Board of Directors - Notice of Meeting

April 15, 2021 Time: 10:00 am
Remote via Zoom

Tentative Agenda

1. Chair's Remarks
2. Declaration of Pecuniary Interests
3. Adoption of Agenda
4. Minutes
   - 4.1 Minutes of the February 25, 2021 Board Meeting
   - 4.2 Minutes of the March 10, 2021 Special Meeting
5. General Manager's Reports
   - 5.1 GM's Report
   - 5.2 Term Limits for Chair and Vice Chair
   - 5.3 Application for Minister's Exception
6. Board Correspondence
7. Consent Items (Informational)*
   - 7.1 Adoption of Consent Agenda
     - (a) Business Arising
     - (b) Current Watershed Conditions
     - (c) Management of Contaminated Sediment
     - (d) Shoreline Projects
     - (e) Healthy Watersheds Program Update
     - (f) Canada Ontario Agreement
     - (g) Regulations Activity Summary
     - (h) Planning Activity Summary
     - (i) Revenue and Expenditures
     - (j) General Levy Update
     - (k) Investments
     - (l) 2017 Conservation Authorities Statistical Survey
     - (m) JHSC Meeting Minutes
     - (n) St. Clair River AOC
     - (o) Communications Update
     - (p) Education Update
8. Conservation Areas
   - 8.1 Highland Glen Boat Ramp
9. Presentations
   - 9.1 Agricultural Drain Management in South-Western Ontario
   - 9.2 Regulations and the Drainage Act
10. Finance
    - 10.1 Disbursements
11. New Business
    - 11.1 Municipal Member Composition
    - 11.2 Notice of Retirement
12. Adjournment

Additional Items: News Clippings

NOTE: The Thames-Sydenham and Region Source Protection Authority Meeting will take place immediately following. Please remain on the Zoom call after adjournment of this meeting.

*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.

April 15, 2021

Disclaimer: Board members, staff, guests and members of the public are advised that the SCRCA Special Meeting and Authority Board meetings are being video/audio recorded, and will be live streamed and posted to the Authority's Youtube channel 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)

1. Chair's Remarks

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. **Moved by:** **Seconded by:**
That the Board of Directors adopts the agenda for the meeting as presented.

4.1 **Moved by:** **Seconded by:**
That the minutes of the Board of Directors meeting, held February 25, 2021, be approved as distributed.

4.2 **Moved by:** **Seconded by:**
That the minutes of the Board of Directors Special Meeting, held March 10, 2021 be approved as distributed.

5.1 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the General Manager's report, dated April 1, 2021.

5.2 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the table titled Summary of Changes to the Planning Act and Conservation Authorities Act per Bill 229, Schedule 6 and further directs staff to implement the outlined requirements and best management practice actions as soon as possible, understanding that further actions are anticipated with the proclamation of additional changes and the delivery of updated or new regulations from the Province.

5.3 **Moved by:** **Seconded by:**

That the Board of Directors requests an exception from the Minister of Environment, Conservation and Parks regarding Subsection 17(1.3) of the Conservation Authorities Act – Chair and Vice Chair provisions and endorses the covering letter and application outlining the request to permit Chair and/ or Vice Chair terms to be no greater than 2 years, subject to annual elections and subject to nominated candidates other than the immediate past Chair and/ or Vice Chair, and that this exception recognizes that the term limits be implemented from the elections of the 2021 Annual General meeting going forward, and still further that this be outlined in an update to the Authority's by-laws. ***(Recorded vote)***

6. **Moved by:** **Seconded by:**

That the Board of Directors acknowledges correspondence received by staff for the attention of the Board. ***(none for April 15, 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 February 25, 2021 meeting.*

7.1 (b) *That the Board of Directors acknowledges the report dated April 1, 2021 on the current watershed conditions and Great Lakes water levels.*

7.1 (c) *That the Board of Directors acknowledges the reported dated April 1, 2021 on the engineering and design plan for contaminated sediment in the St. Clair River and further supports the on-going project work being completed as planned.*

7.1 (d) That the Board of Directors acknowledges the report dated April 1, 2021 on the status of Shoreline projects along Brights Grove.

