 1976 and 1977, and several cottages that were on the property were torn down. The groyne on the west side of the boat ramp was constructed by the landowner prior to acquisition by the SCRCA. The access road, parking lot and boat launch were constructed from 1986 to 1987. Due to scour that occurred during a storm in February 1987, an extension to the south end of the South Seawall was required. Due to safety concerns with unsuitable boating conditions in and around the launch area during high wind events, in 1990 a steel sheet pile wall with an armour stone breakwater was installed on the northeast side of the ramp and a steel sheet pile breakwater was connected to the existing groyne on the southwest side.

In late 2019, the original Groyne Wall on the west side of the boat launch ramp was damaged due to wave action and is now missing. Further, water levels on Lake Huron have been high, contributing to erosion on both the east and west sides of the ramp protection structure. On the east side of the boat ramp, the erosion has exposed the steel sheet pile wall of the boat ramp and has eroded the banks further along the beach. The banks have continued to erode, putting the adjacent parking lot (situated at a higher elevation) at risk and making beach access difficult as pathways have eroded, resulting in large drop offs.

The main objectives of this property include environmental protection through good forest management and recreational activity opportunities through the day-use area, which includes the boat launch and beach access. The damage which has occurred in late 2019 has made it difficult for the SCRCA to meet their objectives for this property. As such, the SCRCA have requested that the various issues at this site be investigated and alternative rehabilitation concepts be considered, including the completion of preliminary design.

2.2 Background Information

2.2.1 Existing Documents

The following documents were reviewed as part of this project:

- Report on Highland Glen Erosion Control, MacLaren Engineers Planners and Scientists, 1980.
- Boat Launching Ramp, Parking Lot, Access Road for Highland Glen C.A. (Drawings 1 to 2), Letham Jarvela Ltd Consulting Engineers, 1986.
- Letter - Highland Glen-Boat Launching Ramp, Letham Jarvela Ltd. Consulting Engineers, 1987.

- Report on Highland Glen Conservation Area Launching Ramp Protection, Public Works Canada, 1990.
- Report - Effect of Launching Ramp on Littoral Transportation, James D. Nisbet Consulting Engineer, 1990.
- Highland Glen Conservation Area Management Plan, unknown author, unknown year (post 2007).
- Shoreline Erosion Comparison Mapping, St. Clair Region Conservation Authority, 2020.

2.2.2 Water Levels

International Great Lakes Datum 1985 (IGLD) for Lake Huron is Elevation 176.00 m. Historic high and low monthly water levels were measured as El. 177.50 m and El. 175.70 m, respectively. The mean for the month of October 2020 was El. 177.25 m.

Trueline Services Inc. were retained to provide topographic and bathymetric surveys of the area. A topographic survey was carried out in the Fall of 2020, and a bathymetric survey was carried out in May of 2021. The survey data was processed, and elevations plotted as contours on the survey plan as shown on **Figure A2** of **Appendix A**.

2.3 Structure Description and Condition

2.3.1 Groyne Wall (#1)

The Groyne Wall on the west side of the boat launch was a steel sheet pile wall connected to the South Retaining Wall at the south end, extending into the lake and connected to the West Breakwater at the north end, with an estimated length of 15 m.

The Groyne Wall was built prior to land acquisition by the SCRCA in 1976/77, with one report suggesting a construction date around 1975. There are no records available for this groyne wall and the exact age or depth of the wall is not known at this time, however, it appears that the sheet pile wall was supported by steel pipe piles, spaced along the length of the wall.

This wall was damaged in late 2019 and is now missing. The location of the Groyne Wall, with pipe pile supports still in place is shown in **Figure 3**.

2.3.2 South Seawall (#2)

The South Seawall extends from the west end of the South Retaining Wall to the south. Segment A of the South Seawall is approximately 7.5 m in length and ends at the “kink” in the sheet pile, identified as the leading edge of Segment B. Segment A consists of sheet piles that are 450 mm wide and 75 mm deep, and an angle pile cap with a top leg that is 120 mm wide with an inside leg of 75 mm. An exposed pipe pile tie-back was observed within the eroded embankment behind the sheet pile wall. Access was not possible to perform measurements, but it is assumed to be similar in size to the pipe piles that were measured at the south seawall extension.

The second segment (Segment B) started at the south end of Segment A and extended at an angle in a southwesterly direction, with an estimated length of 3.5 m. This section of the sheet pile wall was damaged in late 2019 and is also missing. The South Seawall is also depicted in **Figure 3**.

The South Seawall was built prior to land acquisition by the SCRCA in 1976/77. There are no records available for this wall and the age or depth of the wall is not known at this time.

Minor erosion was observed at the intersection of Segment A with the South Retaining Wall, and severe erosion was observed at the south end of Segment A, where Segment B is missing. The steel sheet pile in Segment A was generally in fair condition with staining along the waterline and no visible section loss. Some distortion was observed in the sheet pile adjacent to the missing piles in Segment B.



Figure 3. Groyne Wall (#1) and South Seawall (#2)

2.3.3 South Seawall Extension (#3)

The South Seawall Extension is a steel sheet pile wall that consists of three segments with a total estimated length of 12.4 m. The three segments are depicted in **Figure 4**. The steel sheet piles of the South Seawall Extension are 500 mm wide and 127 mm deep. The sheet pile wall is capped with a bent plate with a width of 127 mm, an inside leg with a length of 76 mm and outside leg with a length of 114 mm. A channel waler was installed on the inside of the sheet pile.



Figure 4. South Seawall Extension (#2) – Segments C, D and E

The first segment (Segment C) extends from Segment B of the South Seawall (#2) and is estimated to be approximately 2.0 m in length. An exposed pipe pile tie-back was observed within the eroded fill behind the sheet pile wall.

The second segment (Segment D) extends from the first segment and runs parallel with the shoreline for a length of approximately 5.4 m. Two pipe pile tiebacks with a diameter of 280 mm were observed connected to the sheet pile wall with 19 mm diameter tie rods. There is a 1.2 m diameter corrugated steel pipe (CSP) culvert protruding through the Segment D steel sheet pile wall.

The third segment (Segment E) extends from the end of the second segment at a 90-degree angle towards land, for an approximate length of 5 m. This segment is connected to one of the pipe pile tie-backs observed in Segment D.

Available records indicate that the extension of the South Seawall was required in 1987 after significant scour to the beach resulted following a storm. A letter from the consulting engineer responsible for the design of the access road, boat launch and parking lot recommended a 12 m long sheet pile wall extension with a 5 m depth, including waler and tie backs and extension of the existing 1.2 m diameter CSP. The designed arrangement of the proposed extension appears to be different from what is currently observed on site, suggesting that changes were made during construction, however, no other records are available. An illustration of the proposed South Seawall Extension is provided in **Figure 5**.

Very severe erosion was observed at the south end of the sheet pile and behind the sheet pile for all segments of the South Seawall Extension, exposing the CSP culvert, tie rods and pipe pile tiebacks. The steel sheet pile of the South Seawall Extension was generally in fair condition with light corrosion and a hole in the sheet noted above the waler of Segment C. Some distortion was also observed in the sheet pile adjacent to the missing piles in Segment B of the South Seawall.

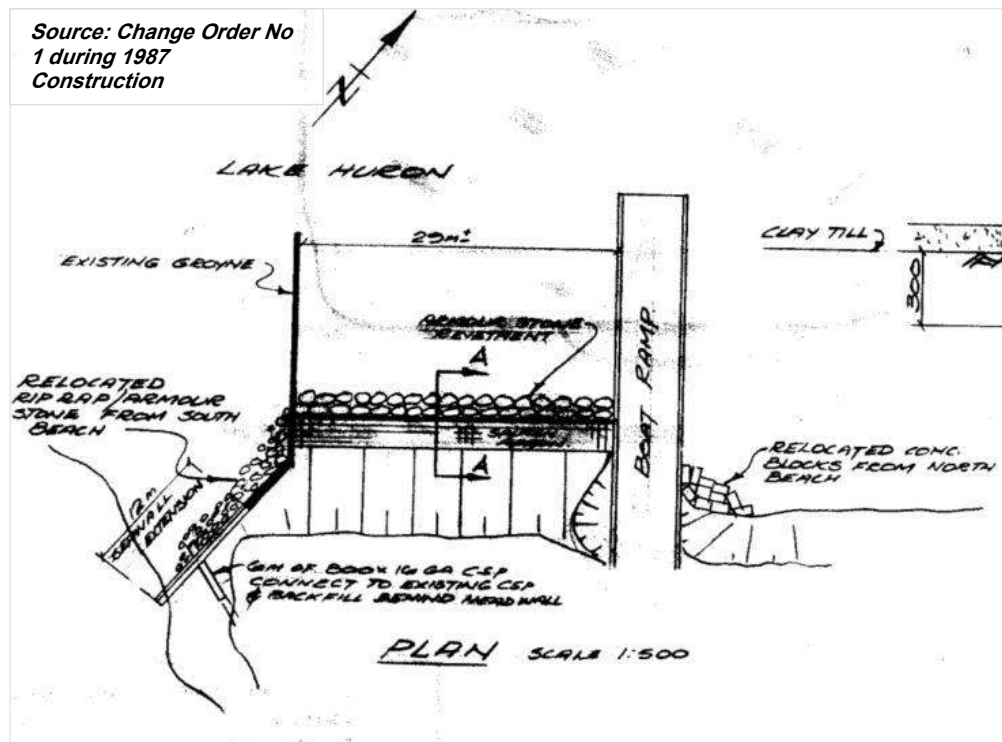


Figure 5. Original Proposed Plan of South Seawall Extension (#3)

2.3.4 South Retaining Wall (#4)

The South Retaining Wall is a 29 m long steel sheet pile wall. The sheet pile sections are approximately 500 mm wide and 127 mm deep. The sheet pile wall is capped with a bent plate with a width of 127 mm, an inside leg with a length of 76 mm and outside leg with a length of 114 mm. There is a painted steel handrail welded to the top of the pile cap that extends along the length of the retaining wall.

This retaining wall was built prior to land acquisition by the SCRCA in 1976/77. There are no records available for this retaining wall and the age / details of the wall are not known at this time. From record drawings that are available through the period of 1986 to 1990, it appears that the retaining wall may have been extended between two separate contracts, possibly during the construction of the Boat Ramp. However, no evidence is available to substantiate this. In 2017, the fill behind the South Retaining Wall was excavated to repair the tie back system.

The South Retaining Wall was observed to be bowed outwards with minor to medium erosion occurring in the fill area behind the retaining wall, particularly towards each end of the retaining wall. An old section of sheet pile was observed at the east end of the retaining wall at the interface with the boat ramp. The steel sheet pile generally appeared to be in fair condition with staining along the waterline and no visible section loss. It is unclear whether there is significant public use of the grassed area in front of this wall. Given the drop along this section of wall and public accessibility, a picketed railing system would be a more appropriate application for improved safety over the current open two rail system. A photo of the South Retaining Wall looking West from the Boat Launch is provided in **Figure 6**.



Figure 6. South Retaining Wall, Looking West

2.3.5 Boat Ramp (#5)

The Boat Ramp structure is 32.0 m long and is comprised of a concrete ramp with steel sheet pile on both sides. The steel sheet piles were designed with a section modulus of $33.7 \times 10^3 \text{ mm}^3$, a thickness of 3.4 mm and are 4.0 m in length, with a top elevation that varies with the slope of the ramp. The two sheet pile walls on either side of the ramp are spaced approximately 6.0 m apart and are connected (below the slab) with 19 mm diameter tie rods at a typical spacing of 920 mm. Original drawings do not indicate the use of walers; however, channel sections were observed to be bolted on the outside faces of the steel sheet pile. The sheet pile wall is capped with a bent plate with a width of 127 mm, an inside leg with a length of 76 mm and outside leg with a length of 114 mm. Pipe piles with a diameter of 150 mm and a length of 8 m are positioned at the lake side end of the steel sheet pile wall, and are both welded and bolted to the sheet pile wall. The concrete ramp is 152 mm thick and reinforced with a 152 mm x 152 mm wire mesh. It was placed on top of a range of well graded stone and rip rap. The steel sheet pile extends higher than the concrete deck by a minimum of 300mm.

Illustrations of the Boat Ramp (#5) section and plan are provided in **Figure 7** and **Figure 8**. The section in **Figure 7** shows a pile cap detail with walkway that is different than that observed on site. It is unknown if this was a change during construction or a modification that occurred at a later date.

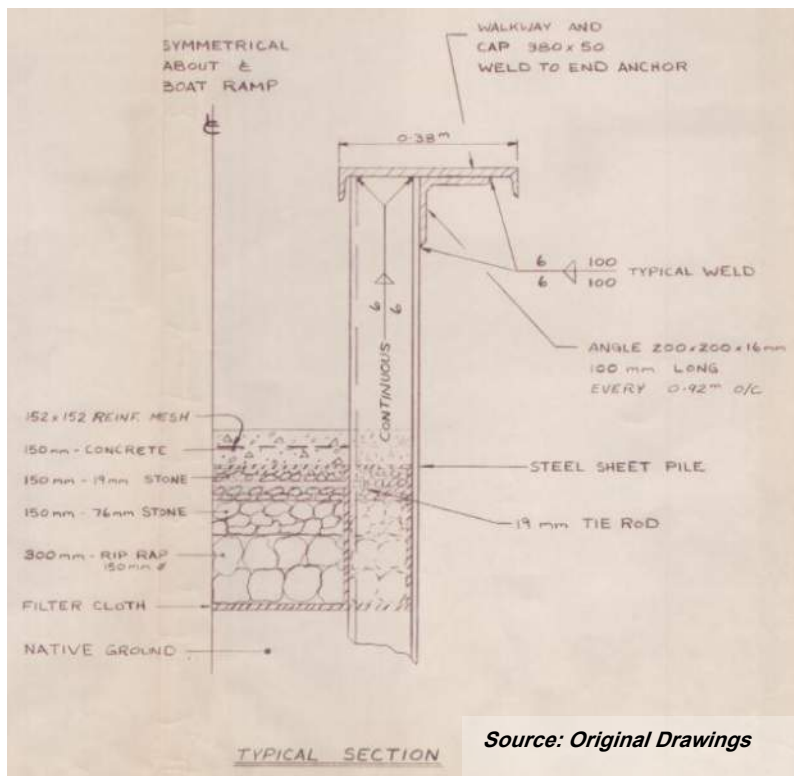


Figure 7. Typical Section of Boat Ramp (#5)

Severe corrosion with section loss and large perforations were observed in the steel sheet pile above the concrete ramp. We note that the original sheet pile thickness is considered low when considered in the context of long-term durability for a Great Lakes application. The concrete ramp was generally in fair to good condition with localized spalling and cracking. Severe erosion of the embankment was observed on the east side of the boat ramp, exposing steel sheet pile on the outside of the structure.

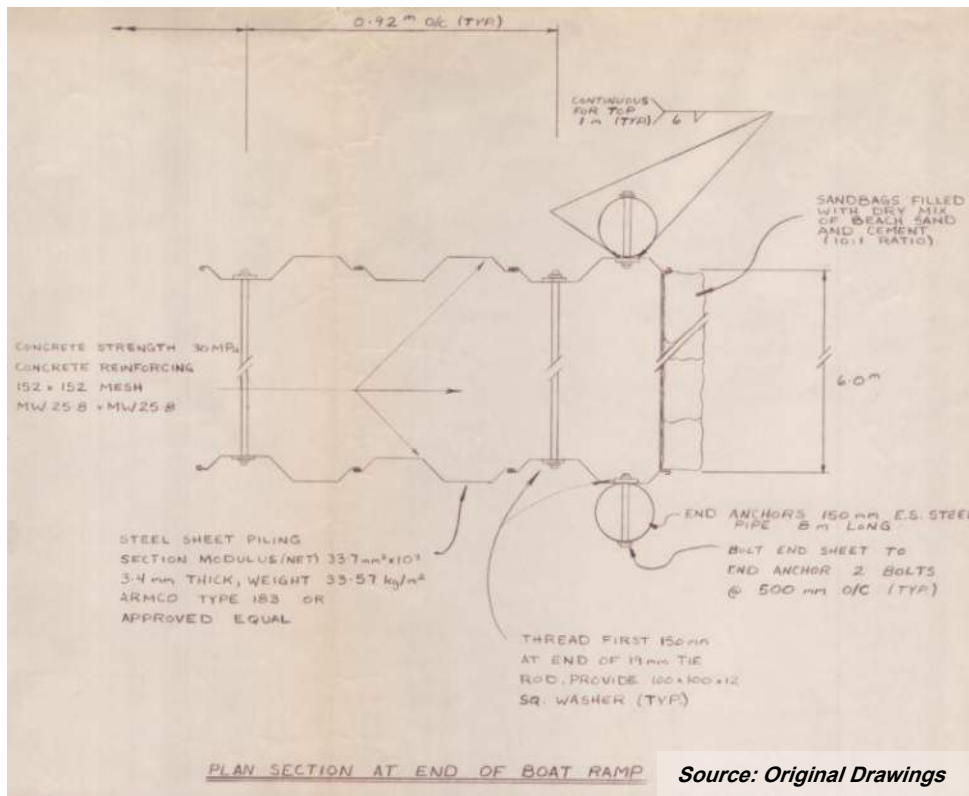


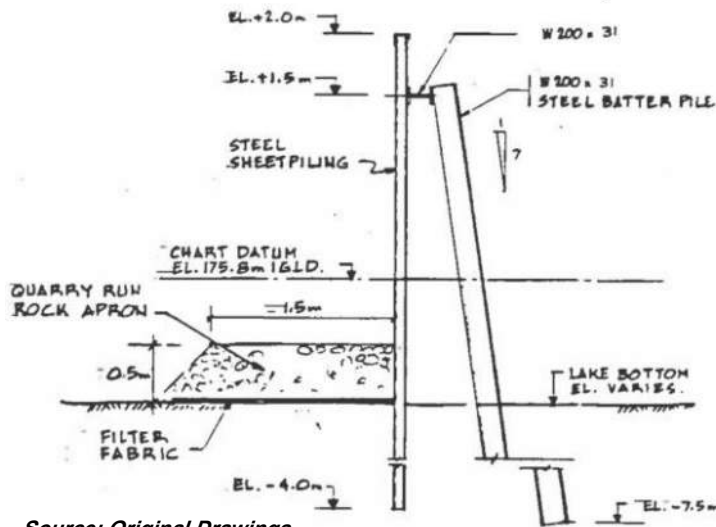
Figure 8. Plan of Boat Ramp (#5)

2.3.6 West Breakwater (#6)

The West Breakwater structure is a 17.5 m long steel sheet pile wall with steel battered piles on the land side and a quarry run rock apron on the lake side. The steel sheet piles are approximately 6.0 m in length, with a top elevation of +2.0 m, extending to a bottom elevation of -4.0 m from datum. A W200x31 waler is provided between the sheet pile and battered pile at 0.5 m from the top of the sheet pile wall. The battered pile extends to approximately 7.5 m below datum. The sheet pile wall is positioned at the north end of the Groyne Wall at an angle of approximately 60 degrees.

An illustration of the typical West Breakwater (#6) section is provided in **Figure 9**.

Limited observations were possible from shore during the site investigation due to rough waters, and it was not possible to confirm the arrangement or existing conditions. However, photos were taken during the bathymetric survey completed in May 2021 and observations were made from the available photos. The steel sheet pile wall has areas of light surface corrosion at and above the waterline, however, section loss of the steel sheet pile could not be determined. The wall generally appears to be straight and plumb. The pile cap has been pulled up from the top of the sheet pile for an estimated length of 5 m in the middle portion of the wall.

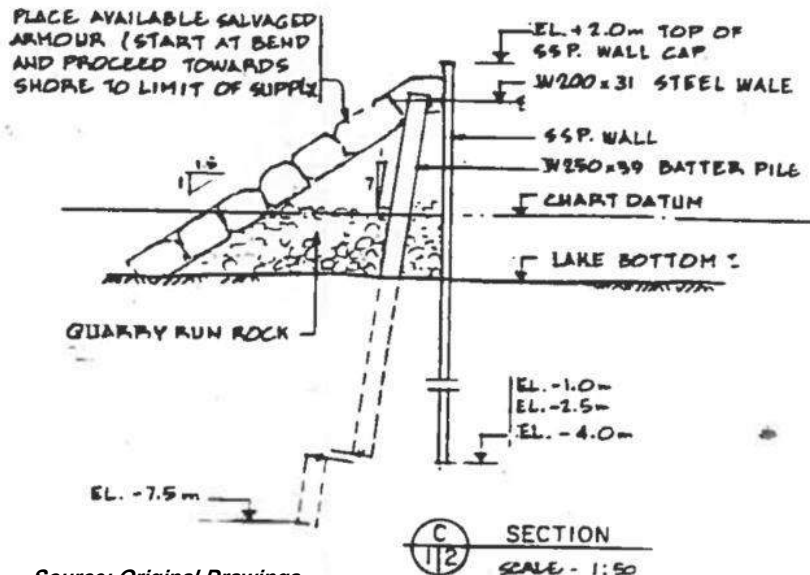


Source: Original Drawings

Figure 9. Typical Section of West Breakwater #6

2.3.7 Northeast Breakwater (#7)

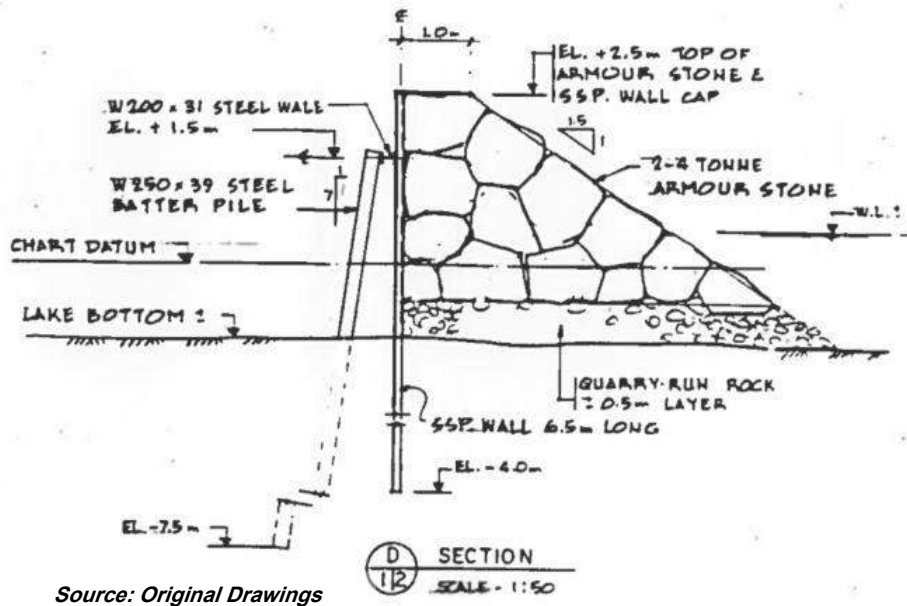
The Northeast Breakwater structure consists of two segments which have a total length of 60 m. The first segment extends from land out into the lake an angle of approximately 75 degrees from the shore. This segment is a 30 m long steel sheet pile wall with steel battered piles and quarry run rock, capped with armour stone on the harbour side. The steel sheet pile section was not noted on the design drawings, and it was not possible to obtain measurements during the site investigation. The steel sheet piles vary from 3.0 m to 6.0 m in length, with a top elevation of +2.0 m, extending to a bottom elevation of between -1.0m and -4.0 m from datum, with the length increasing further out into the lake. A W200x31 waler is provided between the sheet pile and battered pile at 1.5 m above datum. The battered pile extends to approximately 7.5 m below datum. A cross section of the first segment of the Northeast Breakwater is provided in **Figure 10**.