7.1 (e) *That the Board of Directors acknowledges the report dated April 1, 2021 on the Healthy Watersheds Program.*

7.1 (f) *That the Board of Directors acknowledges the report dated March 31, 2021 on the Canada Ontario Agreement – Great Lakes Water Quality Monitoring Program and its value to the SCRCA and partners.*

7.1 (g) *That the Board of Directors acknowledges and concurs with the Regulations Activity Summary Report dated March 31, 2021 on "Development, Interference with Wetlands & Alterations to Shorelines & Watercourses" Regulations (Ontario Regulation 171/06) from February 1, 2021 to March 31, 2021.*

7.1 (h) *That the Board of Directors acknowledges the St. Clair Region Conservation Authority's monthly Planning Activity Summary Report dated March 31, 2021 for February 1, 2021 – March 31, 2021.*

7.1 (i) *That the Board of Directors acknowledges the revenue and expenditure report to February 28, 2021, as it relates to the budget.*

7.1 (j) *That the Board of Directors acknowledges the status report on the 2021 general levy receipts to date.*

7.1 (k) *That the Board of Directors acknowledges the Investment reports to January 31, 2021.*

7.1 (l) *That the Board of Directors acknowledges the Conservation Authorities Statistical Survey – 2017 Financial Report and accepts this data as information.*

7.1 (m) *That the Board of Directors acknowledges the November 12, 2020 Joint Health & Safety Committee meeting minutes.*

7.1 (n) *That the Board of Directors acknowledges the report dated April 1, 2021 on the St. Clair River Area of Concern.*

7.1 (o) *That the Board of Directors acknowledges the Communications update report dated April 1, 2021.*

7.1 (p) *That the Board of Directors acknowledges the Education update report dated April 1, 2021.*

8.1 (a) **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the report dated March 29, 2021 on the boat ramp at Highland Glen and supports the closure of the boat ramp until it can be operated safely.

8.1 (b) **Moved by:** **Seconded by:**
That the Board of Directors directs staff to share the feedback from today's meeting with AECOM for preparation of the final report to be presented to the Board at the June meeting, as well as financial options to fund the project.

9.1 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the presentation titled Agricultural Drain Management in South-Western Ontario: A Work in Progress, presented by Kirsten Van Goethem, Drainage Research Co-Op.

9.2 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the presentation titled Regulations and the Drainage Act, presented by Melissa Deisley, Regulations Coordinator

10.1 **Moved by:** **Seconded by:**
That the Board of Directors approves the January, February and March 2021 disbursements as presented in the amount of $1,173,946.14

11. New Business

11.1 **Moved by:** **Seconded by:**
That the Board of Directors support the current membership of the St. Clair Region Conservation Authority allocating one (1) member each to the Adelaide-Metcalfe, Brooke-Alvinston, Dawn-Euphemia, Lambton Shores, Middlesex Centre, Petrolia, Plympton-Wyoming, Point Edward, Warwick; two (2) members to the Chatham-Kent, St. Clair, Strathroy-Caradoc; three (3) members to the City of Sarnia; one (1) member to Enniskillen which will also represent Oil Springs and one (1) member rotating between Southwest Middlesex (first 3 years of each municipal term) and Newbury (final year of each municipal term) be maintained; and further that each member municipality of the St. Clair Region Conservation Authority support the current membership plan with a resolution of Council to be copied to the Conservation Authority and subsequently to the Minister of Environment, Conservation and Parks

11.2 **Moved by:** **Seconded by:**
That the Board of Directors acknowledges the correspondence from SCRCA General Manager, Brian McDougall dated March 19, 2021 providing notice of retirement effective November 6, 2021.

12. **Moved by:** **Seconded by:**
That the meeting be adjourned.

Board of Directors Annual General Meeting Minutes

Date: February 25, 2021 Time: 10:00 a.m.
Remote

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

Regrets: Mark McGill, Lorie Scott

Staff Present: Donna Blue, Manager of Communications; Erin Carroll, Director of Biology; Melissa Deisley, Regulations Coordinator; Chris Durand, Manager of IT/ GIS; Ashley Fletcher, Administrative Assistant/ Board Coordinator; Sarah Hodgkiss, Planning Ecologist; Brian McDougall, General Manager; Craig Patterson, Water Quality Technician; Tim Payne, Manager of Forestry; Tracy Prince, Director of Finance; Girish Sankar, Director of Water Resources; Steve Shaw, Manager of Conservation Services; Kelli Smith, Biological Technician; Jessica Van Zwol, Healthy Watershed Specialist; Greg Wilcox, Manager of Conservation Areas

Guests Present: Ashley Didone MNP LLP, Jordan Keuken, MNP LLP

Conservation Award Winners Present: Sandra Marshall

The meeting was called to order by the Chair, Joe Faas, who on behalf of the directors and staff of the Conservation Authority welcomed everyone to the 2020 annual meeting and went on to present some of the challenges faced by the Conservation Authority this past year, as well highlighted its many accomplishments. The perseverance and resilience of the Staff and Board was recognized, and in particular, the work of the IT department in creating virtual spaces for staff to wok safely and effectively from home.

2020 Highlights:

- The water resources team continued to provide essential flood forecasting and monitoring services. Sixty-nine flood bulletins were issued during 31 flood events and the McKeough Dam was operated twice to protect the Town of Wallaceburg from severe flooding.
- Over 50,000 trees were planted throughout our watershed.
- Progress was made in completing shoreline protection projects along the St. Clair River and Lake Huron.
- Over 8,000 fish and 1,600 mussels were collected, identified, recorded, and released by the Biology department
- Education staff created innovative and exciting new programs in response

to school closures and COVID-19 school restrictions. The programs were not only successful but welcomed by educators, parents, and students, alike.

- Campgrounds were fully booked through the summer and staff organized new family-friendly activities for our guests to enjoy that followed COVID-19 guidelines.
- Throughout the pandemic, traffic at our conservation areas increased significantly which speaks to our need for safe outdoor spaces to enjoy. Unlike other conservation authorities in the Province, we were able to keep these areas open to the public thanks to the cooperation of our visitors in following COVID-19 protocols.

The support, patience and understanding of local communities and partners during this challenging time was recognized. A thank you was also given to the Board of Directors, The St. Clair Region Conservation Foundation and staff for their hard work over the past year and all they have done to ensure the future success of the organization. The business portion of the meeting was then commenced.

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.

A conflict of interest on item 16.1(f) within the consent agenda was declared by Director and Chair, Joe Faas.

BD-21-01
Bruziewicz – Hall
"That the agenda for the Annual General Meeting be adopted."

CARRIED

Minutes of the Board of Directors meeting held on December 12, 2020 were reviewed.

BD-21-02
Stark – Miller
"That the minutes of the Board of Directors meeting held December 12, 2020, be approved as distributed."

CARRIED

Minutes of the Executive Committee meeting held February 11, 2021 were reviewed.

BD-21-03
Burrell – Loosley
"That the minutes of the Executive Committee meeting held February 11, 2021, be approved as distributed."

CARRIED

Minutes of the Conservation Ontario Council meeting held on December 14, 2021 were reviewed.

BD-21-04
Nemcek – Burrell
"That the Board of Directors acknowledges the minutes of the December 14, 2020 Conservation Ontario Council meeting."

CARRIED

Due to an administrative error, the 2020 Audited Financial Statements were omitted from the Board Package and therefore could not be reviewed. An additional meeting is to be called within the coming weeks to address the item.

BD-21-05
Stark – Brennan
"That the St. Clair Region Conservation Authority accepts the recommendation of the Executive Committee and report from the Authority's auditors, MNP Chartered Professional Accountants LLP, and further approves the 2020 Audited Financial Statements."

TABLED

Each Year the Conservation Authority presents Conservation Awards to deserving individuals and groups who have contributed to the environmental health of our region.

This year, we have three deserving award recipients, Walter and Mary Petryschuk and Sandra Marshall

Walter and Mary Petryschuk

The SCRCA would like to acknowledge the efforts to naturalize their "bonus" property just outside of Forest:

- In 1978, Walter and Mary Petryschuk purchased a parcel of land on Hillsboro Road, just outside of Forest to escape the urban lifestyle they were living in Sarnia, Ontario.
- For over 40 years, they have cared for and enhanced the 16-hectare (40 acre) property that houses steep ravines that lead to Hickory Creek.
- Over the years, Walter and Mary have made many improvements to the property including the planting of 500 trees, the creation of trails and the establishment of a tall grass prairie.
- They are members of the Carolinian Canada Coalition, a network of individuals and organizations committed to maintaining healthy landscapes to conserve and protect Canada's Carolinian Zone. As a result of their membership, a Carolinian Habitat Action Plan was created for the property that outlines how the land will be managed to enhance wildlife habitat.
- The dedication Walter and Mary have demonstrated in protecting and restoring

this property is admirable.
- They continue to let the site regenerate naturally and have already discussed the future of the property with their family to ensure it continues to be protected and enjoyed for years to come.