Source: Original Drawings

Figure 10. Northeast Breakwater #7 - Segment 1

The second segment is positioned at the end of the first segment at an angle of approximately 135 degrees from the first segment. The second segment is a 30 m long steel sheet pile wall with steel battered piles on the harbour side and armour stone breakwater on a 0.5 m layer of quarry run rock on the lake side. The steel sheet pile section was not noted on the design drawings and it was not possible to obtain measurements during the site investigation. The steel sheet piles are approximately 6.5 m in length and extend to a bottom elevation of -4.0 m from datum. A W200x31 waler is provided between the sheet pile and battered pile at 1.0 m from the top of the sheet pile wall. The battered pile extends to approximately 7.5 m below datum. The last 6 m of this segment do not have battered piles, and the design includes armour stone on quarry run rock on both sides of the steel sheet pile wall. A cross section of the second segment of the Northeast Breakwater is provided in **Figure 11**.



Source: Original Drawings

Figure 11. Northeast Breakwater #7 - Segment 2

In 2017, the armour stone along the outside of the Northeast Breakwater was repositioned to provide better protection of the sheet pile wall.

Limited observations were possible from shore during the site investigation due to rough waters, and it was not possible to confirm the arrangement or existing conditions. However, photos were taken during the bathymetric survey in May 2021 and observations were made from the available photos. The steel sheet pile wall has areas of light surface corrosion at and above the waterline, however, section loss of the steel sheet pile could not be determined. A portion of the waler on the inside of Segment 2 was observed to have dropped and it is assumed that the connection of the waler to the steel sheet pile has failed. The steel sheet pile wall appears to be leaning at approximately the same location as the failed waler, it is likely that the two issues are related. It is noted that in the original design drawings, the connection detail shows the waler being welded to the sheet pile.

2.4 Discussion of Issues

The recent damage that has occurred at this site is significant and has reduced opportunities for recreational use activities with respect to the boat launch and beach access. The following sections identify the issues observed at this site.

2.4.1 Boat Ramp Safety

The boat ramp has been deemed unsafe for operation and was closed in 2020 due to high water levels and wave action from the lake. The loss of a section of the Groyne Wall to the west of the boat ramp has left the boat launch exposed to significant wave action caused by westerly winds. In addition, the arrangement of the breakwaters allow for westerly waves to advance into the opening and cause erosion of the shoreline immediately to the east of the boat ramp. This erosion of the banks to the east of the boat ramp has exposed the sheet pile on the outside of the ramp. Another issue at the boat ramp pertains to the damage that occurred to the boat launch walkways due to a combination of the high lake levels and wave action. The walkways are typically bolted to supports on the sheet pile wall on the side of the boat ramp and are installed in the spring and removed each fall.

To afford long-term safe use of the boat launch, restored and/or increased wave protection should be implemented. The ramp walkways should also be restored.

2.4.2 Shoreline Erosion and Sand Deposition

The high-water levels on Lake Huron have accelerated erosion of the shoreline on either side of the boat launch, leading to a loss of the banks.

To the east of the Northeast Breakwater, along the East Beach, the continued erosion has encroached to the parking lot area and continues to progress. The loss of the parking lot area is not desirable, and mitigation measures are required to protect the shoreline from further erosion.

To the west of the boat launch, the erosion of the shoreline has resulted in the loss of fill behind the sheet pile structure of the South Seawall and South Seawall Extension, exposing tie backs in the embankment and placing the structural integrity of the walls at risk.

Within the Boat Launch Basin, sand deposition has elevated the lakebed and reduced the water depth. This reduced water depth results in less draft for vessels operating out of the boat launch.

2.4.3 Damage to Breakwaters

Although observations of the West Breakwater and Northeast Breakwater were limited due to accessibility issues during the site investigation, photos were taken during the bathymetric survey that provide additional information on the condition of the breakwaters. Along the West Breakwater it was noted that the pile cap has been pulled up from the top of the sheet pile for an estimated length of 5 m in the middle portion of the wall. The pile cap appears to have been welded to the sheet pile with connection plates and these welds have failed over the past winter, likely due to ice buildup pushing up on the pile cap. Along the Northeast Breakwater it was noted that a portion of the waler on the inside of Segment 2 was observed to have dropped

and it is assumed that the connection of the waler to the steel sheet pile has failed. The steel sheet pile wall appears to be leaning at approximately the same location as the failed waler, and it is likely that the two issues are related. The failure of the waler could be a result of ice buildup from below, pushing up on the waler causing the welds to fail, or a result of ice/wave energy from the outside of the wall that deformed the wall. With the information available it is difficult to determine if the failure of the waler has allowed the top of the wall to be deformed, or if the deformation of the wall has failed the waler. It is noted that this damage was not observed during the site investigation carried out in the Fall of 2020 and has occurred over the winter.

2.4.4 Beach Access

The erosion of the shoreline has created a safety issue surrounding access to the beach for the public. Previously, a pathway with a gradual slope was used to gain access to the beach. Due to the significant erosion, the pathway has been washed out leaving a large and unsafe near-vertical drop of approximately 2.5 m from the top of bank to the existing beach.

2.4.5 Site Drainage

Three outlets to Lake Huron have been identified within the site. One 900 mm CSP culvert (Culvert 1) and one 1200 mm CSP culvert (Culvert 2) are situated in series. These culverts convey runoff from the catchment area west of the access road and parking lot. One overland flow route collects runoff from the park area east of the access road and parking lot, and another overland flow route collects runoff from the access road leading into the site. **Figure 12** shows the catchment areas, the culverts and outfalls located on the site.

A desktop review of available catchment information was completed to identify existing catchment conditions. The review included the assessment of land cover, soils and topography. Data used in this analysis was obtained through Ontario Geohub, the Ontario Ministry of Natural Resources and Forestry (OMNRF), and the Canadian Soil Information Service (CanSIS).

The Project limits fall within the Township of Plympton Wyoming, Highland Glen settlement area. The study area is comprised largely of forested land and areas of local disturbance (i.e. forest depletion, crops).

Soil information was obtained from the CanSIS Soil Survey of Lambton County. This soil database provides detailed information on soil type, average slope and drainage. The most common soil type in this area is poorly-drained clay loam.

The best available topographic data for the project area includes the Ontario Geohub's LIDAR data mapping. The topography of the study area varies from gently sloping to steep slopes. Catchment slopes assessed in this report range from 0.3 % to 29.5% with an average slope of 4.0%. Contours are shown in **Figure 12**, grading from red (high elevations, approximately 196 masl) to green (low elevations, approximately 178 masl).



Figure 12. Catchment Areas and Outfalls

3. Discussion and Recommendations

Alternatives for the various facility components were reviewed and preliminary cost estimates were developed for the recommended repairs and rehabilitation measures. Assumptions regarding site conditions were made, given that geotechnical survey data were not available at the time of writing this report. Preliminary cost estimates can be further refined once additional data is available.

The following components were included in the preliminary cost estimates, based on a percentage of the capital cost subtotal:

- Preliminary estimating contingency – 20%
- Contractor overhead, profit, bonds and insurance – 15%
- Allowance for engineering – 15%

Detailed costing of individual work items is included in **Appendix C**. Costs for individually procured work items may vary from the quoted estimates according to various factors, such as local market conditions, economy of scale, season of work and requirements for engineering and other miscellaneous factors.

Site plans with immediate and long-term recommendations including some cross-section details are included in Figures A3 and A4 in **Appendix A**.

3.1 Boat Ramp

The boat ramp has been deemed unsafe for operation and was closed in 2020 due to high water levels and damage caused by wave action from the lake, in addition to safety issues arising from damage to the walkway. In order to restore the safe use of the boat ramp, short-term and long-term repairs to the boat ramp are required.

3.1.1 Boat Ramp Walkway

In order to restore the boat ramp for safe operation in the short term, restoration of a walkway along the side of the boat ramp is required. The installation of a modular floating platform is recommended. Modular floating platforms are assembled using cubes suitable to the size required for the site. Modular cubes are available with a typical width of 0.5 m, and a minimum width of 3 cubes is recommended to provide adequate stability. Modular floating platforms can be tied off to the existing or new steel guide brackets, and the buoyancy of the cubes allows for the walkway to remain above the water level at all times. Such a system would be less laborious to remove and reinstall each year compared to current system. An example of a modular floating platform used at a boat ramp is shown in **Figure 13**. Preliminary costing figures for a 1.5 m wide by 12 m long modular floating platform are approximately \$10,000. This solution can be implemented in the immediate future to allow for use in the 2021 season.



Figure 13. Modular Floating Platform

3.1.2 Erosion Control of Bank East of Boat Ramp

The bank directly to the east of the boat ramp has seen continued erosion, exposing the outside of the east sheet pile wall of the boat ramp. To reduce further erosion of the bank, it is recommended to install riprap along the bank in this area. A bank lined with riprap is more resistant to erosion compared to the sandy material of the bank, however, this is a short-term solution and will not completely eliminate erosion. The cost of this solution will vary depending on the amount of riprap to be installed, which could be adjusted based on the expected duration of interim repairs until a more long-term solution can be implemented. An area of riprap overlaying geotextile with a length of 20 m, a width of 3.5 m and a thickness of 0.5 m would have a preliminary cost of approximately \$15,000, however, maintenance of this protection with additional riprap will likely be required in the future if a long-term repair solution is not implemented. This solution can be implemented in the immediate future to allow for use in the 2021 season.

3.1.3 Dredging Boat Launch Basin

Sand deposition within the Boat Launch Basin has been observed and can be attributed to the loss of the Groyne Wall, which has allowed sand to drift into the basin. This sand deposition has elevated the local lakebed and reduced the water depth which results in less draft for vessels operating out of the boat launch. As part of re-opening the boat launch, it is recommended to dredge the basin to allow for adequate conditions for users to launch. Some of the dredging area could be reached with an excavator from land, however, areas further from shore will require dredging from a barge. The dredgeate material will require testing, but it is expected that it will consist mostly of sand and can likely be repurposed along the shoreline for beach restoration. For the purposes of cost estimating, a dredge depth to 176.0 m was assumed, with a resultant cost of approximately \$60,000. It is recommended to implement this solution in the immediate future to allow for use of the boat launch as part of any reopening approach.

3.1.4 Boat Ramp Replacement

The sheet pile walls of the boat ramp are in poor condition with severe corrosion and section loss along the concrete ramps. This may, in part, be attributed to the buildup of debris and moisture along the edges of the concrete ramps, as well as an unsuitable sheet pile thickness (required for long term durability). The concrete ramp was generally in fair to good condition at the time of inspection, with some narrow cracking and several localized light concrete spalls on the top surface. In its current condition, the boat ramp is operational but progressive deterioration will require rehabilitation in the future. As part of a long-term strategy, new steel sheet pile walls and ramp are recommended to replace the existing structure. The new sheet pile may be installed on the exterior side, with the existing steel sheet piles cut down to an elevation below the new concrete ramp. An increased width of the ramp will improve functional/service levels and new walkways can be incorporated in the design of a new boat ramp. Preliminary costing figures for a 32 m long boat ramp replacement structure is estimated at approximately \$550,000 and includes new steel sheet pile walls, pile caps, waler and tie rods, as well as a 7 m wide concrete ramp. Replacement of the boat ramp is recommended in the 5 to 10-year time frame.

3.1.5 Retaining Wall at Bank East of Boat Ramp

A long-term solution to protect the bank directly to the east of the boat ramp would include the installation of a new steel sheet pile wall installed parallel to the shoreline, similar to the South Retaining Wall. Driving of a new sheet pile wall and installation of deadman anchors behind the wall would protect against the erosion of the bank and fill on the outside of the east boat ramp wall. It is recommended to include the installation of a guard along the top of the sheet pile wall for the safety of the public. Preliminary costing figures for a 15 m long steel sheet pile retaining wall structure including walers, pile caps, guard, deadman anchors with tie rods and backfill are estimated at approximately \$280,000. Installation of a steel sheet pile wall to protect the bank east of the boat ramp is recommended within the 5-year time frame, provided short term measures described in Section 3.1.2 are carried out. There may be some cost efficiencies if this work was completed at the same time as a new boat ramp, given the need for sheet piling equipment.

3.1.6 Summary

In order to restore the safe use of the boat ramp, a number of short-term and long-term repairs to the boat ramp are recommended with estimated costs and proposed timing summarized in **Table 2** below.

Table 2 . Summary of Boat Ramp Repair Recommendations

Recommendation	Preliminary Estimate	Timing
Boat Ramp Walkway	\$ 10,000	<1 year
Erosion Protection Bank East of Boat Ramp	\$ 10,000	<1 year
Dredging Boat Launch Basin	\$ 60,000	<1 year
SSP Wall East of Boat Ramp	\$ 280,000	5 years
Boat Ramp Replacement	\$ 550,000	5 to 10 years

3.2 Site Protection

The boat launch has been deemed unsafe for operation and was forced to be closed in 2020 due to high water levels and wave action from the lake. The service life of the existing Groyne Wall has been cut short through severe deterioration and loss of sections of the wall. To protect the boat ramp and restore its safe use, repairs to the Groyne Wall, West Breakwater and Northeast Breakwater are required.

3.2.1 Groyne Wall Repairs

To allow for immediate and safe usage of the boat ramp, improved protection should be considered west of the boat ramp to dissipate wave action that was previously provided by the Groyne Wall. A temporary option for the restoration of wave protection from the west is through the utilization of a floating breakwater. A floating breakwater is essentially a pontoon or floating dock-like structure (anchored to the lake bottom) which is used to reduce wave energy. A floating breakwater positioned inside (east) of the Groyne Wall location would provide some attenuation for waves originating from the west, resulting in calmer water and improved protection to the boat launch. Given the severity of wave action at this location, full wave attenuation is not expected with a floating breakwater; however, the use of the boat ramp during large wave events is not anticipated. The utilization of a floating breakwater is not considered a reliable or effective long-term solution, but it could be utilized as a short-term solution until a more permanent solution can be implemented. The floating breakwater can be removed for the winter months to protect against damage from waves and ice and extend the lifespan of the structure. An example of a floating breakwater, shown on land, is provided in **Figure 14**. This example includes steel framing between two pontoons, and a timber wall extending into the water in the middle of the structure to provide wave attenuation.



Figure 14 . Floating Breakwater Example

While a floating breakwater provides a solution for the safe re-opening of the boat ramp in the short term, a long-term repair solution is recommended to extend the lifespan of the facility.

Given the state of the existing Groyne Wall, full replacement of the wall is required to provide adequate protection of the area from westerly waves. The following alternatives are considered for replacement:

- **Steel Sheet Pile Wall** – replacement of the Groyne Wall with a steel sheet pile wall driven into the lakebed with rock protection on the west side to dissipate waves and a support system on the east side to provide integrity to the wall. A more robust design than the previous wall is required to ensure that the wall is able to withstand the significant energy levels (in the form of wave action) prevalent in this area. While additional data and analysis is required through detailed design, an effective long term design is anticipated and would utilize a sheet pile system with a deeper lake embedment, increased sheet pile section modulus, increased plate thickness, and an enhanced wall system arrangement (such as a battered pile system similar to the West Breakwater or the Northeast Breakwater). A battered pile system would allow for a shallower embedment of sheet pile, with the battered piles embedded deeper to allow for resistance to wave action. A more efficient arrangement of wall (compared to the existing) may be reviewed as part of detailed design.
- **Rock Fill Breakwater** – replacement of the Groyne Wall with a rock fill breakwater involves the placement of a rock mound to dissipate waves action, protecting the inside of the boat launch area. A rock filled breakwater is typically constructed in a trapezoidal shape with a core stone centre overlain with heavy/large armour stone which prevents movement of the stone.

Comparing the two solutions, the main advantage of the steel sheet pile wall is the reduced footprint of the wall compared to a rock fill breakwater. However, it will still require armour stone to be placed on the outside of the wall for stability and wave attenuation. The steel sheet pile wall will also require specialized equipment to install the sheets with a barge for access. In contrast, the rock fill breakwater requires a larger footprint, as the berm requires sloped and stable sides, however, the construction of the rock fill breakwater is simpler, more reliable, more durable and can be constructed from the shoreline working outward into the lake using common equipment.

The proposed solutions will require additional information in the form of geotechnical data to carry out a detailed design, however, preliminary cost estimates were prepared by making some assumptions regarding the underlying conditions and configuration and are presented in **Table 3**. The following details were assumed for the purposes of carrying out the cost estimates:

- Floating Breakwater was assumed to be 15 m in length.
- Steel Sheet Pile Wall was assumed to be 20 m in length with 7.62 m (25 foot) long sheet piles, complete with walers, pile cap, as well as battered piles along the length at 3 m spacing. Stone was assumed on the lakeside of the wall with an average depth of 4 m, a 1 m width across the top with 2H:1V slopes.
- Rock Fill Breakwater was assumed to be 20 m in length, an average of 4 m in depth, a 2 m width across the top of the breakwater with 2H:1V slopes. The armour stone layer was assumed to be a 1 m thickness with a core stone fill centre.

These estimates can be further refined during detail design once additional information is made available.

Table 3. Summary of Groyne Wall Replacement Preliminary Costs

Recommendation	Preliminary Estimate	Timing
Floating Breakwater	\$ 50,000	<1 year
Steel Sheet Pile Wall	\$ 560,000	3 to 5 years
Rock Fill Breakwater	\$ 450,000	3 to 5 years

While the cost of \$50,000 may appear to be a high upfront cost for a short-term solution, a present value analysis shows that delaying a long term solution into the future could pay for the cost of the short term solution implemented in the near term. Present value analysis is based on the investment principle that money invested at a certain percentage will increase in value in the future. This can be reversed for an investment in the future to determine the net present value today. The calculation for Net Present Value (NPV) is the following:

$$NPV = \frac{C_n}{(1 + i)^n}$$

Where C_n is the cost of the solution at the time, n , and i is the discount rate.

The discount rate is the rate used to discount a future cost to obtain the present value. A typical discount rate used for cost analysis is 3.5%.

Considering the \$450,000 cost for the Rock Filled Breakwater, with an assumed three-and-a-half-year implementation horizon, the net present value for that long-term solution now is \$399,000, a difference of approximately \$51,000. This means that delaying the long-term solution by 3.5 years – in part through implementation of the short-term solution – offsets the cost of the short-term solution.

It is recommended to implement the floating breakwater solution in the short term to allow for the boat launch to open, with the Rock Filled Breakwater solution to be further developed and implemented over the next three to five years.

3.2.2 Breakwater Damage Repair

The areas of damaged components identified along the West Breakwater and Northeast Breakwater require repair to restore the function of the breakwaters. Failure to repair these areas will lead to further deterioration of the structures over time and shorten their expected lifespan.

The pile cap along the top of the West Breakwater provides stiffness to the sheet pile wall and requires repair or replacement in the short term to keep the sheet pile wall straight and plumb. The repair strategy would be to cut and straighten the existing pile cap and re-install by welding the pile cap to the sheet pile. Alternatively, if upon close inspection the pile cap is deemed unworthy to be re-used, a new pile cap can be installed for the section that has been removed. Access to the West Breakwater is not possible from land and will require work from a barge. Preliminary costing figures for repair of a 5 m long section of pile cap along the West Breakwater, including access is estimated at approximately \$9,000. It is recommended to carry out these repairs in the immediate future to prevent further damage to the wall.

The waler along the Northeast Breakwater is meant to transfer the load imparted on the outside face of the sheet pile wall and carry this load to the battered piles. Without the waler in place, the sheet pile wall takes the load imparted and this can cause deformation of the wall, as observed from the outside of the wall in the area of the failed waler. The repair strategy would be to restore the connection of the waler to the steel sheet pile wall and battered piles, either through the re-use of the existing waler or with replacement of the waler. Access to the Northeast Breakwater is not possible from land and will require work from a barge. Re-installation of the waler may require straightening of the existing sheet pile wall, and it is assumed that this could be carried out by an excavator from a barge. Preliminary costing figures for repair of a 6 m long section of waler along the Northeast Breakwater, including access is estimated at approximately \$12,000. It is recommended to carry out these repairs in the immediate future to prevent further damage to the wall.

Table 4. Summary of Breakwater Damage Repair Preliminary Costs

Recommendation	Preliminary Estimate
Repair Pile Cap at West Breakwater	\$ 9,000
Repair Waler at Northeast Breakwater	\$ 12,000

As part of detailed design, it is recommended to conduct a close-up investigation of the full length of both breakwaters to assess any other damage and determine if there are any other areas that may require repair. The investigation should include both an above and underwater inspection to assess the existing condition of the breakwaters. The underwater inspection would be carried out by a commercially qualified dive team in accordance with the Ontario Regulations for Diving Work. A preliminary cost between \$15,000 and \$20,000 can be expected to complete this work but would be subject to quotes from sub-consultants with underwater inspection capabilities and experience.

3.2.3 Northeast Breakwater Extension

In addition to providing protection from the west, it is suspected that the cause of erosion of the bank directly to the east of the boat ramp could be the result of the current configuration of the West Breakwater and Northeast Breakwater. As the westerly waves enter the opening, the wave energy would be deflected and continue along the Northeast Breakwater and to the shoreline, causing the erosion. To reduce the erosion of this area and provide additional protection to vessels entering or exiting the boat launch, extension of the Northeast Breakwater is proposed for consideration. Extension of the Northeast Breakwater by 20 m in a southwest direction from the current end of the wall would provide additional protection to the boat launch and users entering and exiting the area, as depicted in **Figure 15**.



Figure 15 . Extension of Northeast Breakwater

Similar alternatives presented in the previous section were explored for this work, including steel sheet pile wall and rock fill breakwater. A steel sheet pile solution will require rock protection along most of the length of the extension to provide adequate protection of the exposed end, and as such is considered to be an uneconomical solution. In addition, driving steel sheet pile at the existing end of the Northeast Breakwater will

require significant movement of the rock protection to allow for adequate driving conditions, further increasing the cost of sheet pile option.

The rock fill breakwater option is a simpler and more robust solution requiring the placement of rock at the end of the existing wall. However, given the location of the proposed extension, access for placement will require barges to transport material and equipment.

The proposed solutions will require additional information in the form of bathymetric survey data and geotechnical data to carry out a detailed design, however, preliminary cost estimates were prepared by making some assumptions regarding the underlying conditions and configuration, and are presented in **Table 5**. The following details were assumed for the purposes of carrying out the cost estimates:

- Steel Sheet Pile Wall was assumed to be 20 m in length with 7.62 m (25 foot) long sheet piles, complete with walers, pile cap, as well as battered piles along the length at 3 m spacing. Stone was assumed on the lakeside and half of the length of the wall on the harbour side with an average depth of 5 m, a 1 m width across the top with 2H:1V slopes.
- Rock Fill Breakwater was assumed to be 20 m in length, an average of 5 m in depth, a 2 m width across the top of the breakwater with 2H:1V slopes. The armour stone layer was assumed to be a 1 m thickness with a core stone fill centre.

These estimates can be further refined during detail design once more information is made available.

Table 5. Summary of Northeast Breakwater Extension Preliminary Costs

Recommendation	Preliminary Estimate
Steel Sheet Pile Wall	\$ 910,000
Rock Fill Breakwater	\$ 780,000

The extension of the Northeast Breakwater would provide additional protection to vessels entering and existing the boat launch and erosion protection to the shoreline directly east of the boat ramp. However, other protection measures discussed in Section 3.1 of this report can be implemented for erosion protection of the shoreline to the east of the boat ramp. In addition, the current configuration has allowed for the use of the boat launch for many years. If other erosion protection measures are implemented, the cost to implement an extension for the purpose of additional protection to vessels may outweigh the benefit of such a solution. As such, it is suggested to defer the extension of the Northeast Breakwater for future consideration.

3.3 East Beach

The recent high-water levels on Lake Huron have contributed to the continued erosion of the banks, leading to a large drop from the parking lot level to the beach. To stabilize the erosion of the banks, both natural and structural based options are presented below to help protect the shoreline. While these alternatives can help mitigate the risk of erosion, it does not eliminate the potential for continued erosion. The fluctuating water levels, wave energy and ice buildup will pose a challenge to any solution, and any protection measures employed will have a finite service life.

3.3.1 Marine Protection

The installation of groynes along the shoreline can be an effective method to reduce erosion in general along a shoreline and along the area to the east of the boat launch in particular. When the prevailing wind is at an angle with the shoreline, the waves roll in and out, moving sand from one area to another area along the shoreline, by a geological process called longshore (littoral) drift. This movement of sand can lead to erosion in areas (from where it originates) and build-up of sand in areas where it is deposited. In order to disrupt longshore drift, groynes can be installed along the shoreline. Groynes are shore protection structures built perpendicular to the shoreline and extending out into the lake. They function by interrupting waves and minimizing the movement of sand along the beach, by trapping the sand and widening the beach. Groynes can be constructed from a wide variety of materials including wood, steel or stone.

From review of previously prepared reports of the coastline at this site, it was noted that littoral drift of beach materials occurs from northeast to southwest. This means that material would be deposited to the east side of any constructed groyne and possible erosion would occur on the west side of the groyne. A previous study noted that the use of groynes may not be effective in this area, as the amount of material expected to be trapped by groynes may be limited and may require additional beach material to be trucked in. It was also noted that groynes can create additional hazards for recreational users, such as swimmers, due to unexpected changes to wave conditions.

Littoral drift could be seen at the Groyne Wall before the construction of the Boat Launch, with materials forming a beach to the east, but causing erosion to the west. Reports at the time of construction of the boat launch and breakwater noted that the effects of the launch ramp would be indiscernible, however, over time this construction may have exacerbated localized littoral drift, causing further erosion to the west. A report prepared in 1980 identified the day-use area to be within the projected 100-year erosion limit area, with 50% of the area expected to be lost to erosion over 50 years without implementation of proposed erosion control measures. It does not appear that any of the proposed erosion control measures were implemented.

Based on background research, the effectiveness, use and arrangement of the groynes is inconclusive and requires confirmation through detailed coastal engineering calculations that are outside of the scope of this report. As such, alternative erosion control measures are proposed in the following section.

3.3.2 Mechanically Stabilized Earth Wall

An alternative solution to groynes is a mechanically stabilized earth (MSE) wall. There are many types of MSE walls, and one type that could be considered utilizes geotextile filter fabric, either layered or in the form of a bag, to create a vertical wall. The wall is constructed using a layering system and progressive backfilling that locks in each layer in place as the wall is built up. The MSE wall would be angled back to provide a more stable structure. Hydroseed can be applied to MSE walls to provide a vegetated look to help the wall blend in with its surroundings. A sketch of an MSE wall is provided in **Figure 16**.

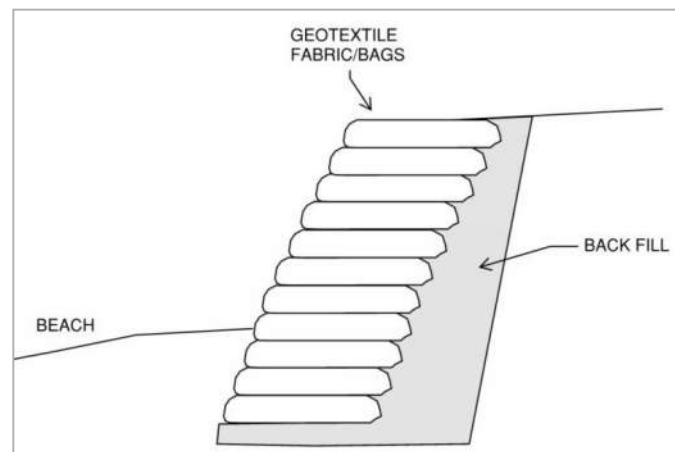


Figure 16. Mechanically Stabilized Earth Wall

One serious disadvantage of an MSE wall is the relatively shallow embedment depth with the possibility for erosion and undermining of the wall that is likely to occur over time, depending on water levels. This represents a long-term risk and issue to maintaining stability of the wall. A MSE wall would not have an equivalent service life expectation as compared to other protection methods.

3.3.3 Steel Sheet Pile Wall

As an alternative to natural based solutions, the installation of a steel sheet pile wall in front of the eroding bank is a sound structural based solution. The sheet pile wall is tied back with high strength tie rods connected to an anchor block which is embedded within the fill some distance behind the sheet pile wall for stability. It is recommended to install a guard along the top of the sheet pile wall for the safety of the public. A cross-section of a steel sheet pile wall is provided in Figure A3 in **Appendix A**. This wall is similar to the South Retaining Wall, and would provide a vertical face, taking up very little space on the beach.

An advantage of a sheet pile wall compared to the MSE wall is that it has a smaller footprint area, as the sheet pile can be installed vertically, leaving more space on the beach for the public. Another advantage of the sheet pile wall is that it provides better erosion resistance compared to the MSE wall, by extending deeper into the ground, providing an improved, longer-term service life. One disadvantage of a steel sheet pile wall along the beach may be the visual appearance. A naturalized bank is more aesthetically pleasing than a steel wall in general. However, various aesthetic treatments are available including the inclusion of a painted surface.

The design of a sheet pile wall system will require additional information in the form of geotechnical data to carry out a detailed design, however, a preliminary cost estimate per metre of wall were prepared by making some assumptions regarding the underlying conditions and configuration.

The critical section of shoreline east of the boat launch is at the parking lot area. Preliminary costing figures for a 35 m long steel sheet pile wall, including new steel sheet piles with a length of 7.6 m (25 feet), pile caps, guard, walers as well as tie rods and deadman anchors spaced at 2.44 m is estimated at approximately \$391,000 and would extend from the west end of the east beach to the east end of the parking lot and would include a wall perpendicular to the shoreline to prevent erosion behind the wall. Installation of steel sheet pile along the parking lot area is recommended in the 1 to 3-year time frame. The addition of a railing system along the sheet pile wall would be prudent for the safety of the public and could be added as part of detailed design, however, has not been included in the costs provided above.

The extension of the shoreline protection along the day-use area is recommended as a future consideration. Preliminary costing for a 120 m long steel sheet pile wall is estimated at \$1,380,000 and would extend from the east end of the parking lot area approximately to the east end of the day-use park area. If the steel sheet pile wall is desired to be extended, the cost would be an estimated \$11,300 per linear metre.



Figure 17. Plan View of Steel Sheet Pile Wall along East Beach

3.3.4 Summary

Due to the inconclusive effectiveness, use and arrangement of groynes and the requirement for confirmation through detailed coastal engineering calculations, the installation of groynes are not recommended at this time, with the installation of the steel sheet pile wall being the recommended erosion control measure. A summary of the estimated costs and proposed timing is summarized in **Table 6**.

Table 6. Summary of Beach Protection Recommendations

Recommendation	Preliminary Estimate	Timing
Parking Lot Steel Sheet Pile Wall Protection	\$ 391,000	1-3 years
Day-use Park Steel Sheet Pile Wall Protection	\$ 1,380,000	Future Consideration

3.4 East Beach Access

High water levels and waves have resulted in erosion and retreat of the shoreline. Erosion of the banks has made access to the beach difficult, with loss of the graded path down to the beach. To provide beach access to the public, it is recommended to install a removable aluminum stairway for the short-term. The stairway can be fabricated to suit field conditions to provide easy access from the top of the bank to the beach.

Preliminary review of the elevations suggests that a 4.3 m long stairway, with a rise of 3 m could be installed to provide access from the top of the bank to the beach. A 4.3 m long stairway weighs approximately 70 kg and can be installed and removed with relative ease. The aluminum stairway offers the flexibility of adjustment at the beginning and end of the beach season or if the condition of the banks change. One disadvantage at this location is the length of the stairway (which is considered relatively long without a landing). The proposed aluminum stairway is recommended as a short-term solution; however, it is

recommended to consider a more permanent solution that includes a safer length and includes a landing in the long-term.

An example of an aluminum stairway used for beach access is provided below in **Figure 18**. Preliminary costing for a 4.3 long stairway is approximately \$10,000. This solution can be implemented in the immediate future to allow for use in the 2021 season.



Figure 18. Removeable Stairway Example - Aluminum Stairway

3.5 South Seawall

The erosion of the bank to the West Bluff in addition to the loss of Segment B of the South Seawall has eroded the fill behind the South Seawall and South Seawall Extension. Repairs are required to restore this area and to prevent further erosion. The proposed solutions will require additional information in the form of geotechnical data to carry out a detailed design, however, preliminary cost estimates were prepared by making some assumptions regarding the underlying conditions and configuration.

3.5.1 Localized Sheet Pile Repair and Extension

As a short-term fix, the missing portion of Segment B of the South Seawall requires replacement to seal off the void and prevent wash out at the transition from the South Seawall to the South Seawall Extension. This involves driving new steel sheet pile sheets offset from the existing location of the wall and connecting to the steel sheet pile of Section A of the South Seawall and Section C of the South Seawall Extension. The missing section of South Seawall Repair is shown in **Figure 19**. The connection between the new and existing sheet piles would require custom closures by installing angles or plates and welding to the sheet piles and filling any gaps below water with bagged concrete. It is recommended to install a guard along the length of the sheet pile for the safety of the public. Preliminary costing figures for a 7.5 m long steel sheet pile wall with 7.62 m long sheet piles complete with waler, pile cap and tie rods, as well as clear stone backfill for eroded area behind the wall along the length of Segment B of the South Seawall and a guard along the full length of the wall, is estimated to be approximately \$140,000. It was assumed that the pipe pile tie-back anchors could be re-used.

The shoreline at the south end of the South Seawall Extension has eroded, exposing the end of the sheet pile wall and allowing water in behind the sheet pile wall, thereby eroding the banks behind it. In order to

prevent further erosion of the area, this sheet pile wall requires extension further south into the bank. The extension is also illustrated in **Figure 19**. Preliminary costing figures for a 5 m long steel sheet pile wall extension with 7.62 m long sheet piles complete with waler, pile cap, guard, tie rods and deadman anchors, as well as clear stone backfill for eroded area behind the wall, is estimated to be approximately \$90,000.

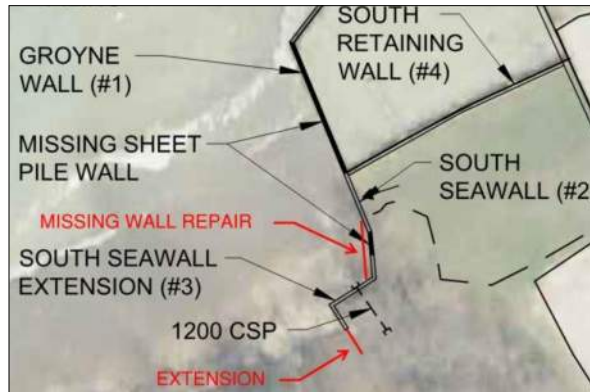


Figure 19. South Seawall Repairs

While some the sheet piles may appear to be in good condition in some areas, the condition below current water levels could be worse, as typically most of the corrosion of sheet piles is at or below the waterline. Due to the age and condition of the existing steel sheet piles, the possible incompatibility of sheet pile interlocks and inefficiency of reusing old materials, the removal and reuse of existing sheet piles is not recommended.

3.5.2 Replacement

Given that a portion of the South Seawall has recently failed and is now missing and that the wall is of unknown age and depth, it would be prudent to replace the entire South Seawall. Encapsulation of the existing wall with new sheet pile is recommended, providing a long-term solution. It is also recommended to install a guard along the sheet pile wall for the safety of the public. A sketch depicting the full replacement is provided in **Figure 20**. Preliminary costing figures for a 25 m long steel sheet pile wall complete with waler, pile cap, guard, tie rods, deadman anchors, as well as clear stone backfill for eroded area behind the existing wall along Segments A and B of the South Seawall, the existing South Seawall Extension and new extension is estimated at approximately \$320,000.

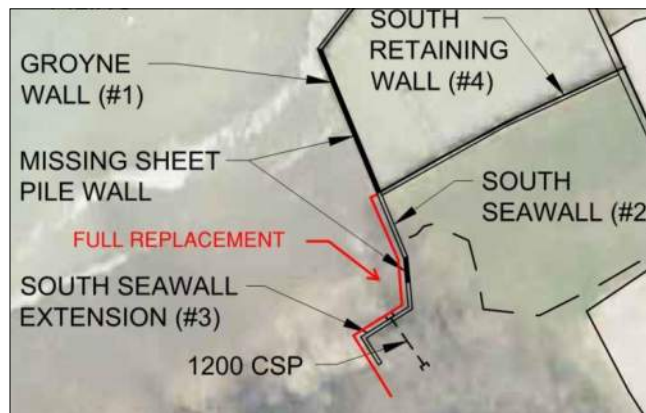


Figure 20. South Seawall Replacement and Extension

3.5.3 Recommendation

A summary of the South Seawall and Extension repair and replacement options is provided in **Table 7**.

Table 7. Summary of South Seawall and Extension Repair and Replacement Options

Recommendation	Preliminary Estimate	Timing
South Seawall localized sheet pile repair	\$ 140,000	1-3 years
South Seawall Extension	\$ 90,000	1-3 years
South Seawall and South Seawall Extension Replacement	\$ 320,000	1-3 years

The estimated cost of repair of a portion of the South Seawall and further extension of the South Seawall Extension at \$140,000 and \$90,000, respectively, for a combined cost of \$230,000. This repair includes 7.5 m of new wall along the South Seawall and a 5 m extension at the south end of the South Seawall Extension, leaving approximately half of the length of the existing wall. For an estimated \$320,000, or an additional \$90,000, the entire 25 m length can be replaced and is considered better value for money spent. As such, it is recommended to replace the entirety of the sheet pile length along this section.

In addition to replacing the sheet pile wall (either in part or as a whole) and backfilling the eroded areas behind the existing sheet piles, the area could be further protected using a splash apron installed at the top of the fill at the sheet pile to protect against erosion from the wave splash. To further reduce the effect of waves, armour stone can be placed in front of the sheet pile wall to help dissipate wave energy. These options have not been included in the cost estimates provided above but could be added as part of detailed design.

3.6 South Retaining Wall

The South Retaining Wall was observed to be bowed outwards and erosion was observed in the fill at the top of the wall. It is not clear whether the wall has shifted or if the wall was constructed with a bow in it, however, the wall underwent rehabilitation in 2017 to repair the tie-back system, and as such, no work is recommended to the South Retaining Wall structural system at this time. During the execution of other works around the site, a survey of the top of the wall would be prudent (for baseline data) for comparison of future movement, should it be evident.

If a large scope rehabilitation is planned for the site in the future, the option of replacement of the wall should be considered given the unknown age and depth of the wall's installation. Replacement would include encapsulation with new sheet pile driven in front of the existing wall, and new anchor blocks installed in the fill at a distance behind the wall.

In the interim, a splash apron could be constructed at the top of the sheet pile wall to prevent continued erosion of the fill. This would involve excavating a portion of the fill at the top of the sheet pile, placement of granular A fill and construction of a reinforced concrete apron on top. Preliminary costing figures for a 2 m wide concrete apron along the length of the South Retaining Wall with a thickness of 0.2 m and a 0.3 m thick granular pad is approximately \$20,000. The installation of a concrete apron is recommended within the one to three-year timeframe. A sketch of the concrete apron alternative is shown in Figure A4 in **Appendix A**.

To improve safety at the South Retaining Wall a permanent replacement of the guard system to a picketed guard system would be a more appropriate application over the current open two rail system and is recommended in the one to three-year time frame. Replacement costs of the guard system is estimated to be approximately \$22,000. A short-term measure for improve safety includes the installation of snow fencing or chain-link mesh attached to the existing guard system. The short-term measure could be carried out immediately by SCRCA staff as part of their regular site maintenance for a few hundred dollars. Combining the splash apron work with the guard replacement would provide some cost and general construction efficiencies.

A summary of the South Retaining Wall recommendations is provided in **Table 8**.

Table 8. Summary of South Retaining Wall Recommendations

Recommendation	Preliminary Estimate	Timing
Concrete Splash Apron	\$ 20,000	1-3 years
Picketed Guard Replacement	\$ 22,000	1-3 years
Short-term Guard Improvement	\$ 500	< 1 year

3.7 Site Drainage

3.7.1 Hydrology

The drainage and hydrology of the site was assessed according to existing conditions as well as potential flows for areas impacted under proposed conditions. The site condition details are provided in **Section 2.4.5**.

The park catchment area was subdivided into two sections, as there is potential for the southern portion of the catchment area (Park 1) to be redirected via ditching away from Outfall 1 to flow west under the access road and be discharged to the culverts. During site visits, erosion of the banks was noted at the Outfall 1 location (refer to **Section 2.4.5**) and a reduction in catchment area feeding into the location may mitigate this impact.

The independent catchment area draining into Culvert 2 but not Culvert 1 was assessed in the event that the culverts are replaced with a single extended culvert and a ditch inlet catchbasin (DICB) or other structure needs to be installed to collect drainage from the independent area. A summary of the catchment conditions and rationale is provided in **Table 9**.

The Rational Method was used to estimate peak flows for the catchment areas. The Rational Method is a simple method for calculating peak flows based on catchment area, runoff coefficient, and time of concentration (t_c). Various empirical equations have been developed to estimate t_c from physical watershed parameters. These include the Soil Conservation Service (SCS) Lag Method, Airport Method, and the Uplands-Overland Method. In this report, the average of these three t_c results was used in the Rational Method calculation. The intensity values were calculated with parameters provided by MTO's IDF Curve Lookup web-based application. Runoff coefficients were based on land cover and soil type. The Rational Method is intended for small-scale

applications and is applicable to catchment areas smaller than 100 ha. The procedure and results for this method are provided in **Appendix D**. A summary of the estimated peak flows is provided in **Table 9**.