Walter and Mary Petryschuk were unable to attend the meeting, but did meet with Vice-Chair Larry Gordon the previous week, and were truly touched by the recognition and conveyed their appreciation to the Board.

Director Netty McEwen gave congratulations to Mary and Walter Petryschuk for their environmental efforts and on behalf of the Town of Plympton-Wyoming, expressed their pleasure and pride to have them as property owners.

Sandra Marshall

- Sandra is an active advocate and participant in the fight against the invasive species *Phragmites australis* in the Ipperwash Beach region.
- She is a member of the Ipperwash Phrag Phighters community group who work to eradicate stands of Phragmites in their region and educate others on the environmental, social, and recreational impacts Phragmites has on the local community and ecosystem.
- She is always willing to help other communities tackle Phragmites in their jurisdictions and attended the Lambton County Phragmites Partnership Workshop held in October 2018 to share her experiences with other organizations.
- When she's not fighting Phrag, you can find Sandra walking along Ipperwash Beach, almost daily, picking up trash left by other users. Sandra also often attends the Ipperwash Beach Shoreline Clean-up organized in September by the Authority.
- Without the dedication and passion of individuals like Sandra, the establishment of Phragmites would be much more severe than it is today in the Lambton Shores region.
- Described by her nominator, Lorie Scott, as a self-starter, you can be sure that Sandra will continue her fight in erasing this invasive species from the landscape and promoting clean and healthy beaches for many years to come.

Sandra Marshall gave her remarks and thanks to the SCRCA Board and Staff for the support and recognition.

BD-21-06
MacKinnon – McEwen
"That the Board of Directors congratulates the 2020 Conservation Award Winners and thanks them for their contributions to conservation."

CARRIED

The 2020 Service Awards were presented

Five Years of Service:

- Sarah Hodgkiss – Planning Ecologist
- Greg Wilcox – Manager of Conservation Lands

Ten Years of Service:

- Maryanne Nieuwenhuizen – Assistant Superintendent at A.W. Campbell Conservation Area

15 years of Service:

- Steve Miller – Township of St. Clair

30 years of Service:

- Brian McDougall – General Manager

BD-21-06
Brown – Marriott
"That the Board of Directors acknowledges the service awards presented to the directors and staff and further that they be thanked for their years of dedicated service."

CARRIED

The Chair announced the conclusion of 2020 business. The 2021 Board of Directors wishes to welcome Bill Dennis, representing the City of Sarnia. Thanks and well wishes were extended to former board member, Andy Bruziewicz for his many years of service, including his time as Chair and Vice-Chair of the Board. The meeting resumed to conduct 2021 business.

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, Dan McMillan, Steve Miller, Frank Nemcek, Mike Stark, Jerry Westgate

Regrets: Mark McGill, Lorie Scott

Staff Present: Donna Blue, Manager of Communications; Erin Carroll, Director of Biology; Chris Durand, Manager of IT/ GIS; 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; Greg Wilcox, Manager of Conservation Areas

An acknowledgement of the St. Clair Region Conservation Authority Code of Conduct and Administrative By-laws was reviewed by the 2021 Board of Directors. Directors are asked to please return signed acknowledgements to Ashley Fletcher, Board Coordinator at their earliest convenience.

BD-21-07
Westgate – Stark
"That the Board of Directors acknowledges and complies with the St. Clair Region Conservation Authority's Code of Conduct and Administrative By-laws."
CARRIED

BD-21-08
Nemcek – Brown
"That Brian McDougall be appointed chair for the election of the 2021 Chair and Vice Chair."
CARRIED

BD-21-09
Loosley – Burrell
"That Chris Durand and Donna Blue be appointed scrutineers in the event of an election."
CARRIED

The positions of Chair and Vice-Chair were declared vacant and nominations were called for the office of Chairman for 2021

Larry Gordon nominated Joe Faas for position of Chair
Kevin Marriott also nominated Joe Faas for position of Chair

BD-21-10
MacKinnon – McEwen
"That nominations for the position of Chair be closed."
CARRIED

Joe Faas advised that he would stand and was declared Chair of the St. Clair Region Conservation Authority for 2021. Mr. Faas gave thanks for the support and trust of the Board, and expressed his utmost respect for both Staff and Board members.