Table 9. Peak Flows - Existing and Proposed Catchment Areas

Catchment Name	Assessment Purpose	Application	Catchment Area (ha)	Return Period Peak Flow (m ³ /s)					
				2-year	5-year	10-year	25-year	50-year	100-year
Highland Culvert 1	Peak flows conveyed by Culvert 1 under existing conditions	Existing	23.97	0.84	1.09	1.25	1.46	1.61	1.76
Highland Culvert 2 (Independent)	Peak flows to be collected by DICB under proposed single-culvert replacement	Proposed	0.20	0.01	0.02	0.02	0.03	0.03	0.03
Highland Culvert (Combined)	Peak flows Conveyed by Culvert 2 under existing conditions	Existing	25.67	0.91	1.17	1.35	1.57	1.73	1.89
Park 1	Peak flows collected by Outfall 1 under proposed redirected flow conditions	Proposed	0.79	0.10	0.14	0.16	0.18	0.20	0.22
Park 2	Peak flows collected by the proposed laneway culvert under proposed redirected flow conditions	Proposed	0.99	0.11	0.15	0.17	0.20	0.22	0.24
Park (Combined)	Peak flows collected by Outfall 1 under existing conditions	Existing	1.78	0.17	0.22	0.26	0.30	0.33	0.36
Laneway 1	Peak flows collected by Outfall 2 under existing conditions	Existing	2.14	0.16	0.21	0.24	0.28	0.31	0.34
Highland Culvert With Park 1	Peak flows collected by the proposed single-culvert replacement, including redirected flows.	Proposed	26.46	0.94	1.21	1.39	1.62	1.79	1.96

3.7.2 Hydraulics

MTO Drainage Design Standards (2008) were used to assess the capacity of the existing 900 mm culverts. The culverts were treated as conveying watercourse flows under a local road. The following sections were used:

- Section WC-1: Design Flows (Bridges and Culverts)
 - For a local highway classification, the following design flows are established for bridges and culverts on a watercourse:
 - The design flow is defined as the 10-year event for a crossing with a total span less than or equal to 6.0 m; and
 - The check flow for scour is defined as 100% of the 100-year event.

- Section WC-7: Flood Depth for Watercourse Drainage Systems:
 - Section 3.5 provides the maximum allowable water depth during the design flood, which is defined as that which creates a headwater (HW) to diameter (D) ratio (HW/D) of 1.5 at the culvert inlet, if the culvert diameter or rise is less than 3.0 m.

- Section WC-7: Freeboard for Watercourse Drainage Systems
 - For culverts located on a defined watercourse, in accordance with Section 3.1 of the Highway Drainage Design Standards the minimum freeboard from the edge of the travelling lane to the high-water level during the design flow is 0.3 m for local highways.
 - For the check flow, the water level should not exceed the edge of the travelling lane.

The hydraulics for the existing 900 mm and 1200 mm CSP culverts were assessed. The downstream 1200 mm culvert was deemed to be adequately sized under existing conditions, but the upstream 900 mm CSP culvert adjacent to the parking lot was determined to be undersized and would cause overtopping of the embankment during the 100-year storm.

The hydraulics for a combined 1200 mm CSP replacement culvert were also assessed, along with the culvert size required to convey redirected flows from the park area under the laneway (500 mm) CSP. The procedure and results are provided in **Appendix D**. A summary is provided in **Table 10**.

If a 1200 mm combined CSP culvert is installed, minor flows from the catchment adjacent to the existing Culvert 2 inlet will need to be collected via a DICB or other collection structure. The 100-year flow for this location is estimated to be 0.03 m³/s and a standard 600 mm x 600 mm DICB will be sufficient to collect these flows.

Table 10. Hydraulic Assessment Results, Culverts Identified for Replacement or Rehabilitation

Name	Diameter (mm)	Material	Type	Recommendation	Design Flow			Check Flow Overtops Embankment ?
					HW/D for Q10	Freeboard to Embankment (m)	HW/D ≤ 1.5 or Freeboard ≥ 0.3 m ?	
Culvert 1	900	CSP	Existing	Remove	1.26	0.57	Yes	YES
Culvert 2	1200	CSP	Existing	Remove, add DICB	0.78	0.81	Yes	No
Highland Culvert	1200	CSP	Proposed	Install, replacing Culvert 1 and 2	0.80	0.74	Yes	No
Park 1 Culvert	500	CSP	Proposed	Install	0.94	0.53	Yes	No

3.7.3 Ditch Assessment

The size of the ditch required to intercept flows from Park Catchment 1 was assessed, and this information is included in Appendix D. Additionally, the approximate size of the outfalls required to convey the 100-year storm from the Park and Laneway catchment areas were assessed in order to estimate the expected flow velocities at these locations and the potential for erosion. A summary of the results is provided in **Table 11**.

Table 11. Drainage Ditch Capacity Results

Design Parameter		Park 1 Ditch	Outfall 1 (combined)	Outfall 1 (Park 2)	Outfall 2
100-year Design Flow	m ³ /s	0.22	0.36	0.24	0.34
Channel Bottom Width	m	0	0	0	0
Side Slope 1	m/m	2	3	3	3
Side Slope 2	m/m	2	3	3	3
Manning's Roughness Coefficient ¹	n/a	0.1	0.03	0.03	0.03
Channel Slope	%	1.0	8.0	8.0	3.0
Channel Velocity	m/s	0.39	2.21	1.96	1.50
Computed Depth	m	0.55	0.24	0.20	0.28
Riprap sizing	mm	n/a	350	300	150

¹ Manning's roughness coefficient is based on the presence of moderate vegetation within existing drainage ditch, or on the outfall being bare stone/soil.

Approximate riprap sizing was provided to assess the erosion potential at the outfalls. In accordance with WC-3, section 3.2.1, riprap for protective aprons should be designed for 1.5 times the design flow velocity. Figure 7 from the Transportation Association of Canada's Guide to Bridge Hydraulics (June 2001), labelled as **Figure 21** in this report, presents a relationship of stone size versus velocity against stone that has been widely used in Canada. This figure assumes a relative stone density of 2.65 and side slopes of 2H:1V or flatter. Velocity against stone is estimated at 2/3 of the cross-sectional mean in straight channels and 4/3 of the cross-sectional mean on the outside of severe bends. This figure shows the same relation between velocity and stone size as the design table in the MTO Drainage Design Standards (section WC-3, 3.3.1).

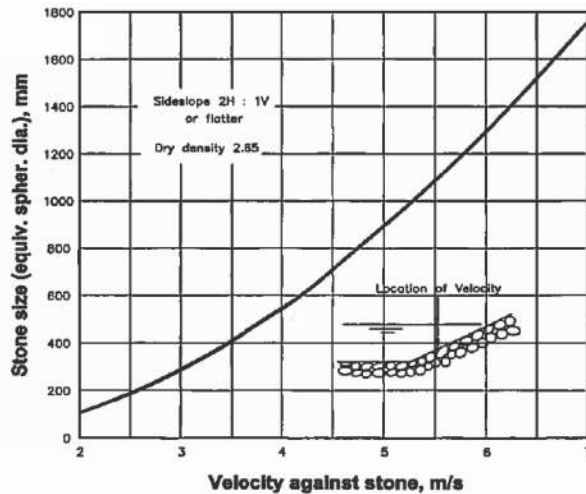


Figure 21: "Compromise" Riprap Sizing Curve.

Redirecting the Park 1 catchment area away from Outfall 1 only reduces peak flow velocities by approximately 10%. Erosion protection sizing is not significantly reduced. Therefore, redirecting flows from Park 1 is not anticipated to be an effective way to mitigate erosion in this area. Armoring of the eroded area and limiting foot traffic at this location is recommended instead.

3.7.4 Summary

There are three areas of hydrologic concern within the study area, which includes the area collected and drained by the two existing culverts west of the Highland Glen Boat Launch, the outfall of the park catchment area, and the outfall of the eastern laneway catchment.

The two existing culverts are in series, and the downstream culvert collects runoff from a small (0.2 ha) catchment area in addition to the flows conveyed by the upstream culvert. The interceptor swale between the two culverts was observed during the site visit to collect significant amounts wood debris and brush, which contributes to clogging of the second culvert. It is recommended that the two culverts be removed and the length of swale enclosed by a single 1200 mm culvert. A DICB connected into the culvert is recommended to collect flows from the area that drains to the existing interceptor swale. The DICB will allow water to drain from the area but will reduce the headwater conditions at the pipe, which may have contributed to some of the erosion seen at the outlet pipe's location.

The two outfalls have been observed to have erosion issues due to drainage pathways and foot traffic, and riprap sizing for these locations has been provided in **Table 11**.

Preliminary costing figures for this work are estimated to be approximately \$150,000 and include the removal of existing culverts, installation of a new culvert, installation of a DICB and associated earthworks. It is recommended to carry out the culvert upgrades in the 1 to 3-year timeframe.

4. Closing

The following recommendations are provided to restore the safe use of the boat launch and provide extended lifespan of the facility and overall area.

Table 12 and **Table 13** summarize the immediate and long-term recommended rehabilitation and repairs presented in Section 3 of the report, with preliminary cost estimates and proposed timing for the works.

Table 12. Summary of Immediate Recommendations

Description of Work	Preliminary Cost Estimate	Proposed Timing
Boat Launch		
Modular Floating Platform	\$10,000	< 1 year
Erosion Protection of Shore East of Ramp	\$15,000	< 1 year
Dredging Boat Launch Basin	\$60,000	< 1 year
Site Protection		
Groyne Wall - Floating Breakwater	\$50,000	< 1 year
Groyne Wall - Rock Fill Breakwater	\$450,000	3-5 years
West Breakwater Damage Repair	\$9,000	< 1 year
Northeast Breakwater Damage Repair	\$12,000	< 1 year
East Beach Protection		
Parking Lot Steel Sheet Pile Wall Protection	\$391,000	1-3 years
Beach Access		
Aluminum Stairway	\$10,000	< 1 year
South Retaining Wall		
Short-term Railing Safety Measure	\$500	< 1 year

Table 13. Summary of Long-term Recommendations

Description of Work	Preliminary Cost Estimate	Proposed Timing
Boat Launch		
Boat Ramp Replacement	\$550,000	5-10 years
Retaining Wall for Protection of Shore East of Ramp	\$280,000	5 years
South Seawall		
Steel Sheet Pile Replacement	\$320,000	1-3 years
South Retaining Wall		
Concrete Splash Apron	\$20,000	1-3 years
Railing Replacement	\$22,000	1-3 years
Site Drainage		
Culvert Upgrades	\$150,000	1-3 years

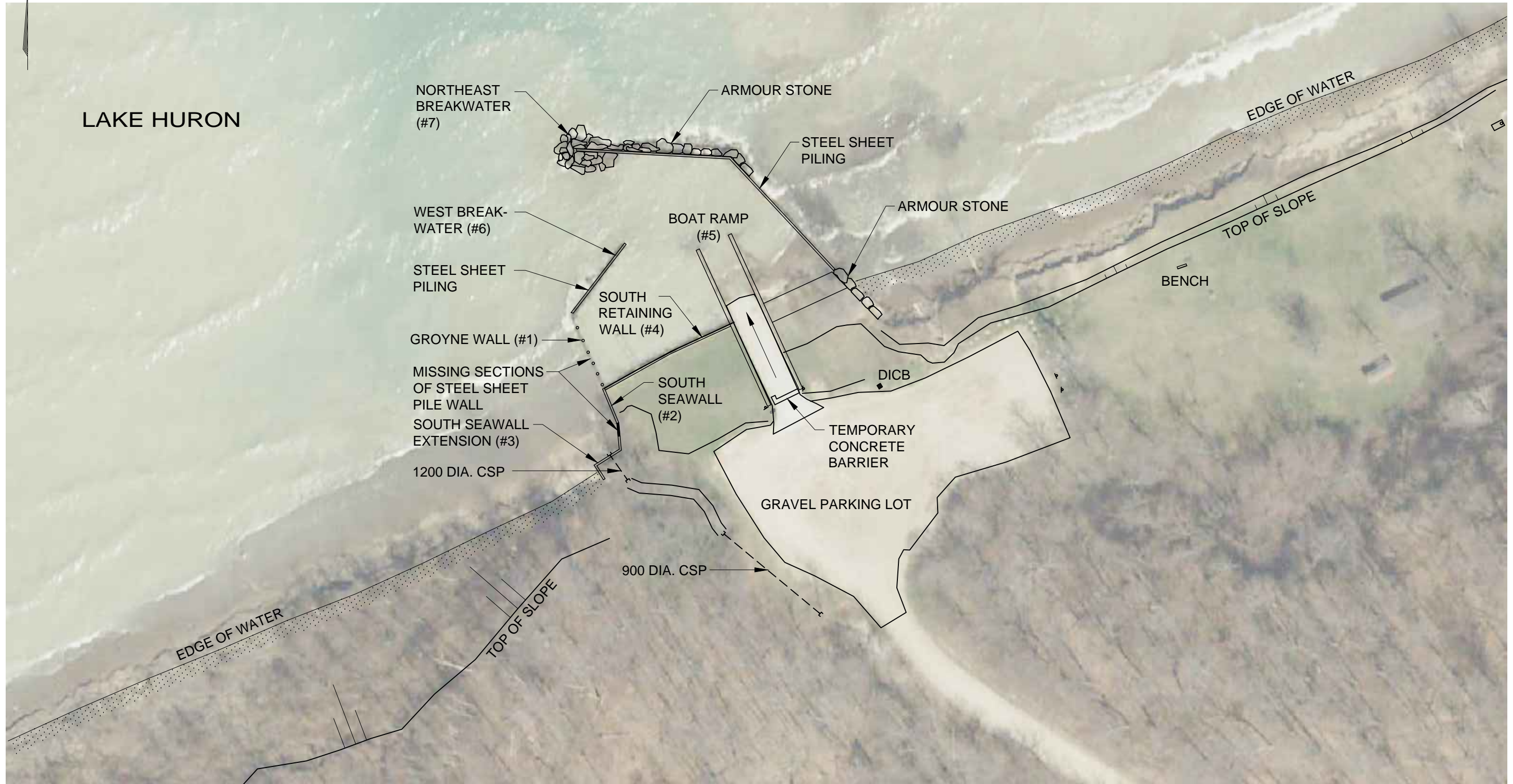
Appendix A

Drawings



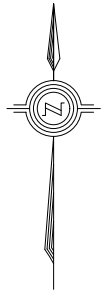
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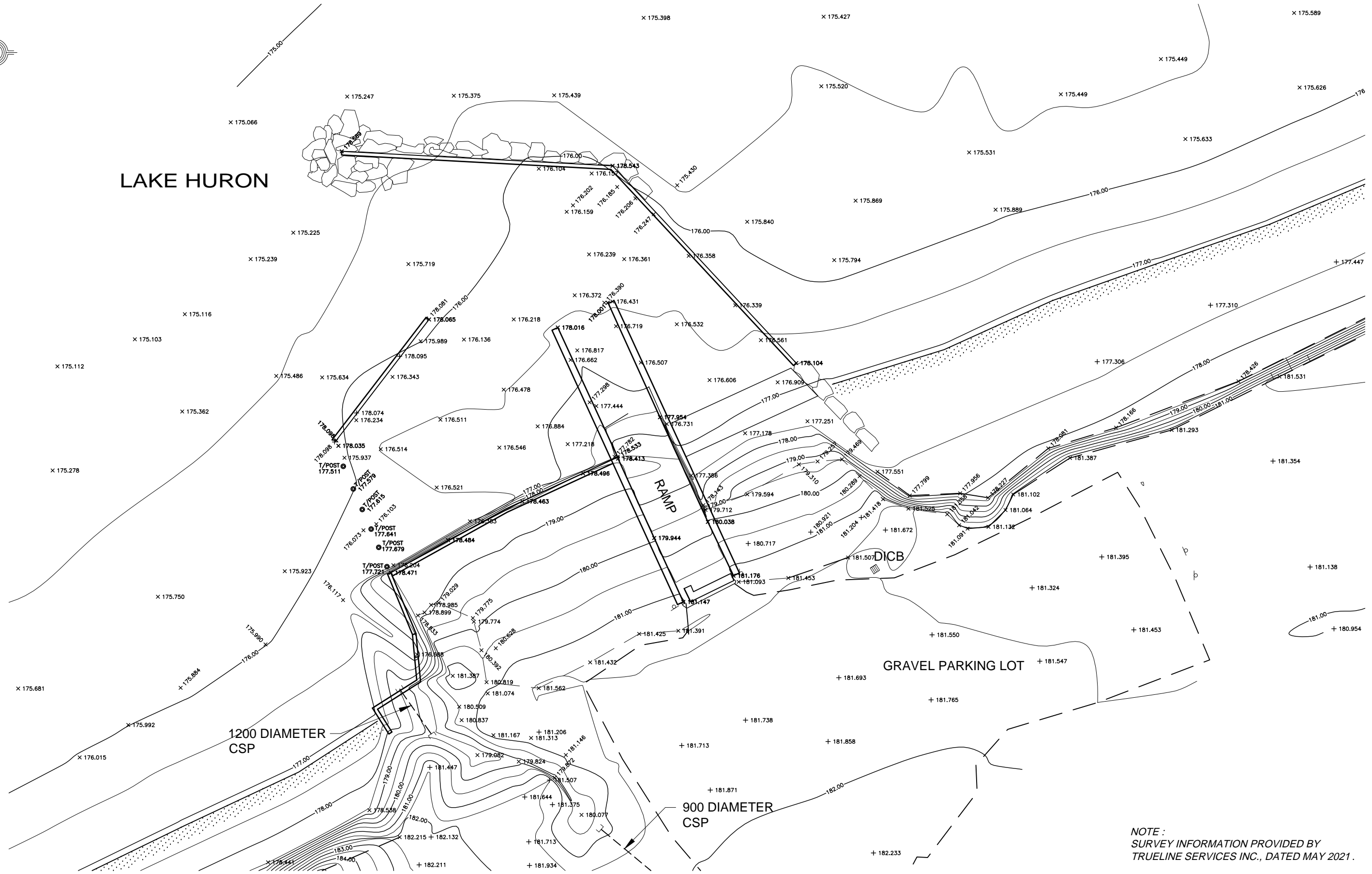


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CONSERVATION AUTHORITY

AECOM
PN 60644837

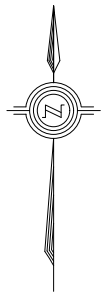
HIGHLAND GLEN CONSERVATION AREA
BOAT LAUNCH

SURVEY PLAN
SOUNDINGS

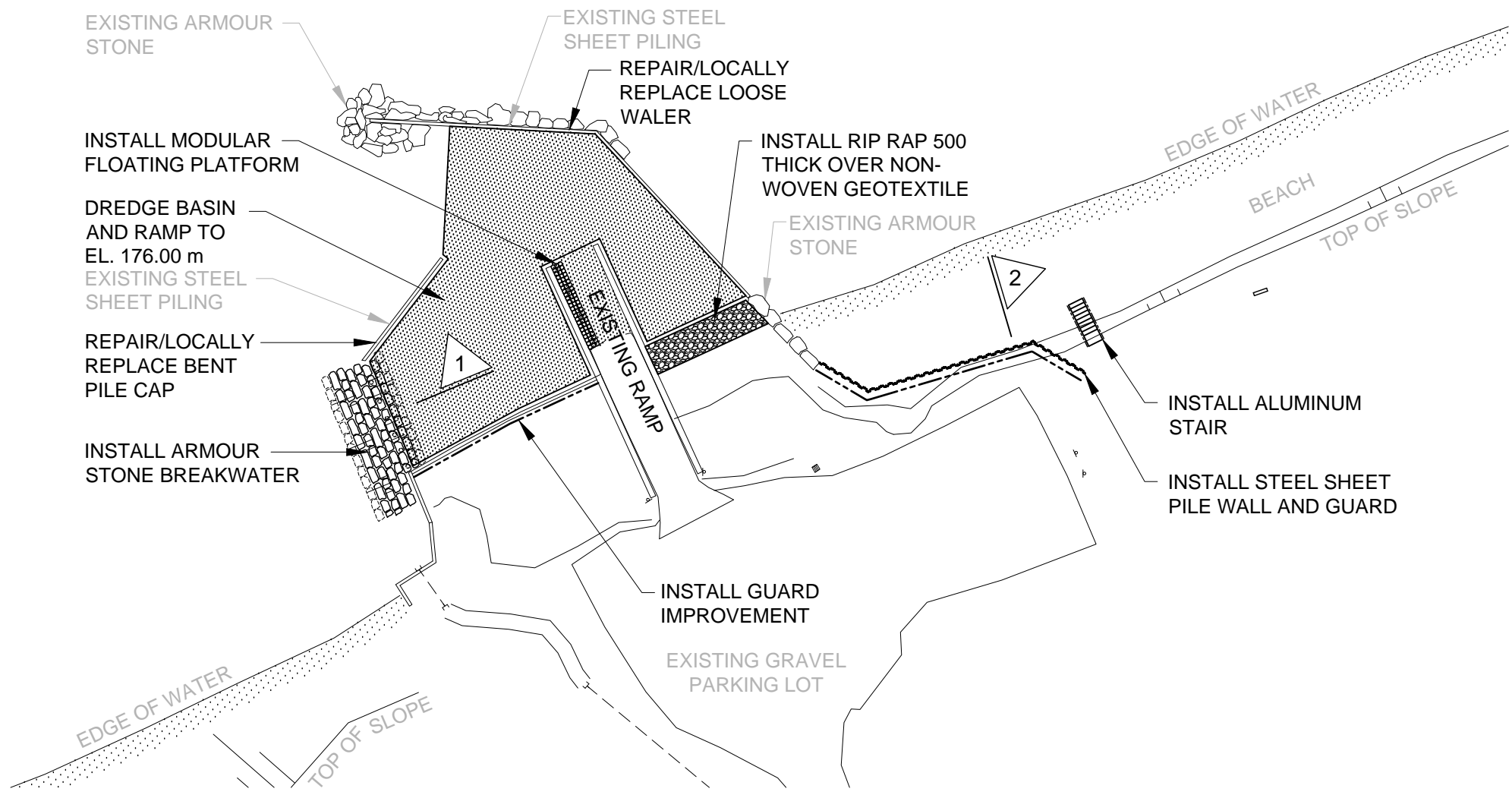
FIGURE No.
FIGURE A2

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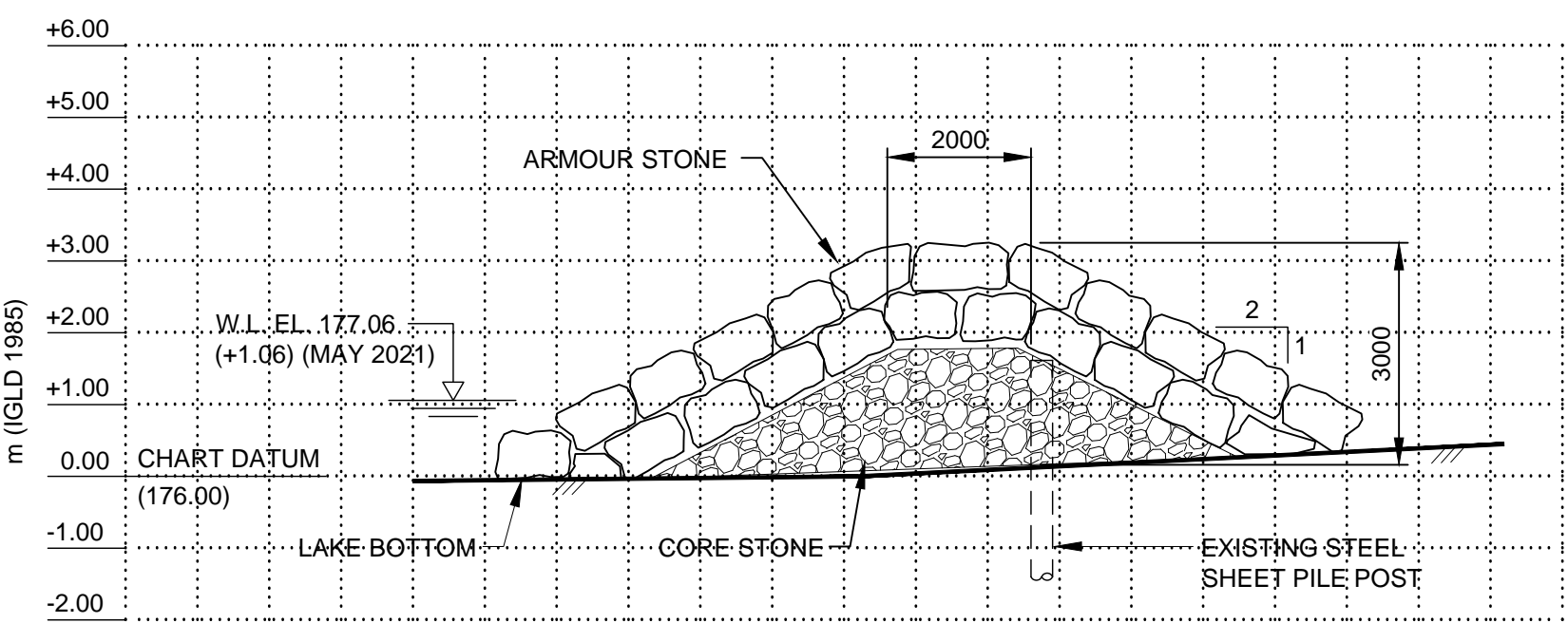
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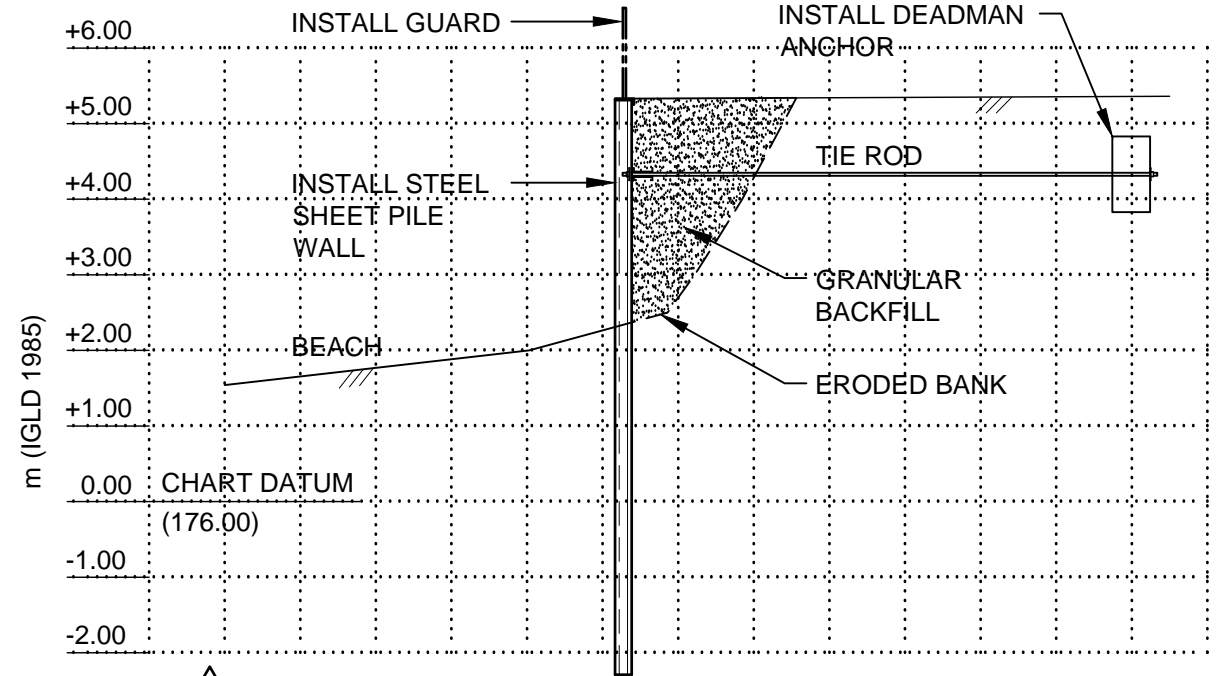
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SITE PLAN



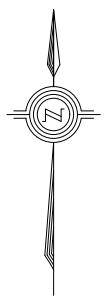
1 BREAKWATER - SECTION



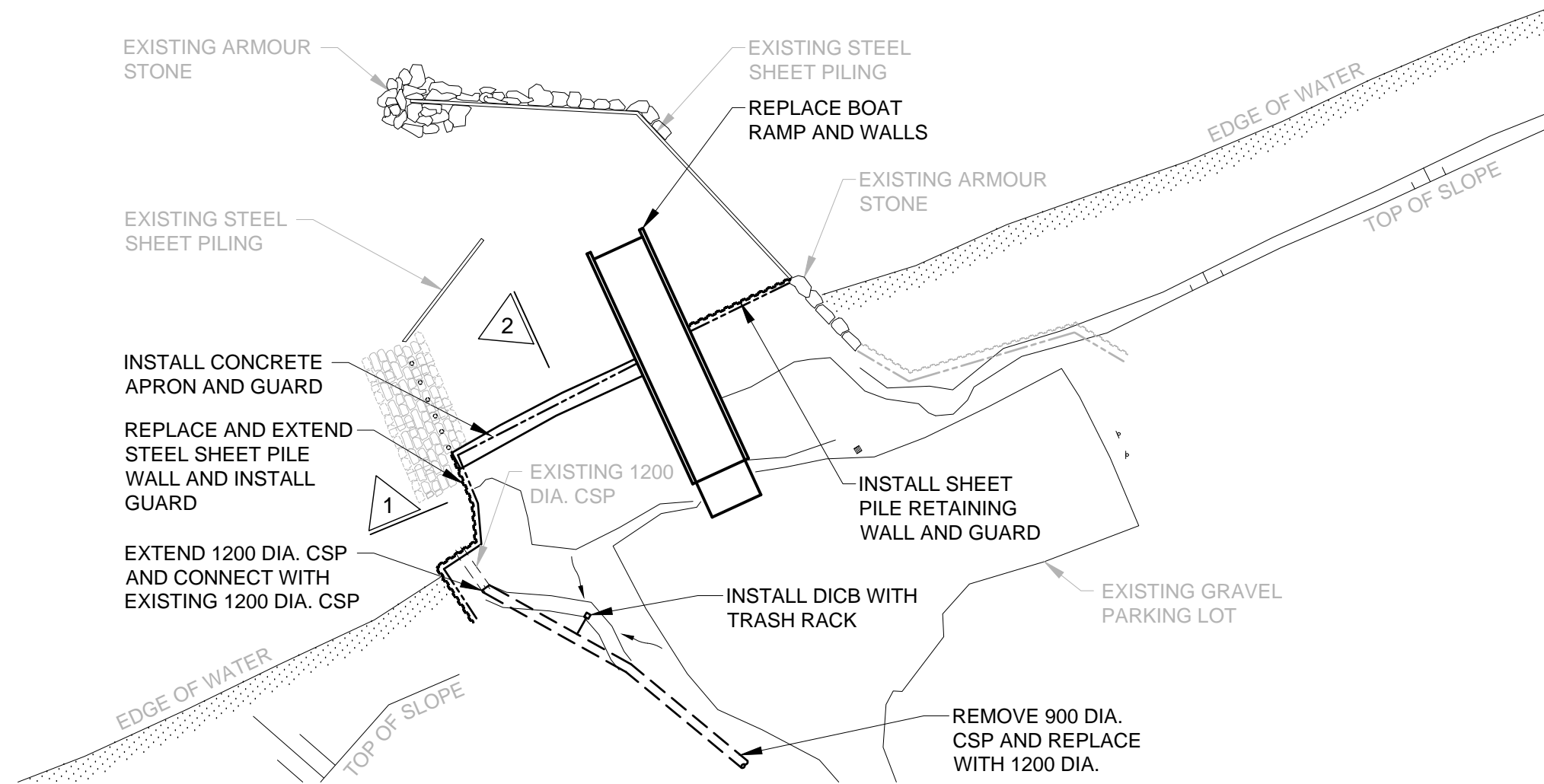
2 STEEL SHEET PILE WALL - SECTION

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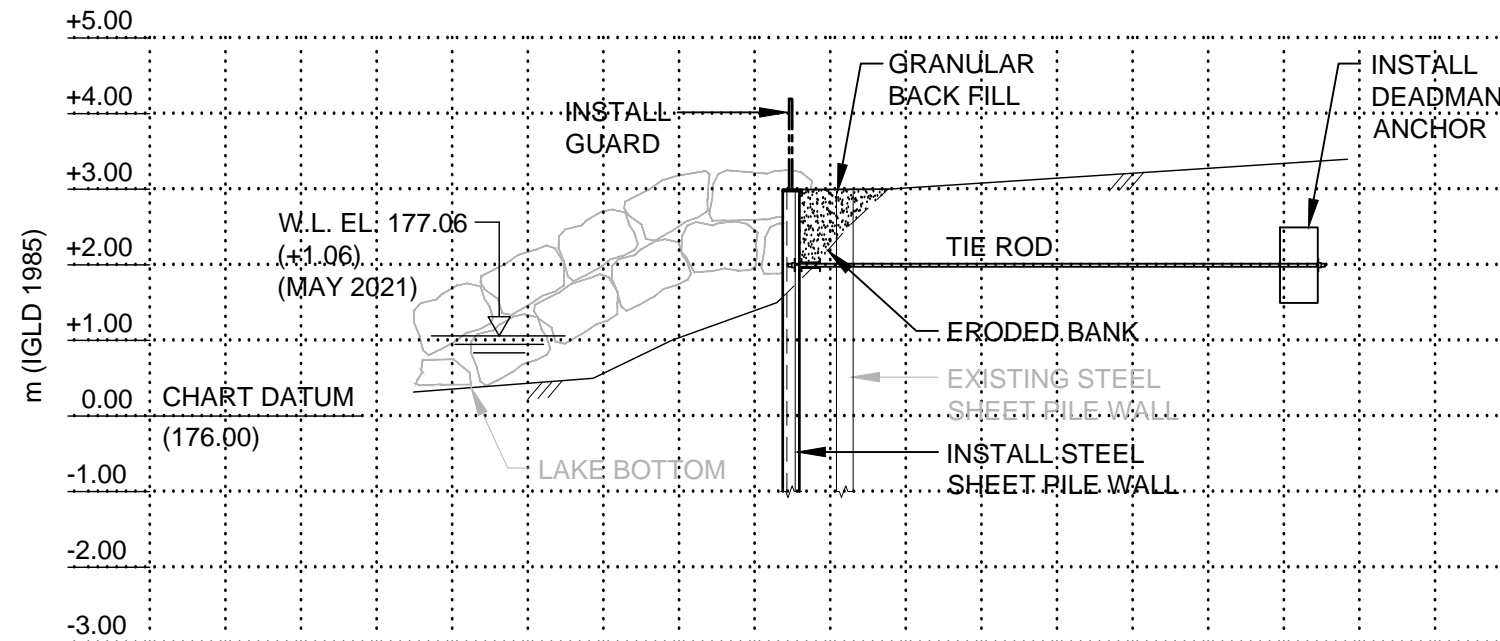
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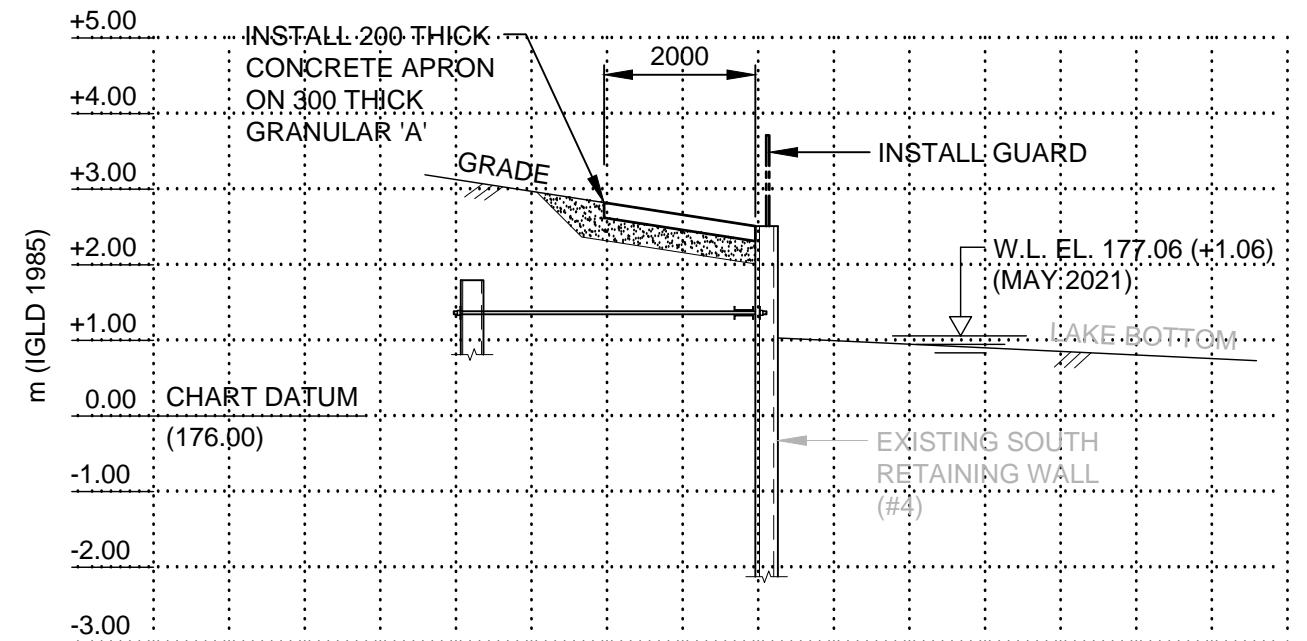
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SITE PLAN



1 STEEL SHEET PILE WALL - SECTION



2 RETAINING WALL - SECTION



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**ST. CLAIR REGION
CONSERVATION AUTHORITY**

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PN 60644837

**HIGHLAND GLEN CONSERVATION AREA
BOAT LAUNCH**

**SITE PLAN
OUTFALL LOCATIONS**

FIGURE No.
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Appendix B

Photographs



Photo 1- Boat Ramp



Photo 2- Top of Boat Ramp

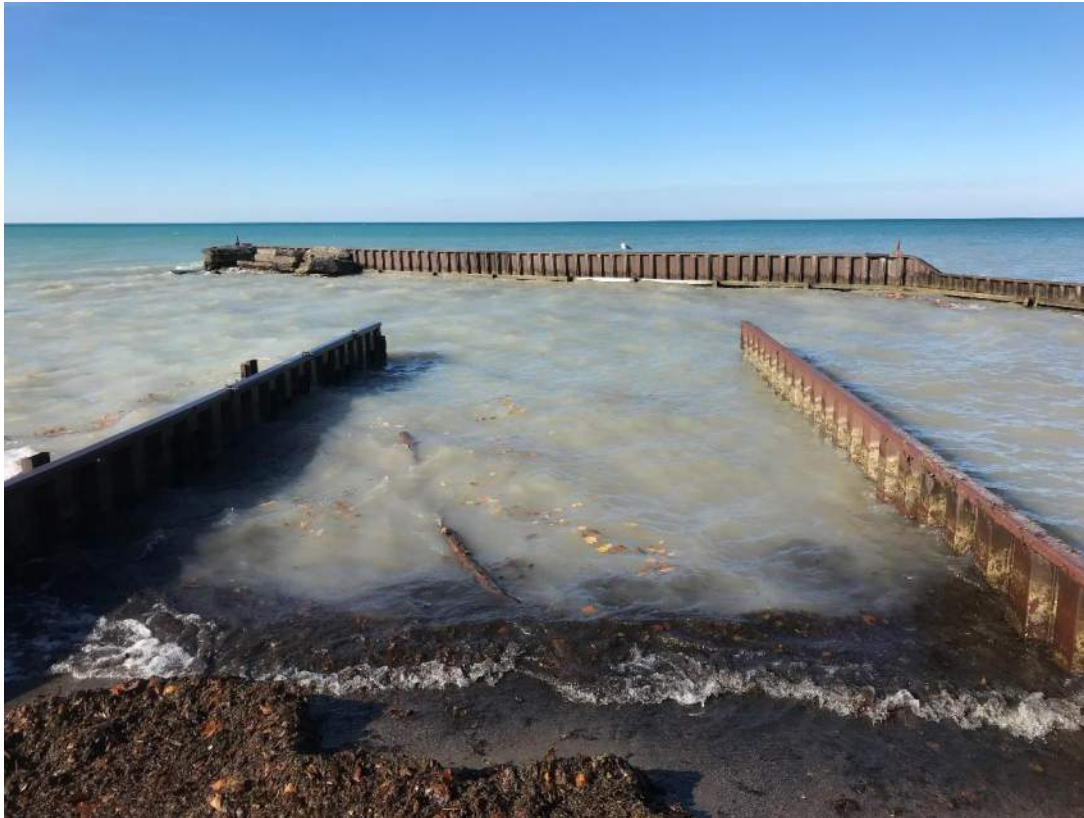


Photo 3- End of Boat Ramp at Water



Photo 4- Corrosion of Sheet Pile Wall at Boat Ramp



Photo 5- Corrosion with Section Loss and Perforations, Boat Ramp Sheet Pile



Photo 6- Outside of East Sheet Pile Wall, Boat Ramp



Photo 7- Outside of East Sheet Pile Wall, Boat Ramp



Photo 8- Erosion of Banks East of Boat Ramp



Photo 9- Northeast Curtain Wall



Photo 10- West Breakwater



Photo 11- Missing Groyne Wall, Looking from Boat Ramp



Photo 12- Erosion in Bank at South Retaining Wall, Note Buried Sheet Pile Wall



Photo 13- Erosion of Bank Along South Retaining Wall



Photo 14- Looking West along South Retaining Wall



Photo 15- Staining on Sheet Pile of South Retaining Wall



Photo 16- Erosion of Bank behind Groyne Wall and South Seawall Extension



Photo 17- Missing Segments of Groyne Wall



Photo 18- South Seawall Extension and Missing Segment of Groyne Wall



Photo 19- Erosion behind South Seawall Extension



Photo 20- Erosion behind South Seawall Extension



Photo 21- Exposed Corrugated Steel Pipe behind South Seawall Extension



Photo 22- Erosion of Bluff West of Boat Launch



Photo 23- Looking East from Beach to Boat Launch



Photo 24- "Path" to Beach East of Day Use Area



Photo 25- Banks along Beach



Photo 26- Beach East of Boat Launch



Photo 27- Parking Lot



Photo 28- Day Use Area



Photo 29- Corrosion of sheet pile above waterline at West Breakwater



Photo 30- West Breakwater looking East – note bent pile cap on West Breakwater and loose Waler on Northeast Breakwater in background



Photo 31- Lakeside of Northeast Breakwater looking East – Note deformation in wall near armour stone



Photo 32- Corrosion of sheet pile above waterline at Northeast Breakwater

Appendix C

Cost Estimates

BOAT LAUNCH - Modular Floating Platform

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Modular Floating Platform	LS	1	\$6,600	\$6,600
Subtotal					\$6,600
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$1,000
Preliminary Estimating Contingency (20%)					\$1,300
Engineering Allowance (15%)					\$1,000
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$10,000

BOAT LAUNCH - Erosion Protection of Shore East of Ramp

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Rip Rap	T	80	\$115	\$9,200
2	Geotextile	m3	80	\$10	\$800
Subtotal					\$10,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$1,500
Preliminary Estimating Contingency (20%)					\$2,000
Engineering Allowance (15%)					\$1,500
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$15,000

DREDGING

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Dredging	m3	800	\$50	\$40,000
Subtotal					\$40,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$6,000
Preliminary Estimating Contingency (20%)					\$8,000
Engineering Allowance (15%)					\$6,000
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$60,000