Al Broad nominated Larry Gordon for position of Vice Chair
Pat Brown also nominated Larry Gordon for position of Vice Chair

BD-21-11
McMillan – Miller
"That nominations for the position of Vice Chair be closed."

CARRIED

Larry Gordon advised that he would stand and was declared Vice Chair of the St. Clair Region Conservation Authority for 2021. Mr. Gordon thanked the Board for their confidence and gave his appreciation for the opportunity to continue facing the challenges that lay ahead for the Authority.

Additional nominations were taken from the floor to complete the membership of the Executive Committee.

BD-21-12
Burrell – Marriott
"That the St. Clair Region Conservation Authority adopts the 2021 Nominating Committee's Report."

CARRIED

BD-21-13
Dennis – McKinnon
"That the 2021 Executive Committee for the St. Clair Region Conservation Authority be:

Joe Faas, Chair
Larry Gordon, Vice Chair
Terry Burrell
Frank Kennes
Brad Loosley
Betty Ann MacKinnon
Mark McGill
Steve Miller
Mike Stark"

CARRIED

BD-21-14
Hall – Burrell
"That the Authority Chair or the Vice Chair and the General Manager/Secretary-Treasurer or Director of Finance be authorized to borrow from the Libro Credit Union, Strathroy for the general operations and capital program of the Authority, a sum not to exceed $2,967,098.00 to be repaid from grants received from the Province of Ontario, Government of Canada, levies assessed to the member municipalities and general revenue."

CARRIED

BD-21-15
Miller – Loosley
"That MNP Chartered Professional Accountants LLP, be appointed auditors for the St. Clair Region Conservation Authority for 2021."

CARRIED

BD-21-16
Miller – Nemcek
"That the Authority's 2021 representative to Conservation Ontario will be the Authority Chair, the Vice Chair will be the first alternate and the General Manager be the second alternate."

CARRIED

Municipal Forum with Conservation Authorities – Hosted by Lambton County

- An update regarding the proposed forum was provided to the Executive Committee and that information is contained with the Executive Committee Minutes

Legislative Changes to the Conservation Authorities Act (CAA) Begin to Be Proclaimed

- Correspondence from the Ministry of Environment, Conservation and Parks (MECP) was reviewed, as were comments from staff clarifying the impacts on the SCRCA
- Further information is expected to be available at the April Board meeting

BD-21-17
Brennan – Burrell
"That the Board of Directors acknowledges the General Manager's report dated February 15, 2021."

CARRIED

Item 16.1(b) was removed from the Consent Agenda, as requested by Director Mike Stark.

Background:

- The Conservation Authority owns 15 conservation areas
- Seven are managed by the local municipality and 8 are operated by the Conservation Authority
- Three of the eight CAs operated by SCRCA are regional campgrounds offering seasonal camping, overnight camping, and day use opportunities

- Combined, the three campgrounds have over 500 campsites, 420 of these are occupied by seasonal campers
- Surplus Revenues from the campgrounds are held in reserve to fund capital upgrades in the campgrounds
- The 2021 camping season is anticipated to run from May 1 to October 17

Campgrounds Update:

- Due to Covid-19, adjacent transient campsites can not be operated at the same time, approximately 50% of SCRCA's transient campsites are available for reservation
- On-line transient campsite reservations opened January 11, 2021 (second year for the on-line reservation system)
- During the first 20 days of reservations, 2021 payments for transient camping totalled $69,940 down from $99,582 in 2020
- All seasonal campsites are reserved for the 2021 season
- It is unknown at this time if pools will be in operation for the 2021 season
- Warwick CA had approximately 15 trailers and/or sheds broken into in December. OPP investigated and all site occupants were contacted. All campers at Warwick were notified of the situation by email or Facebook. Staff continue to patrol the property on a 1-2 week basis.
- The entry gate at AW Campbell CA was damaged when a suspect of a high speed pursuit crashed through them in January. OPP apprehended the suspect and are submitting the cost of the damages to the courts in an effort to have the Authority reimbursed.