BOAT LAUNCH - Boat Ramp Replacement

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	500	\$450	\$225,000
2	Waler	m	64	\$350	\$22,400
3	Pile Cap	m	64	\$400	\$25,600
4	Tie Rods	each	14	\$1,500	\$21,000
5	End Pile	each	2	\$5,000	\$10,000
6	Concrete Ramp	m3	50	\$1,200	\$60,000
Subtotal					\$364,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$54,600
Preliminary Estimating Contingency (20%)					\$72,800
Engineering Allowance (15%)					\$54,600
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$550,000

BOAT LAUNCH - Retaining Wall for Protection of Shore East of Ramp

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	250	\$450	\$112,500
2	Waler	m	15	\$350	\$5,250
3	Pile Cap	m	15	\$400	\$6,000
4	Tie Rods	each	7	\$1,500	\$10,500
5	Deadman Anchor	each	7	\$1,800	\$12,600
6	Clear Stone Backfill	T	300	\$80	\$24,000
7	Guard	m	15	\$500	\$7,500
8	Closure Piles	each	2	\$2,500	\$5,000
Subtotal					\$183,350
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$27,500
Preliminary Estimating Contingency (20%)					\$36,700
Engineering Allowance (15%)					\$27,500
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$280,000

SITE PROTECTION - Groyne Wall - Floating Breakwater

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Floating Breakwater	LS	1	\$33,000	\$33,000
Subtotal					\$33,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$5,000
Preliminary Estimating Contingency (20%)					\$6,600
Engineering Allowance (15%)					\$5,000
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$50,000

SITE PROTECTION - Groyne Wall Replacement - Steel Sheet Pile Wall

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	160	\$450	\$72,000
2	Waler	m	20	\$350	\$7,000
3	Pile Cap	m	20	\$400	\$8,000
4	Access	LS	1	\$100,000	\$100,000
5	Battered Piles	m	70	\$500	\$35,000
6	Armour Stone	T	550	\$150	\$82,500
7	Core Stone	T	650	\$100	\$65,000
Subtotal					\$369,500
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$55,500
Preliminary Estimating Contingency (20%)					\$73,900
Engineering Allowance (15%)					\$55,500
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$560,000

SITE PROTECTION - Groyne Wall Replacement - Rock Fill Breakwater

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Armour Stone	T	1100	\$150	\$165,000
2	Core Stone	T	1300	\$100	\$130,000
Subtotal					\$295,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$44,300
Preliminary Estimating Contingency (20%)					\$59,000
Engineering Allowance (15%)					\$44,300
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$450,000



WEST BREAKWATER REPAIR - Pile Cap Repair

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Pile Cap	m	5	\$800	\$4,000
2	Access	LS	1	\$2,000	\$2,000
Subtotal					\$6,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$900
Preliminary Estimating Contingency (20%)					\$1,200
Engineering Allowance (15%)					\$900
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$9,000

NORTHEAST BREAKWATER REPAIR - Waler Repair

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Waler Repair/Replacement	m	6	\$1,000	\$6,000
2	Access	LS	1	\$2,000	\$2,000
Subtotal					\$8,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$1,200
Preliminary Estimating Contingency (20%)					\$1,600
Engineering Allowance (15%)					\$1,200
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$12,000

SITE PROTECTION - Northeast Breakwater Extension - Steel Sheet Pile Wall

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	160	\$450	\$72,000
2	Waler	m	20	\$350	\$7,000
3	Pile Cap	m	20	\$400	\$8,000
4	Access	LS	1	\$150,000	\$150,000
5	Battered Piles	m	70	\$500	\$35,000
6	Armour Stone	T	1000	\$150	\$150,000
7	Core Stone	T	1650	\$100	\$165,000
8	Movement of Existing Stone	m3	170	\$100	\$17,000
Subtotal					\$604,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$90,600
Preliminary Estimating Contingency (20%)					\$120,800
Engineering Allowance (15%)					\$90,600
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$910,000

SITE PROTECTION - Northeast Breakwater Extension - Rock Fill Breakwater

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Armour Stone	T	1300	\$150	\$195,000
2	Core Stone	T	2200	\$100	\$220,000
3	Access	LS	1	\$100,000	\$100,000
Subtotal					\$515,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$77,300
Preliminary Estimating Contingency (20%)					\$103,000
Engineering Allowance (15%)					\$77,300
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$780,000

SHORELINE PROTECTION - Steel Sheet Pile Wall (Per Linear Metre)

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	8	\$450	\$3,429
2	Waler	m	1	\$350	\$350
3	Pile Cap	m	1	\$400	\$400
4	Tie Rods	each	0.4	\$1,500	\$615
5	Deadman Anchor	each	0.4	\$1,800	\$738
6	Guard	m	1	\$500	\$500
7	Clear Stone Backfill	T	17	\$80	\$1,376
Subtotal					\$7,500
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$1,130
Preliminary Estimating Contingency (20%)					\$1,500
Engineering Allowance (15%)					\$1,130
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$11,300

PARKING LOT PROTECTION - Steel Sheet Pile Wall

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	280	\$450	\$126,000
2	Waler	m	35	\$350	\$12,250
3	Pile Cap	m	35	\$400	\$14,000
4	Tie Rods	each	15.0	\$1,500	\$22,500
5	Deadman Anchor	each	15.0	\$1,800	\$27,000
6	Guard	m	35.0	\$500	\$17,500
7	Clear Stone Backfill	T	520	\$80	\$41,600
Subtotal					\$261,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$39,000
Preliminary Estimating Contingency (20%)					\$52,000
Engineering Allowance (15%)					\$39,000
TOTAL WORK PLAN COST (rounded up to nearest thousand)					\$391,000

BEACH PROTECTION - Steel Sheet Pile Wall

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	960	\$450	\$432,000
2	Waler	m	120	\$350	\$42,000
3	Pile Cap	m	120	\$400	\$48,000
4	Tie Rods	each	50.0	\$1,500	\$75,000
5	Deadman Anchor	each	50.0	\$1,800	\$90,000
6	Guard	m	120.0	\$500	\$60,000
7	Clear Stone Backfill	T	2100	\$80	\$168,000
Subtotal					\$920,000
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$138,000
Preliminary Estimating Contingency (20%)					\$184,000
Engineering Allowance (15%)					\$138,000
TOTAL WORK PLAN COST (rounded up to nearest thousand)					\$1,380,000



BEACH ACCESS - Aluminum Stairway

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Aluminum Stairway	LS	1	\$6,700	\$6,700
Subtotal					\$6,700
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$1,000
Preliminary Estimating Contingency (20%)					\$1,300
Engineering Allowance (15%)					\$1,000
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$10,000

SOUTH SEAWALL - Localized Sheet Pile Repair

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	60	\$450	\$27,000
2	Waler	m	8	\$350	\$2,800
3	Pile Cap	m	8	\$400	\$3,200
4	Tie Rods	each	3	\$1,500	\$4,500
5	Clear Stone Backfill	T	450	\$80	\$36,000
6	Guard	m	20	\$500	\$10,000
7	Closure Piles	each	2	\$2,500	\$5,000
Subtotal					\$88,500
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$13,300
Preliminary Estimating Contingency (20%)					\$17,700
Engineering Allowance (15%)					\$13,300
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$140,000

SOUTH SEAWALL EXTENSION - Extension

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	40	\$450	\$18,000
2	Waler	m	5	\$350	\$1,750
3	Pile Cap	m	5	\$400	\$2,000
4	Tie Rods	each	2	\$1,500	\$3,000
5	Deadman Anchor	each	2	\$1,800	\$3,600
6	Clear Stone Backfill	T	250	\$80	\$20,000
7	Guard	m	5	\$500	\$2,500
8	Closure Piles	each	2	\$2,500	\$5,000
Subtotal					\$55,850
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$8,400
Preliminary Estimating Contingency (20%)					\$11,200
Engineering Allowance (15%)					\$8,400
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$90,000

SOUTH SEAWALL AND EXTENSION - Replacement

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Steel Sheet Pile	m ²	200	\$450	\$90,000
2	Waler	m	25	\$350	\$8,750
3	Pile Cap	m	25	\$400	\$10,000
4	Tie Rods	each	10	\$1,500	\$15,000
5	Clear Stone Backfill	T	825	\$80	\$66,000
6	Guard	m	25	\$500	\$12,500
7	Closure Piles	each	2	\$2,500	\$5,000
Subtotal					\$207,250
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$31,100
Preliminary Estimating Contingency (20%)					\$41,500
Engineering Allowance (15%)					\$31,100
TOTAL WORK PLAN COST (rounded up to nearest hundred)					\$320,000

SOUTH RETAINING WALL - Concrete Apron

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Concrete	m3	12	\$1,000	\$12,000
2	Granular A	T	40	\$40	\$1,600
Subtotal					\$13,600
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$2,000
Preliminary Estimating Contingency (20%)					\$2,700
Engineering Allowance (15%)					\$2,000
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$20,000

SOUTH RETAINING WALL - Railing

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Guard	m	29	\$500	\$14,500
Subtotal					\$14,500
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$2,200
Preliminary Estimating Contingency (20%)					\$2,900
Engineering Allowance (15%)					\$2,200
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$22,000



SITE DRAINAGE - Culvert Upgrades

Item #	Description	Unit	Estimated Quantity	Unit Price (\$)	Total Price (\$)
1	Culvert Removal	m	30	\$50	\$1,500
2	Excavation	m3	25	\$50	\$1,250
3	1200 mm Culvert	m	50	\$1,500	\$75,000
4	Granular Type II	T	48	\$40	\$1,920
5	Clear Stone and Geotextile	T	25	\$80	\$2,000
6	DICB	each	1	\$3,750	\$3,750
7	Riprap	m2	130	\$70	\$9,100
Subtotal					\$94,520
Contractor Overhead, Profit, Bonds and Insurance (15%)					\$14,200
Preliminary Estimating Contingency (20%)					\$19,000
Engineering Allowance (15%)					\$14,200
TOTAL WORK PLAN COST (rounded up to nearest ten thousand)					\$150,000

Appendix D

Site Drainage Calculations

Runoff Coefficient and Curve Number

Soil Type ¹	Surface Texture	Soil Group ²	Drainage	Comments
Clayey Loam	Silty Clay	C	Poor	Gentle slopes

¹ Based on MENDM Soil Surveys

² Based on Design Chart 1.08 (based on surficial geology maps), MTO Drainage Management Manual

Design Chart 1.09: Soil Conservation Service Curve Numbers (MTO Design Manual, 1995)

Hydrologic Soil Group	SCS Curve Number (AMCII)				
	Woodlot	Meadow	Crop	Pavement	Water
A	50	58	66	98	100
AB	54	62	70	98	100
B	58	65	74	98	100
BC	65	71	78	98	100
C	71	76	82	98	100
CD	74	79	84	98	100
D	77	81	86	98	100

*Note: Water SCS CN value changed from 50 to 100

Design Chart 1.07: Runoff Coefficients (MTO Design Manual, 1995)

Land Use & Topography ³	Soil Texture		
	Open Sand Loam	Loam or Silt Loam	Clay Loam or Clay
CULTIVATED			
Flat 0 - 5% Slopes	0.22	0.35	0.55
Rolling 5 - 10% Slopes	0.30	0.45	0.60
Hilly 10- 30% Slopes	0.40	0.65	0.70
PASTURE			
Flat 0 - 5% Slopes	0.10	0.28	0.40
Rolling 5 - 10% Slopes	0.15	0.35	0.45
Hilly 10- 30% Slopes	0.22	0.40	0.55
WOODLAND OR CUTOVER			
Flat 0 - 5% Slopes	0.08	0.25	0.35
Rolling 5 - 10% Slopes	0.12	0.30	0.42
Hilly 10- 30% Slopes	0.18	0.35	0.52
BARE ROCK	COVERAGE³		
	30%	50%	70%
Flat 0 - 5% Slopes	0.40	0.55	0.75
Rolling 5 - 10% Slopes	0.50	0.65	0.80
Hilly 10- 30% Slopes	0.55	0.70	0.85
LAKES AND WETLANDS	0.05		

Design Chart 1.08: Hydrologic Soil Groups (MTO Design Manual, 1995)

Map Ref.No.	Soil Type or Texture	Hydrologic Soil Group (Tentative)
	<u>Ground Moraine</u>	
1a	Usually sandy till, stony, varying depth. (Most widespread type in Shield).	Usually B (shallow); may be A or AB
1b	Clayey till, varying depth.	BC-C
	<u>End or Interlobate Moraine</u>	
2a	Sand & stones, deep. (May be rough topography).	A
2b	Sand & stones capped by till, deep.	A-C depending on type of till.
2c	Sand & stones, deep. (Smoother topography).	A
	<u>Kames & Eskers</u>	
3a	Sand & stones, deep. (May be rough topography).	A
3b	Sand & stones capped by till, deep.	A-C depending on type of till.
3c	Sand & stones, deep. (Smoother topography).	A
	<u>Lacustrine</u>	
4a	Clay & silt, in lowlands.	BC-C
4b	Fine sand, in lowlands.	AB-B
4c	Sand, in lowlands.	AB
4d	Sand (deltas & valley trains).	A-AB
	<u>Outwash</u>	
5	Sand, some gravel, deep.	A
	<u>Aeolian</u>	
6	Very fine sand & silt, shallow. (Loess)	B
	<u>Bedrock</u>	
7	Bare bedrock (normally negligible areas).	Varies according to rock type.

Drainage Conditions

Catchment Name	Catchment Area (ha)*	Percentage of Different Soil Types and Land Use in Catchment			Basin Weighted CN	Basin Weighted C**
		Clay Loam, Forested	Clay Loam, Cultivated	Pavement		
		C = 0.55	C = 0.55	C = 0.9		
		CN = 71	CN = 82	CN = 98		
Highland Culvert 1	23.97	17%	80%	3%	81	0.56
Highland Culvert 2 (Independent)	0.20	100%			71	0.55
Highland Culvert (Combined)	25.67	17%	80%	3%	81	0.56
Park 1	0.79	100%			71	0.55
Park 2	0.99	40%	60%		78	0.55
Park (Combined)	1.78	67%	33%		75	0.55
Laneway 1	2.14	92%	7%	1%	73	0.55
Highland Culvert With Park 1	26.46	18%	79%	3%	81	0.56

A-2 Time of Concentration

Bransby-Williams Method / Manning's Equation - Proposed Conditions

Bransby-Williams $t_c = 0.057 * L / (S_w^{0.2} * A^{0.1})$

Manning's Equation $V = \left(\frac{1.49}{n} \right) R^{\frac{2}{3}} \sqrt{S}$

where:

Tc = Time of Concentration (min)

A = Area (ha)

L = Hydraulic Length of Watershed (m)

S = Average Watershed Slope (m/m)

V= Velocity (m/s)

n= Manning's n (0.07)

R= Hydraulic Radius

Catchment ID	Catchment Area (ha)
Highland Culvert 1	24.0
Highland Culvert 2 (Independent)	0.2
Highland Culvert (Combined)	25.7
Park 1	0.8
Park 2	1.0
Park (Combined)	1.8
Laneway 1	2.1
Highland Culvert With Park 1	26.5

Rail ROW

Length (m)	Up Elevation (m)	Down Elevation (m)	Slope (%)	C
500	195.7	194.0	0.3%	0.55
200	194.0	182.0	6.0%	0.55
500	195.7	194.0	0.3%	0.55
40	194.8	183.0	29.5%	1.55
135	194.8	181.0	10.2%	2.55
175	194.8	181.0	7.9%	3.55
225	192.7	183.0	4.3%	4.55
500	195.7	194.0	0.3%	4.55

Ditch

Length (m)	Velocity (m/s)	Up Elevation (m)	Down Elevation (m)	Slope (%)	Tc (min)
380	0.82	194.0	182.2	3.1%	72
20	1.64	182.0	179.5	12.5%	24
400	0.88	194.0	179.5	3.6%	72
200	0.46	183.0	181.0	1.0%	10
25	1.31	181.0	179.0	8.0%	12
25	1.31	181.0	179.0	8.0%	16
50	0.80	183.0	181.5	3.0%	23
400	0.88	194.0	179.5	3.6%	72

Rational Method- Flows and Comparison

Assumptions of this method:

- the peak rate of runoff, Q, is determined by using an average rainfall intensity, i, over the entire watershed with a time duration equal to the watershed time of concentration, tc;
- the peak rate of runoff is assumed to have a return period equal to that of the intensity-duration-frequency curve;
- the rainfall intensity, i, remains constant for the computed time of concentration, tc, and is uniform across the drainage area;
- the runoff coefficient, C, does not vary over the duration of the storm.

Existing Conditions

Catchment Name	Area (ha)	Tc (min)	Intensity - TRCA Wet Weather Flow IDF Curve (24 hr)						Runoff Coefficient C	Flow Estimate - Q = CiA					
			i ₂ (mm/hr)	i ₅ (mm/hr)	i ₁₀ (mm/hr)	i ₂₅ (mm/hr)	i ₅₀ (mm/hr)	i ₁₀₀ (mm/hr)		Q ₂ (m ³ /s)	Q ₅ (m ³ /s)	Q ₁₀ (m ³ /s)	Q ₂₅ (m ³ /s)	Q ₅₀ (m ³ /s)	Q ₁₀₀ (m ³ /s)
Highland Culvert 1	23.97	72	22.5	29.2	33.5	39.1	43.1	47.1	0.56	0.84	1.09	1.25	1.46	1.61	1.76
Highland Culvert 2 (Independent)	0.20	24	48.2	62.7	72.1	84.2	93.0	101.8	0.55	0.01	0.02	0.02	0.03	0.03	0.03
Highland Culvert (Combined)	25.67	72	22.7	29.4	33.7	39.3	43.3	47.4	0.56	0.91	1.17	1.35	1.57	1.73	1.89
Park 1	0.79	10	85.8	112.0	129.0	150.8	166.8	182.7	0.55	0.10	0.14	0.16	0.18	0.20	0.22
Park 2	0.99	12	74.6	97.4	112.0	131.0	144.8	158.6	0.55	0.11	0.15	0.17	0.20	0.22	0.24
Park (Combined)	1.78	16	63.1	82.2	94.6	110.5	122.1	133.8	0.55	0.17	0.22	0.26	0.30	0.33	0.36
Laneway 1	2.14	23	48.7	63.4	72.9	85.1	94.0	103.0	0.55	0.16	0.21	0.24	0.28	0.31	0.34
Highland Culvert With Park 1	26.46	72	22.7	29.4	33.8	39.4	43.4	47.5	0.56	0.94	1.21	1.39	1.62	1.79	1.96

Highland Glen Intensity (MTO IDF)

$I = A(T)^B$

Return Period [yr]	A	B
2	25.6	-0.681
5	33.2	-0.685
10	38.1	-0.687
25	44.4	-0.688
50	49.0	-0.689
100	53.6	-0.690

Ontario IDF CURVE LOOKUP
Terms and Conditions | Coordinate Selection | About

Active coordinate
43° 5' 45" N, 82° 7' 14" W (43.095833, -82.120833) Modify selection
Retrieved: Wed, 10 Mar 2021 22:24:35 GMT

Map options: Modify selection | Show/hide gauging stations | Re-center selection
Location summary
These are the locations in the selection.
IDF Curve: 43° 5' 45" N, 82° 7' 14" W (43.095833, -82.120833)
Results
An IDF curve was found.
Coordinate: 43.095833, -82.120833
IDF curve year: 2096

Existing Highland Glen Culverts Minor and Major Deign Flow Hydraulics

City	Name	Water-course	Drainage System	Recommendation	Type	Mat'l	Diameter (Span)	Rise	Cover	Length	Opening Area	Qdesign/B	Critical Depth ¹	TW Depth ²	alpha	Flow Area	Velocity	WP	R	Kc ³ (friction)	Depth after outlet loss	Fall in culvert ⁴	Depth at US side	Average Depth	d/D	Head Loss ⁵	Depth US of Inlet under OUTLET control ⁶	Clearance under OUTLET control	INLET control full capacity	INLET HW/D from Chart ⁷	Depth US of Inlet under INLET control	Clearance under INLET control	Governing Control	HW / D	HW	Clearance	Flood Depth Criteria ⁸	OVER-TOP ROAD?	Free-board to Road	Freeboard Condition ⁹	EXISTING CONDITIONS - DESIGN FLOW HYDRAULIC ASSESSMENT	
							(mm)	(mm)	(m)	(m)	(m ²)	(m ³ /s)	(m)	(m)	(-)	(m ²)	(m/s)	(m)	(m)	(-)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m ² /s)	(m / m)	(m)	(m)	(m)	(m/m)	(m)	(m)	(m)			(m)		
Highland Glen	Highland Culvert 1	Ditch	WC	Replace	CL	CSP	900		0.80	24	0.64	10-year	1.25	0.66	0.66	1.36	0.60	2.09	2.22	0.27	0.06	0.88	0.50	0.73	0.80	0.89	0.77	0.93	-0.03	0.83	1.26	1.13	-0.23	INLET	1.26	1.13	-0.23	OK	No	0.57	OK	OK
	Highland Culvert 1	Ditch	WC	Replace	CL	CSP	900		0.8	24	0.64	100-year	1.76	0.78	0.84	0.00	0.64	2.76	2.83	0.23	0.08	1.23	0.50	1.50	1.36	1.51	1.51	1.85	-0.95	0.83	2.10	1.89	-0.99	INLET	2.10	1.89	-0.99	OK	Yes	-0.19	Insufficient	Insufficient
	Highland Culvert 2	Ditch	WC	Replace	CL	CSP	1200		0.80	6	1.13	10-year	1.35	0.63	0.63	2.97	0.51	2.66	1.78	0.28	0.06	0.99	1.00	0.13	0.56	0.46	0.82	0.45	0.75	1.90	0.78	0.94	0.26	INLET	0.78	0.94	0.26	OK	No	1.06	OK	OK
	Highland Culvert 2	Ditch	WC	Replace	CL	CSP	1200		0.80	6	1.13	100-year	1.89	0.75	0.75	3.07	0.74	2.55	2.44	0.30	0.06	1.08	1.00	0.19	0.63	0.52	0.74	0.49	0.71	1.90	0.99	1.19	0.01	INLET	0.99	1.19	0.01	OK	No	0.81	OK	OK

*Highland Culvert 2 is conveying the combined flows of the Culvert 1 and Culvert 2 catchment areas, not the independent flow

NOTES:

- 1) Critical Depth in Circular Pipes
 $d_c = (1.01/D^{0.26})(Q^2/g)^{0.25}$
- 2) Tailwater Depth
If $D_c < 0.75D$, $TW = D_c$
If $D_c > 0.75D$, $TW = (d_c + D) / 2$
- 3) Friction Calculation
 $K_c = \frac{19.6n^2}{R^{4/3}}$
Roughness coefficients (n):
CSP 0.024
Concrete 0.013

- 4) Fall in Culvert
Assumed 0.2 m unless identified from ETR
- 5) Head Losses
entrance + friction + velocity = $(V^2/2g)(K_{entrance} + K_{expansion} + K_c \cdot L)$
Entrance and Velocity Head K-values:
Entrance (circular CSP) $K_{entrance} = 0.9$
Entrance (Concrete Box) $K_{entrance} = 0.5$
Velocity $K_{expansion} = 1.0$

- 6) Outlet Control
= Tailwater (TW) + Head Loss (HL) - Fall in Culvert (assumed 0.2 m if no invert detail available)

- 7) Inlet Control
Determined by Design Charts 2.31 and 2.32 (MTO Drainage Management Manual) (Not applied to flow < 25% full capacity)

- 8) Flood Depth Criteria:
Stream = $HW/D < 1.5$
Drainage = n/a
Ditch = $HW < 1.0$ m

- 9) Freeboard Criteria
Stream = 1.0 m to highway travelling lane
Ditch ≥ 0.3 m to top of highway sub-grade of upstream culvert (assumes 0.39 m from travelling lane to top of subgrade), if Highway elevation relative to culvert is unknown = n/a

Proposed Highland Glen Culverts Minor and Major Deign Flow Hydraulics

City	Name	Water-course	Drainage System	Recommendation	Type	Mat'l	Diameter (Span)	Rise	Cover	Length	Opening Area	Qdesign/B	Critical Depth ¹	TW Depth ²	alpha	Flow Area	Velocity	WP	R	Kc ³ (friction)	Depth after outlet loss	Fall in culvert ⁴	Depth at US side	Average Depth	d/D	Head Loss ⁵	Depth US of Inlet under OUTLET control ⁶	Clearance under OUTLET control	INLET control full capacity	INLET HWD from Chart ⁷	Depth US of Inlet under INLET control	Clearance under INLET control	Governing Control	HW / D	HW	Clearance	Flood Depth Criteria ⁸	OVER-TOP ROAD?	Free-board to Road	Freeboard Condition ⁹	EXISTING CONDITIONS - DESIGN FLOW HYDRAULIC ASSESSMENT	
							(mm)	(mm)	(m)	(m)	(m ²)	(m ³ /s)	(m)	(m)	(-)	(m ²)	(m/s)	(m)	(m)	(-)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m ² /s)	(m / m)	(m)	(m)	(m)	(m/m)	(m)	(m)			(m)			
Highland Glen	Highland Culvert (Combined)	Ditch	WC	Replace	CL	CSP	1200		0.50	52	1.13	10-year	1.35	0.63	0.63	2.86	0.47	2.89	1.72	0.27	0.06	1.06	2.50	-0.02	0.52	0.43	2.23	0.36	0.84	1.90	0.78	0.94	0.26	INLET	0.78	0.94	0.26	OK	No	0.76	OK	OK
	Highland Culvert (Combined)	Ditch	WC	Replace	CL	CSP	1200		0.50	52	1.13	100-year	1.89	0.75	0.75	3.07	0.54	3.51	1.84	0.29	0.06	1.38	2.50	0.78	1.08	0.48	3.10	1.34	-0.14	1.90	0.99	1.19	0.01	OUTLET	1.12	1.34	-0.14	OK	No	0.36	OK	OK
	Highland Culvert With Park 1	Ditch	WC	Replace	CL	CSP	1200		0.50	52	1.13	100-year	1.39	0.64	0.64	2.89	0.48	2.92	1.74	0.27	0.06	1.08	2.50	0.00	0.54	0.44	2.25	0.39	0.81	1.90	0.80	0.96	0.24	INLET	0.80	0.96	0.24	OK	No	0.74	OK	OK
	Highland Culvert With Park 1	Ditch	WC	Replace	CL	CSP	1200		0.50	52	1.13	100-year	1.96	0.76	0.76	2.95	0.63	3.09	2.00	0.32	0.05	1.25	2.50	0.07	0.66	0.55	2.25	0.51	0.69	1.90	1.01	1.21	-0.01	INLET	1.01	1.21	-0.01	OK	No	0.49	OK	OK
	Park 1 Culvert	Ditch	WC	Replace	CL	CSP	500		0.50	52	0.20	10-year	0.16	0.27	0.27	2.23	0.15	1.03	1.01	0.15	0.14	0.32	0.30	0.42	0.37	0.72	0.50	0.47	0.03	0.20	0.82	0.41	0.09	OUTLET	0.94	0.47	0.03	OK	No	0.53	OK	OK
	Park 1 Culvert	Ditch	WC	Replace	CL	CSP	500		0.50	52	0.20	100-year	0.22	0.32	0.32	0.40	0.20	1.13	1.47	0.13	0.17	0.39	0.30	0.64	0.51	0.99	0.68	0.70	-0.20	0.20	1.05	0.53	-0.03	OUTLET	1.40	0.70	-0.20	OK	No	0.30	OK	OK

NOTES:

- 1) Critical Depth in Circular Pipes
 $d_c = (1.01/D^{0.26})(Q^2/g)^{0.25}$
- 2) Tailwater Depth
If $D_c < 0.75D$, $TW = D_c$
If $D_c > 0.75D$, $TW = (d_c + D) / 2$
- 3) Friction Calculation
 $K_c = \frac{19.6n^2}{R^{4.75}}$
Roughness coefficients (n):
CSP 0.024
Concrete 0.013

- 4) Fall in Culvert
Assumed 0.2 m unless identified from ETR
- 5) Head Losses
entrance + friction + velocity = $(V^2/2g)(K_{entrance} + K_{expansion} + K_c \cdot L)$
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Ditch ≥ 0.3 m to top of highway sub-grade of upstream culvert (assumes 0.39 m from travelling lane to top of subgrade), if Highway elevation relative to culvert is unknown = n/a

Ditch Capacity Calculations

Manning's Formula:

$$Q = VA = \left(\frac{1.00}{n} \right) AR^{\frac{2}{3}} \sqrt{S}$$

where: Q = Flow Rate (m^3/s)

V = Velocity (m/s)

A = Flow Area (m^2)

n = Manning's Roughness Coefficient

R = Hydraulic Radius (m)

S = Channel Slope (m/m)

Design		Park 1 Ditch	Park 1 Ditch	Outfall 1 (Park Combined)	Outfall 1 (Park 2)	Outfall 2 (Laneway)
Details		V-Ditch	Trapezoidal channel with 0.5 m bottom width	V-ditch	V-ditch	V-ditch
100-year Flow	m ³ /s	0.22	0.22	0.36	0.24	0.34
Bottom Width	m	0	0.5	0	0	0
Side Slope 1	m/m	2	2	3	3	3
Side Slope 2	m/m	2	2	3	3	3
Top Width	m	2.20	2.18	1.44	1.20	1.68
Depth	m	0.55	0.42	0.24	0.20	0.28
Cross-sectional Area	m ²	0.61	0.56	0.17	0.12	0.24
Wetted Perimeter	m	2.5	2.4	1.5	1.3	1.8
Mannings n		0.1	0.1	0.03	0.03	0.03
Channel Slope	m/m	0.01	0.01	0.080	0.080	0.030
Mannings Q	m ³ /s	0.24	0.22	0.38	0.24	0.35
Velocity	m/s	0.39	0.38	2.21	1.96	1.50
Riprap Sizing	mm	n/a	n/a	350	300	150

About AECOM

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM had revenue of approximately \$17.4 billion during fiscal year 2016. See how we deliver what others can only imagine at aecom.com and [@AECOM](https://twitter.com/AECOM).

Contact
John Pucchio, P.Eng.
Senior Structural Engineer
T +1-519-963-5880
E john.pucchio@aecom.com

Staff will be working on a review of the lands and will determine whether any may be considered as excess. This review will also include a Land Securement Strategy and will address impacts of the operation of the McKeough Dam, severance requirements, Ministerial approval, loss of annual revenue, and the need for comparable offers.

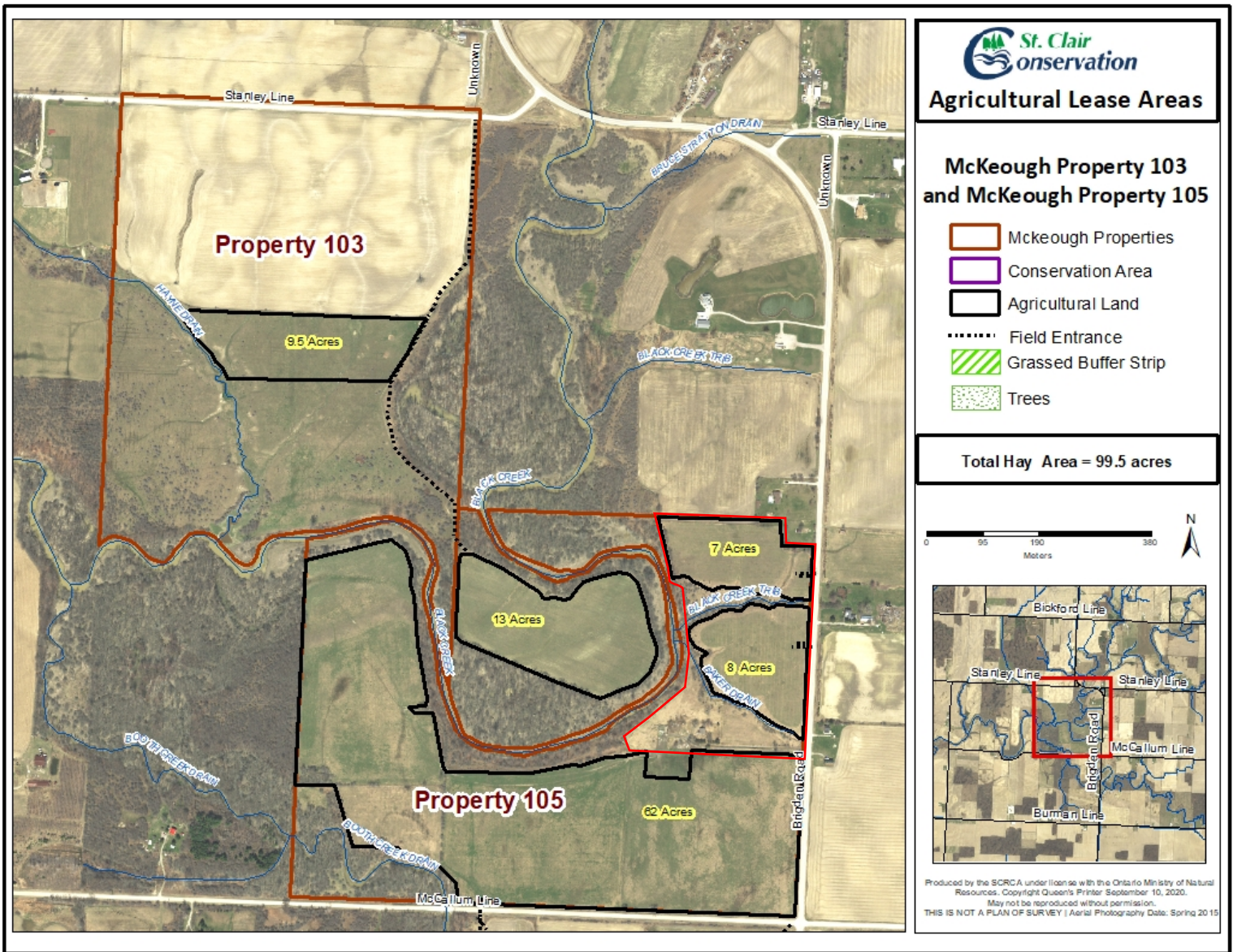
Strategic Objectives(s):

Goal 2 – Protect, manage, and restore our natural systems including woodlands, wetlands, waterways, and lakes

Management of Authority Owned Lands: Through the completion of Property Management Plans, the Authority continues to manage its lands to balance revenue production and effective management of woodlands, wetlands and biodiversity.

Financial Impact:

Loss of annual revenue.



March 7, 2021

St. Clair Region Conservation Authority
205 Mill Pond Crescent
Strathroy, Ontario
N7G 3P9

Dear Mr. Brian McDougall,

I am writing this letter to express my interest in purchasing a parcel of land from the St. Clair Region Conservation Authority. The parcel I am interested is 1843 Bridgen Rd. My intentions for this parcel would be to build and also utilize the pasture land for grazing a couple of recreational livestock animals. Below I have attached a map outlining the parcel in which I am interested in. If there are any further questions please feel free to reach out to me at anytime.

Thank you,

A handwritten signature in black ink that reads "Leah Bogaart". The signature is written in a cursive style with a large, stylized initial 'L'.

Leah Bogaart
226-627-1807
leah.bogaart@gmail.com



SCRCA Staff Understanding of Chronology of Events Related to Fees:

- June 15, 2020 – SCRCA staff spoke to landowner on the phone. He has plans into the Municipality, would like to build a new foundation and second storey. Staff sent Roman an email to send plans for SCRCA review. Note: works had already been completed.
- September 15, 2020 – SCRCA staff were circulated on a minor variance application regarding front and side yard encroachments. SCRCA has no concern provided a permit is obtained.
- November 24, 2020 – Minor variance deferred to December 10 meeting. SCRCA comments remain unchanged. Variance related to the balcony of the house;
- December 11, 2020 – SCRCA Staff collected payment
- December 11, 2020 – SCRCA staff issued a permit for the works. Works are already completed. Condition of permit is to have certification from an Ontario Land Surveyor that lowest openings of 177.7m GSC are met. Flood proofing requirements were included on drawings submitted with application;
- December 15, 2020 – Received notice from landowner that they would like to appeal the fee, SCRCA Staff advised of fee appeal procedure.
- January 11, 2021 – SCRCA staff received survey showing the finished floor elevation at 176.89m
- February 18, 2021 – changes to the plans to show a hobby shop on the first floor, and living quarters on the second floor;
- May 20, 2021 – SCRCA staff reviewed changes, if lowest opening cannot be met, then further engineering will be required to ensure that the building is able to withstand hydrostatic pressure, etc. Living space above garage requires the structure itself to be engineered to ensure no loss to property or life during flood event.

SCRCA Application Fee

The attached map shows the areas affected by SCRCA regulations. The subject property is located entirely within the estimated engineered floodplain and within the meander belt (erosion hazard) of an Unnamed Drain. Development is permitted in this area provided the lowest opening into the dwelling is raised to 177.7m GSC. If this cannot be obtained, further engineering is required to ensure that the building can withstand hydrostatic pressure and that the electrical/mechanical/heating is appropriately flood proofed.

SCRCA Review and Approval

When reviewing an application at the subject location, staff of the SCRCA can approve the proposed works if the dwelling is appropriately flood proofed to 177.7m GSC. It was a requirement that this is included on construction drawings and details. The condition of the permit was that lowest openings are verified by an Ontario Land Surveyor. SCRCA regulations staff completed a detailed review of all available information, which included; past files/documentation in the area, detailed SCRCA Hazard Mapping, and the submitted application and detailed plans Upon completion of this review it was determined the proposed works met the SCRCA flood proofing requirements, as plans showed lowest openings into the dwelling would meet 177.7m GSC. Formal written permission documentation was finalized and sent to the landowner and the internal database management system was updated. Staff of the SCRCA applied the Minor Permit B fee doubled – definition: medium scale, primary

structures and/or consistent with policy - from the 2021 Board Approved Fee Schedule for the project size/scale, level of risk, and location in relation to the hazards and doubled due to works having been completed without SCRCA permission. Upon getting the works verified by an Ontario Land Surveyor, the lowest openings (i.e. condition of permit) could not be met and the landowner did not want to obtain further engineering to support the dwelling, therefore the landowner sold the property 'as is' and would like a refund on the fee.

From: Ula Krzewina
Sent: Sunday, December 20, 2020 4:48 PM
To: stclair@scrca.on.ca <stclair@scrca.on.ca>
Subject: Appeal of fee payment

Item 9.1 (b)

To General Manager of St. Clair Conservation Authorities

I would like to appeal to the Authorities of Directors amount for my building permit -file references #R#2020-0341 received on Dec11/2020. I was charged double . I started this project in October 2018 after I received a permit from Chatham Kent Municipality (PRBD201801627-BD1) . When I completed foundation and raised a cottage, I was told by Chatham Kent Municipality that I need another permit from Conservation Authority. I was not informed before. Kindly ask you to consider my application.
Sincerely Roman Krzewina

From: Melissa Deisley <mdeisley@scrca.on.ca>
Sent: Monday, July 12, 2021 3:03:52 PM
To: Ula Krzewina <ula@live.ca>
Subject: FW: Appeal of fee payment

Hi Roman,

We have received your email. A permit was granted for the subject property, therefore we cannot refund the permit application fee.

The below email you sent to the General Manager indicates that you wish to appeal the entire fee, is this correct? I will pass it along again to the General Manager and it needs to be reviewed by our Board of Directors, which will happen at our next Board Meeting (which is in September).

Thank you,
Melissa

Melissa Deisley
Regulations Coordinator

St. Clair Region Conservation Authority
205 Millpond Cres., Strathroy, ON N7G 3P9
Tel: 519-245-3710 Ext. 251 Fax: 519-245-3348
Website: www.scrca.on.ca



"Working together for a better environment"

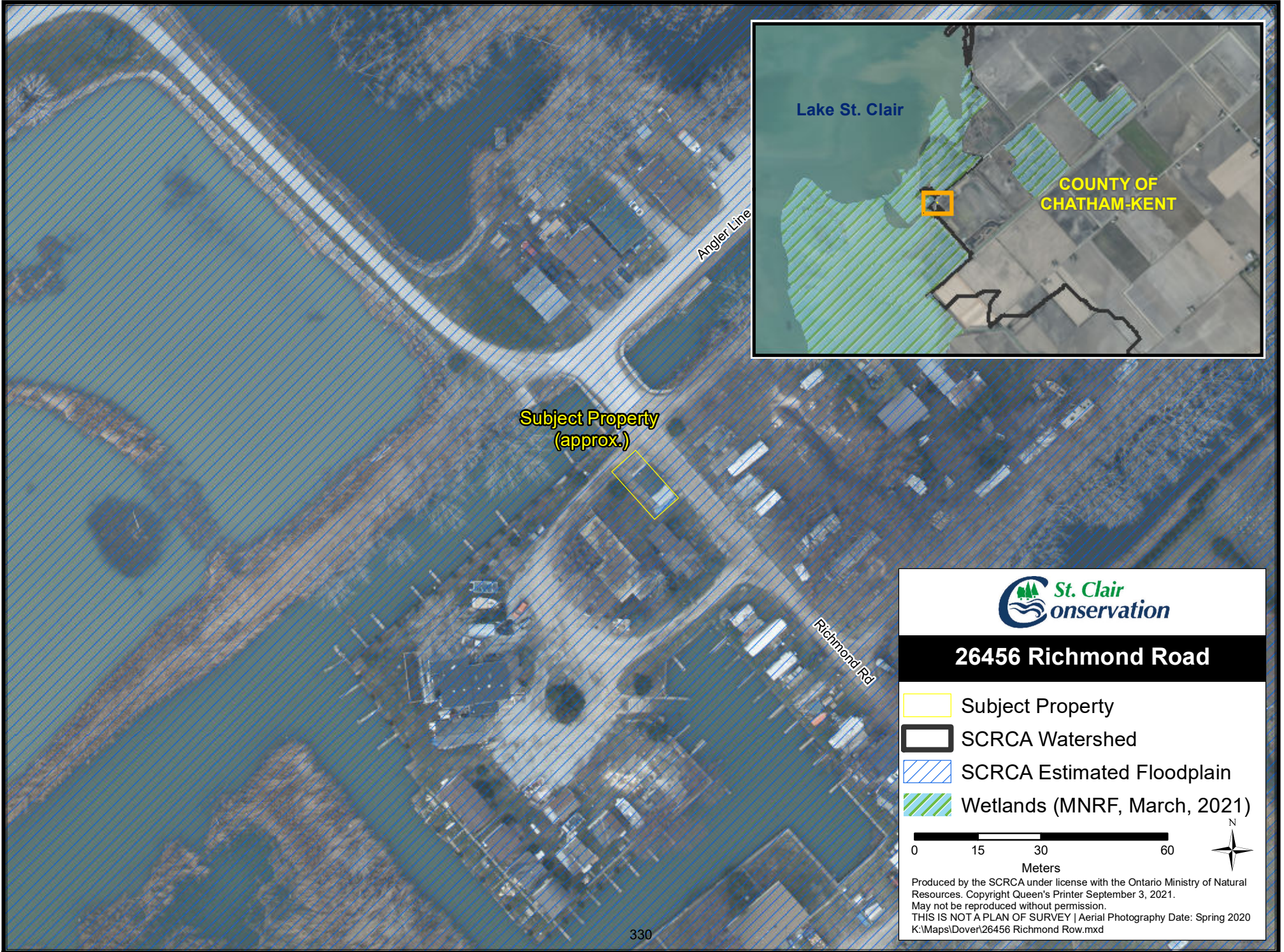
Thank you for answering. If possible we would like appeal the entire fee as we were unable fulfill requirements. It was not our fault that application was filled out after job was done. We were not informed that we need two permits from two different institutions . We received permit from Municipalities of Chatham-Kent and followed all requirements. I believe that if two different permits are needed then one should not be issued without the other or I should be informed before starting my project. We received refund from Municipalities . Thank you. Regards Roman Krzewina

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From: Ula Krzewina
Sent: Friday, June 18, 2021 2:22 PM
To: Melissa Deisley <mdeisley@scrca.on.ca>
Subject: Case#R2020-0341

Good Afternoon Melisa

Due to the difficulties in obtaining the appropriate permit, the property was sold in the "as is" condition. I would like to withdraw my application for a cottage adaptation permit at 26456 Richmond Road, Dover Center and kindly ask for a refund for this application. Regards Roman



St. Clair Conservation

26456 Richmond Road

0 15 30 60 Meters

Produced by the SCRCA under license with the Ontario Ministry of Natural Resources. Copyright Queen's Printer September 3, 2021. May not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY | Aerial Photography Date: Spring 2020 K:\Maps\Dover\26456 Richmond Row.mxd

this seawall remain in place, since the benefits far exceed the negative effects, as its removal would place the existing house closer to the stable slope and erosion hazards.