Increased Day Use of Conservation Areas:

- Staff have observed a considerable increase in the day use of SCRCA's conservation areas during the pandemic
- Increased CA use has continued into the winter
- Increased garbage collection has been required at some properties this winter
- Parking lots are not sufficient to handle all parking requirements on busy days (parking on grass, along laneways, and along the road)
- During the stay at home order hockey rinks have not been accessible to the public, skating on outdoor ponds/reservoirs is occurring at many of SCRCA's Conservation areas (cautionary signage posted)

Highland Glen Study Update:

- A detailed site inspection has been carried out by AECOM
- Site survey work has been completed by TRUELINE Services Inc.; a bathymetric survey is yet to be completed
- AECOM has provided a draft copy of a report on the current status of the facility including some preliminary concepts for repair/upgrade
- The report identifies significant damages to almost all structural components of the facility (retaining walls, break walls, ramp, etc.)

Suggested Short Term Solution to Open the Boat Ramp

Recommended Repair Option	Estimated Cost
Installation of modular floating walkway along the boat ramp	$10,000
Installation of riprap along the bank directly east of the boat ramp	$10,000
Installation of a floating breakwater in place of the missing groyne wall	$50,000
Installation of a removable aluminum stairway for beach access	$10,000

Long Term

- Recommendations still being developed
- Initial discussions indicate replacement of a number of structures
- In addition, an extension to the curtain wall and new shoreline protection structures
- Significant costs will be incurred to restore and protect the boat launch

Grant Proposals:

- Grant proposal submitted to the Great Lakes Local Action Fund requesting funding to rebuild over 500' of boardwalk at Coldstream CA and for habitat creation along the East branch of the Sydenham River
- Grant proposal submitted to the Habitat Stewardship Program for Aquatic Species at Risk to complete a Strathroy reservoir and dam decommissioning Class Environmental Assessment. This 2 year project would investigate alternatives to the dam and reservoir that would mitigate the negative environmental impacts that the dam/ reservoir have on the Sydenham River.

Conservation Lands Clerk JCP Position

- This position was filled in November by Kandyce Affleck
- Position focus is on developing a new template and guidance document for Conservation Area Property Management Plans
- Many Conservation Area Management Plans require updating
- Kandyce has also assisted with some field work and has worked on the updated seasonal camping policies

Director's Comments:

Director Mike Stark expressed concern over the potential long-term costs for repairs to Highland Glen and affirmed his position against this project. It is requested that staff present a full report to the April Board meeting giving both short term and long term costs for repair. Staff gave details of a recent meeting with consultants, in which priorities were re-focussed, possibly resulting in a lower quote for repairs. Staff will be bringing a report to the April board meeting with a specific financial request.

BD-21-18
Stark – Loosley
"That the Board of Directors acknowledges the update report dated February 7, 2021 on Conservation Areas."

CARRIED

BD-21-19
Loosley – Miller
"That the Board of Directors approves the consent agenda and endorses the recommendations accompanying Items 16.1 a - 16.1 m, with the exception of 16.1 (b)."

CARRIED

The report on business arising was reviewed.

(a) That the Board of Directors acknowledges the report on business arising dated Feb 11, 2021.

St. Clair River Ice Jam
Above seasonal temperatures and northerly winds resulted in free-floating ice from Lake Huron to move into and accumulate in the lower reaches of the St. Clair River the week of February 1, 2021, resulting in an ice jam and elevated water levels in the region of the St. Clair Flats and Port Lambton.

Canadian and U.S. Coast Guard vessels have been conducting daily ice breaking operations in an effort to clear the jam, however recent below-normal air temperatures have resulted in ice formation over Lake St. Clair, thereby halting ice breaking efforts due to the inability of ice to be cleared and flushed out of the river. As of this report, the ice jam remains intact and the flood risk in the area remains high.

Water Levels
Levels across the Sydenham River are currently stable and below bankfull thresholds. The river in the area of Wallaceburg is fully frozen, with levels affording approximately 60 cm of freeboard.

Water level data for the surrounding Great Lakes and Lake St. Clair show water levels in December 2020 were similar to those in 2019, yet were above average compared to longstanding periods of record.

Water level forecasts by Fisheries and Oceans Canada indicate the potential for levels to meet or exceed record highs on Lakes Huron, St. Clair and Erie over the next six months, should above normal climate conditions materialize.

Precipitation
Recent below-normal precipitation has resulted in regional averages significantly below the normal three-month average, however a wet August which saw double the normal precipitation has brought regional averages for both the past six and twelve months to near normal.