It is not anticipated that there will be any significant negative effects to the sediment transport rate or any negative effects to adjacent properties since this shorewall was installed along the original toe of existing bluff which has experienced significant erosion and will continue to erode. The seawall is located inland of the beach processes and waves will only reach this shorewall during storm wave events combined with a high water level.

June 4, 2021 – Received letter from our solicitor, Grant Inglis of Scot Petrie LLP.

Further to our earlier email, please find another copy of the report on the above noted property prepared by Chal Eng. Consulting Engineers which in essence, provides the engineering opinion that it is more beneficial to leave the work in place rather than remove it.

Based on this opinion, it is our recommendation that the Authority withdraw the charges on this file against the named persons.

SCOTT PETRIE LLP

LAW FIRM

Barry R. Scott, LL.B., AGO (ONT.)
Angelo L. D'Asciano, BA, LL.B., LL.M.
Marcia J. Oliver, BA (Hons), LL.B., Q.A.S.
John D. Goudy, BA (Hons), LL.B., LL.C.
Jeff Van Buren, BA (Hons), LL.B.

J.H. (Kim) Little, LL.B., BA
Ian S. Wright, BA, LL.B.
Kristi M. Sargeant-Kerr, BA (Hons), LL.B.
E. Glenn Hines, J.D., LL.B.
Erin M. Naylor, LL.B., LL.M.

R. Grant Inglis, BA, LL.B.
David S. Swift, BA, LL.B.
Jeffrey A. Bell, BA (Hons), LL.B.
Practising through a professional corporation
Corporation spécialisée en droit

Ext 242
e-mail: ginglis@scottpetrie.com

June 4, 2021

mdeisley@scrca.on.ca
St. Clair Region Conservation Authority
205 Mill Pond Cr.
Strathroy, Ontario
N7G 3P9

Attn: Melissa Deisley

Dear Ms. Deisley:

Re: [REDACTED]
4178 and 4184 Bluepoint Drive, Plympton-Wyoming, Ontario

Further to our earlier email, attached please find another copy of the report on the above-noted property prepared by Chall.Eng. Consulting Engineers which in essence, provides the engineering opinion that it is more beneficial to leave the work in place rather than remove it.

Based on this opinion, it is our recommendation that the Authority withdraw the charges on this file against the named persons.

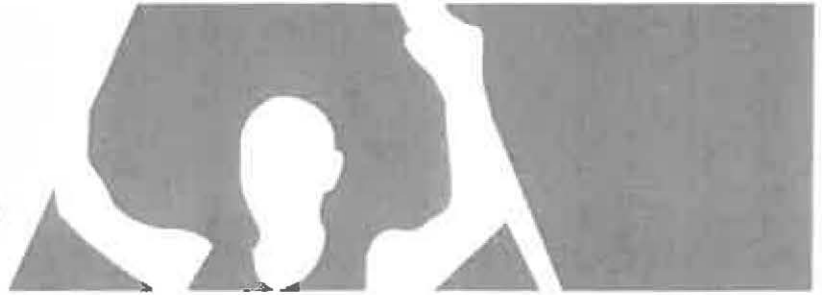
If there are any questions, please do not hesitate to call myself or Trudy Mauth.

Yours very truly



R. Grant Inglis
RGI:tlp
Encls.

D:\data\TPetrie\SCRCA\letter to melissa deisley 4178 & 4184 Bluepoint Drive.docx.docx



CHALL.ENG.CORPORATION | CONSULTING ENGINEERS | PHONE: 519-979-7333 | WEB: www.cec14.com | FAX: 519-979-7331 | email: cec@cec14.com

Proj. No. 220323
January 4, 2021

VIA EMAIL

[REDACTED]

Shoreline Engineering Works Assessment Report
Shoreline Protection Assessment

[REDACTED]
4178 and 4184 Bluepoint Drive
Plympton-Wyoming, Ontario
Lake Huron

Dear Mr [REDACTED]

Further to your request of October 16, 2020, we prepared this report and attached drawing for the purpose to assist you in the legal issue involving the installation of an interlocking steel sheet pile shorewall at the above mentioned properties without a St. Clair Region Conservation Authority (SCRCA) permit being obtained.

You have further advised us that a new steel sheet pile shorewall was installed across the north side of these two properties approximately five years ago without Permits being in place. The St Clair Region Conservation Authority (SCRCA) has required that you engage a Coastal Engineer to assess the steel shorewall installation and prepare a Shoreline Engineering Works Assessment Report with our professional opinion in regards to whether it is better to leave the now existing shorewall in place rather than remove it, with the consideration of the possible positive and negative effects that this shorewall will have on these properties and on the adjacent properties.

We attended at the site and the up drift and down drift properties on November 12, 2020, to take measurements, elevations, photographs, and document site conditions and features to assist in our shoreline engineering analysis and assessment of the new shorewall. In addition to the new shorewalls on these two properties, the shoreline area consisted of a steel sheet groyne that had been installed near the west property line. Specifically, we reviewed the current erosion patterns and processes with particular attention to the record high water level in Lake Huron.

Our inspection and review revealed the following information concerning the characteristics and features of this shoreline area as related to the two subject properties:

- The existing interlocking steel sheet pile shorewall materials (see appended materials list) and top elevation of 178.83 metres (586.8 feet) are appropriate to this location (Photograph Nos. 2 and 3). The 1:100 year flood elevation is listed as 178.0 metres (584.0 feet) in the Lake Huron Shoreline Management Plan Update – 2011, prepared by W.F. Baird & Associates Coastal Engineers Ltd.
- These properties are located in Blue Point with this stretch of shoreline having the highest erosion rates along the SCRCA shoreline. AARR (m/year - 0.41 to 0.56) (W.F. Baird & Associates Coastal Engineers Ltd.) and (SCRCA, 2004).
- From Gustin Grove to Brights Grove that includes Blue Point, the shoreline typically consists of till bluffs, ranging in height from approximately 5 m (16 feet) to approximately 20 m (66 feet). The bluffs are fronted by narrow sand beaches, which provide limited protection for the bluffs as a result of erosion from wave action, particularly during the current record high water levels. Much of the reach of this shoreline area is protected with groynes and seawalls. (W.F. Baird & Associates Coastal Engineers Ltd.)
- Along these cohesive shorelines, erosion of the bluffs is controlled by erosion of the nearshore lakebed. In areas with higher erosion rates, the nearshore lakebed profile is composed of a more erodible till (St. Joseph till) and in areas where the bluff is more stable, it is composed of the stronger Rannoch till (Baird, 1992).
- Guidelines for the typical expected design life of shoreline structures are outlined in the *Technical Guide* (MNR, 2001a):
 - "In areas of moderate recession rates (i.e., 0.3 m/yr to 0.7 m/yr), it may be appropriate to consider a structure design life in the order of 15 to 25 years for sound, well designed, properly constructed and well maintained structures. Due to the ongoing nearshore erosion and the potential for undermining, shoreline managers should be cautious about accepting a claim for a design life greater than 25 years. For example, along cohesive shores there are practical construction limitations to the amount of excavation that can be done to sufficiently embed the toe of the structure to provide downcutting protection." We assessed a remaining design life of 30 years, approx. 8 feet embedment for tied back wall.
- Our review of the past and current erosion patterns and processes with particular attention to the record high water levels that have been occurring in Lake Huron for the past two years (2019 and 2020) revealed beach widths of 68 feet in 2003, 53 feet in 2006, and 15 feet in 2015, as shown in the attached aerial photos Nos. 1 to 3 that show approximately 500 feet of the shoreline

- The existing shoreline property west of 4178 consisted of a steel groyne and steel shorewall. The new steel shorewall has had a minimal affect on west property. See Photo Nos. 5 and 6.
- The existing shoreline property east of 4148 had an unprotected sand beach. The current erosion inland was observed to be approximately 7 metres (23 feet) into bluff from the vertical face of new steel shorewall. The new steel shorewall on east side of unprotected beach has an angular steel shorewall section design at the return wall and the westerly subject steel wall has 90 degree return. No visual significant difference in bluff erosion at the unprotected beach was observed that could be attributable to the new steel wall design and construction. See Photo No. 4. In addition, the new steel shorewall was observed to have minimal adverse affects on the unprotected beach.
- Moving the two existing houses to be beyond the erosion and stable slope zones is not possible, since these properties do not have the depth to accommodate a house move.
- The existing houses are within the existing stable slope zone, with or without the new steel shorewall installation.
- Existing houses are beyond the 100 year erosion zone with the new steel wall installation and within the 100 year erosion zone without the new steel wall.
- The existing houses are at a significantly increased risk of being damaged by bluff and beach erosion without the new steel shorewall being in place.

Based on the results of our coastal engineering analysis and review, it is our professional opinion that the new steel shorewall, which was recently installed on these two properties, is suitable and proper for this shoreline area. Therefore, it is our recommendation that this shorewall remain in place, since the benefits far exceed the negative effects, as its removal would place the existing houses closer to the stable slope and erosion (lake) hazards.

This opinion is based on our shoreline analysis that determined that it is not anticipated that there will be any significant negative effects to the sediment transport rate or any negative effects to adjacent properties, since this shorewall was installed along the original toe of existing bluff, of which the easterly section of the exposed bluff has experienced significant erosion and will continue to erode. The shoreline effects are significantly reduced with the westerly groyne being in place as there is no significant beach erosion on the lake side of the new shorewall. In addition, this shorewall is located inland of the beach processes and waves will only reach this shorewall during storm wave events combined with a high water level.

██████████
4178 and 4184 Bluepoint Drive

January 4, 2021

We trust that this is the information you require. Please call if we can be of any additional assistance to you in this matter.

Yours truly,
Chall. Eng. Corporation,
Consulting Engineers



H. Richard Patterson, M.A. Sc., P. Eng.,
President

Encl. Drawing (Figure 1)
Aerial Photos (3)
Photographs (6)
Materials List (1)



The Planning & Regulations Department is proposing to increase permit application, Planning Act application and technical report review fees by a minimum of 10% for those fees generally incurred by private landowners, and up to 20% for those fees generally incurred by developers for major development. This would generate approximately \$35,000 in additional revenue.

These proposed increases in both levy and fees would allow for a staged approach in hiring new staff. This would allow us to hire a minimum of 1 new staff member in the Planning & Regulations Department in 2022.

Meeting Date: September 16, 2021 **Item 10.2**
Report Date: July 7, 2021
Submitted by: Greg Wilcox

Subject: Proposed 2022 Conservation Area Fees

Recommendation:

That the Board of Directors approves the 2022 Conservation Areas Proposed Fee Schedule.

Conservation Area Fee Increases

Fee increases are a result of increasing staffing costs, maintenance, park upgrades, and general cost increases. Fee increases are also required to ensure financial reserves are maintained at levels sufficient to undertake large capitals expenditures (septic system updates, road improvements, etc.) when required. With the proposed increases our rates remain at or below most local private and regional Conservation Authority campgrounds.

Fee Comparison:

The table below compares seasonal and transient camping fees of other Conservation Authorities, the Provincial Parks, and some local private campgrounds.

2021 Camping Fee Comparison July 15, 2021						
Campground	30 Amp Seasonal Rate including Winter Storage, Taxes, and Hydro	Overnight Serviced (per night)	Overnight Un-serviced (per night)	Day Use Vehicle Pass	Seasonal Vehicle Pass	Pump-out
St. Clair Region *proposed 2022 rates*	\$2500	*Peak Season* \$50 weekly \$300	*Peak Season* \$40 weekly \$240	\$10	\$70	\$40/service \$240 bi-weekly \$480 weekly
St. Clair Region *2021 rates*	\$2430	*Peak Season* \$49 weekly \$294	*Peak Season* \$39 weekly \$234	\$10	\$60	\$40/service \$235 bi-weekly \$470 weekly

Upper Thames River CA *2021 rates*	\$ 2900 regular \$3180 waterfront \$3900 premium	\$50 weekly \$ 325.00	\$40 weekly \$260	\$15	\$ 130.00	\$50/service \$320 bi- weekly \$640 weekly
Maitland Valley CA *2021 rates*	\$2700 Plus \$225 winter storage	\$55 Weekly \$335	\$45 weekly \$274	\$15	\$100	
Kettle Creek CA *2021 rates*	\$2550 (no winter storage available)	\$52 Weekly \$325	\$42 Weekly \$275	\$ 10	\$90	\$ 50 per service
Catfish Creek CA *2021 Rates*	\$2680 Plus \$225 winter storage	\$58 Weekly \$345	\$45 Weekly \$275	\$10	\$80	\$50/service \$275 bi- weekly \$525 weekly
Ontario Parks *2021 rates*	NA	\$43.79 - \$59.33	\$38.70 - \$52.55	\$12.25 - \$21	\$111.87	NA
St. Clair Township (Cathcart, Cundick, Mooretown) *2021* rates	\$ 2225 Plus winter storage	\$47.50 - \$55 Weekly \$285 - \$300				
Silver Dove (Appin) *2021 Rates*	\$2712 (sewer included)	\$45 \$240				
Great Canadian Hideaway (Parkhill) *2021 rates*	\$2712 (plus hydro)	\$58.76	\$46.33	\$ 5.00 per person \$ 16.00 vehicle		\$ 339 weekly
Lakewood Christian Campground (Plympton-Wyoming) *2021 rates*	\$2486 - \$2881.50 (sewers included, hydro extra)	\$ 55.37 Weekly \$332.22		\$ 5.00 person or \$ 10.00/ family	\$ 100.00 family	

Woodhaven Campground (Ipperwash) *2021 rates*	\$3118.80 (plus hydro, and water charges)					
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CONSERVATION AREA FEES	2021	2022
Camping Fees		
Reservation Fee	\$13.00	\$14.00
Cancellation Fee	\$20.00	\$20.00
Reservation Change Fee	\$6.00	\$6.00
Peak Season June 24, 2022 - September 5, 2020		
Daily, Unserviced	\$39.00	\$40.00
Daily, Serviced (hydro & water)	\$49.00	\$50.00
Daily, Serviced (hydro only)	\$45.00	\$46.00
Weekly, Unserviced	\$234.00	\$240.00
Weekly, Serviced	\$294.00	\$300.00
Monthly, Unserviced (4 weeks)	\$795.00	\$864.00
Monthly, Serviced (4 weeks)	\$1000.00	\$1,080.00
Off-Peak May 1 - June 23 2022, Sept. 6 - Oct. 15 2022, excluding Victoria Day Weekend & Thanksgiving Weekend (long weekends at peak season rates)		
Daily, Unserviced	\$30.00	\$32.00
Daily, Serviced (hydro & water)	\$35.00	\$37.50
Daily, Serviced (hydro only)	\$35.00	\$37.50
Weekly, Unserviced	\$200.00	\$210.00
Weekly, Serviced	\$225.00	\$250.00
Monthly, Unserviced (4 weeks)	\$700.00	\$756.00
Monthly, Serviced (4 weeks)	\$840.00	\$900.00
Seasonal Camping Season Fees – May 1, 2022 - October 16, 2022		
Full Payment made on or before April 15, 2022	\$2,430.00	\$2,500.00
First instalment payment on or before April 15, 2022	\$1,650.00	\$1,700.00
Second instalment payment on or before June 1, 2022	\$830.00	\$850.00
Half Season, (after August 1)	\$1,215.00	\$1,250.00
Quarter Season, (after Sept 1)	\$607.50	\$625.00
Seasonal late payment fee	\$50.00	\$75.00
Non-refundable seasonal site deposit for the following season - Due October 17, 2021 for 2022 seasonal camping	\$200.00	\$200.00
Miscellaneous Campground Fees		
Overnight Visitors (per person)	\$10.00	\$10.00

Sewage Pump Out per service fee	\$40.00	\$40.00
Sewage Pump Out seasonal fee (bi-weekly)	\$235.00	\$240.00
Sewage Pump Out seasonal fee (weekly)	\$470.00	\$480.00
Exterior fridge/freezer charge	\$180.00	\$180.00
Extra hydro fee for electric golf cart	\$210.00	\$210.00
Golf Cart (day/month)	\$10.00/\$75.00	\$10.00/\$75.00
Ice	\$3.00	\$4.00
Firewood (bundle)	\$8.00	\$9.00
Day Use Fees For Campgrounds		
Vehicle	\$10.00	\$10.00
Pedestrians/Cyclists (16 & over)	\$2.00	\$2.00
Seasonal Day Pass	\$60.00	\$70.00
Buses	\$50.00	\$50.00
Open Pavilion reservation	\$60.00	\$60.00
Closed in Pavilion reservation (Warwick/LC Henderson)	\$100.00	\$100.00
Maple Syrup Festival - Vehicle Entry (AW Campbell)	\$5.00	\$5.00
Highland Glen Conservation Area		
Daily boat ramp fee	Pending	Pending
Seasonal boat ramp fee	Pending	Pending

Schedule "B"		2022 General Levy Assessment (Draft)						
Municipality	2021	2021	2022	2022	2021	2022	2021/2022	
	Current Value Assessment (modified) in Watershed	CVA Apportionment %	Current Value Assessment (modified) in Watershed	Weighted CVA Apportionment %	General Levy	General Levy	General Levy Increase	
Township of Adelaide Metcalfe	\$ 477,465,569	1.9190%	\$ 477,330,858	1.9016%	\$ 22,637	\$ 25,795	\$ 3,158	
Township Brooke-Alvinston	\$ 444,646,360	1.7871%	\$ 441,081,625	1.7572%	\$ 21,080	\$ 23,837	\$ 2,756	
Municipality Chatham-Kent	\$ 3,245,499,210	13.0443%	\$ 3,258,819,210	12.9823%	\$ 153,868	\$ 176,106	\$ 22,239	
Township Dawn-Euphemia	\$ 659,543,385	2.6508%	\$ 671,804,420	2.6763%	\$ 31,269	\$ 36,304	\$ 5,036	
Township Enniskillen	\$ 496,951,075	1.9973%	\$ 490,495,560	1.9540%	\$ 23,560	\$ 26,506	\$ 2,946	
Municipality Lambton Shores	\$ 1,241,608,727	4.9903%	\$ 1,258,956,584	5.0154%	\$ 58,864	\$ 68,035	\$ 9,170	
Municipality Middlesex Centre	\$ 557,966,216	2.2426%	\$ 565,758,748	2.2538%	\$ 26,453	\$ 30,573	\$ 4,120	
Village Newbury	\$ 38,012,315	0.1528%	\$ 38,604,675	0.1538%	\$ 1,802	\$ 2,086	\$ 284	
Village Oil Springs	\$ 49,417,880	0.1986%	\$ 49,672,710	0.1979%	\$ 2,343	\$ 2,685	\$ 342	
Town Petrolia	\$ 631,068,079	2.5364%	\$ 648,792,348	2.5846%	\$ 29,919	\$ 35,060	\$ 5,142	
Town Plympton-Wyoming	\$ 1,361,815,899	5.4734%	\$ 1,382,558,921	5.5078%	\$ 64,563	\$ 74,714	\$ 10,151	
Village Point Edward	\$ 551,257,710	2.2156%	\$ 541,647,010	2.1578%	\$ 26,135	\$ 29,271	\$ 3,136	
City Sarnia	\$ 9,322,085,528	37.4674%	\$ 9,377,157,036	37.3562%	\$ 441,956	\$ 506,741	\$ 64,785	
Municipality Southwest Middlesex	\$ 291,223,673	1.1705%	\$ 293,787,146	1.1704%	\$ 13,807	\$ 15,877	\$ 2,070	
Township St. Clair	\$ 2,787,137,215	11.2021%	\$ 2,825,421,435	11.2558%	\$ 132,137	\$ 152,686	\$ 20,549	
Township Strathroy - Caradoc	\$ 2,151,641,026	8.6479%	\$ 2,209,726,909	8.8030%	\$ 102,008	\$ 119,414	\$ 17,405	
Township Warwick	\$ 573,210,816	2.3039%	\$ 570,371,457	2.2722%	\$ 27,176	\$ 30,823	\$ 3,647	
	\$ 24,880,550,683	100%	\$ 25,101,986,652	100%	\$ 1,179,576	\$ 1,356,512	\$ 176,937	

\$12,000 equals a 1% change in levy
CVA Apportionment is based on information provide from the Ministry of Natural Resources and Forestry (2021 CVA)

Financial Impact:

The total cost of this project is estimated to be \$20,000,000.

The funding distribution is 40 - 60%, with 60% of the costs to be matched by the Municipality. If SCRCA is successful in receiving the funds, we will require matching funds from municipalities in the magnitude of \$12 million dollars over 10 years or 1.2 million every year. SCRCA will apply for other shoreline grants to assist with Municipal contributions.

- 1) City of Sarnia
- 2) St. Clair Township

SCRCA staff will continue to work with the Municipal staff.

The main benefits of the undertaking are:

- Prevention of further erosion and river sedimentation
- Improvements to aquatic habitats in the river
- Improvement of the general appearance of the area
- Control of loss of land in this area
- Elimination of hazards associated with existing dilapidated structures
- Improvement of public access to the waterfront