(c) That the Board of Directors acknowledges the report dated February 11, 2021 regarding current watershed conditions and Great Lakes water levels.

SCRCA staff have completed QA/QC of all survey data, survey work included surveying cross-sections of creek and measuring culverts and bridges

- This floodplain mapping exercise will include the 100 year and regional flood lines for the SCRCA watershed
- Hydrologic and Hydraulic Modelling has been completed and draft flood lines have been developed by Riggs Engineering
- Quality control of the draft flood lines is being undertaken by Riggs Engineering.
- Staff are currently reviewing the draft flood lines and identifying data gaps
- Riggs Engineering is in the process of scheduling a training session for floodplain mapping with SCRCA and municipal staff
- New flood lines are expected to be available by June 2021.

(d) That the Board of Directors acknowledges the report dated February 11, 2021 on the update to the floodplain mapping project.

The St. Clair Region Conservation Authority (SCRCA) is continuing to lead the project work to develop an engineering and design plan for managing contaminated sediment in three priority areas of the St. Clair River. Funding for this project has been provided by Environment and Climate Change Canada (ECCC), the Ontario Ministry of the Environment, Conservation and Parks (MECP) and Dow Canada. The parties that provided funding are actively participating in oversight of the project work through a Sediment Management Oversight Committee.

Following a competitive procurement process, the SCRCA retained Parsons Inc. in August 2019 to prepare the engineering and design plan. Shortly afterwards, work on the plan commenced that included a field component. Field activities were conducted in fall, 2019; summer, 2020 and fall, 2020 and involved the following:

- Water velocity measurements and the sampling of surface sediment to assess sediment stability,
- The collection of a number of shallow sediment samples and deep core sediment samples to measure mercury concentrations at various depths,
- The use of an underwater camera to assess the condition of structures in certain areas

- A bathymetry survey.

Additional health and safety measures were incorporated to address provincial and federal requirements related to COVID-19.

Project Update:

The consultant made a presentation to the Sediment Management Oversight Committee in November, 2020, summarizing the results of the most recent sediment sampling, including how it compared to historical results.

Additional presentations were made to the Oversight Committee in December, 2020 and January, 2021 after further analysis of the sampling data. Discussions are underway in regard to the recommended path forward to address the contaminated sediment based on the results of the sampling.

The progress of the consultant's work is being tracked against key deliverables, costs and timelines. The SCRCA has requested submission of a revised project schedule from Parsons to confirm how the additional field sampling work and delays due to COVID-19 will impact the project completion date.

(e) ***That the Board of Directors acknowledges the report dated February 11, 2021 on the on-going project work on the Engineering and Design Plan for the Management of the Contaminated Sediment in the St. Clair River.***

The planning activity report for the period of November 1, 2020 to January 31, 2021 was reviewed. An entry recorded incorrectly as Inniskillen is to be corrected to Petrolia, as noted and requested by Director Brad Loosley.

(f) That the Board of Directors acknowledges the St. Clair Region Conservation Authority's monthly Planning Activity Summary Report, dated February 2, 2021 for the period from November 1, 2020 to January 31, 2021.

The regulations activity report for the period of November 1, 2020 to January 31, 2021 was reviewed.

(g) That the Board of Directors acknowledges and concurs with the Regulations Activity Summary Report dated February 2, 2021 on "Development, Interference with Wetlands & Alterations to Shorelines & Watercourses" Regulations (Ontario Regulation 171/06) from November 1, 2020 to January 31, 2021.

Virtual Drainage Process Discussion Meetings:
At the December 12th, 2019 Board Meeting, the Board of Directors directed staff to consult with watershed drainage superintendents and municipal representatives for comments on the drain enclosure policy. On September 2, 2020, SCRCA staff reached

out to Drainage Superintendents for comments regarding this policy, shortly afterwards at the Board Meeting on September 17th 2020, the Drain Enclosure Policy was rescinded. There appeared to still be a need for discussions and clarity regarding the SCRCA drain review process. The SCRCA hosted two virtual workshops on February 18th for SCRCA staff and Drainage Superintendents within the SCRCA watershed. This meeting was established to foster and build good working relationships and clearly outline the SCRCA drainage process for both drainage superintendents and the SCRCA staff. The agenda consisted of a variety of discussion topics including: the Conservation Authorities Act, the general review process (i.e. when SCRCA should be notified of drain projects to reduce delays), the rescinded drain enclosure policy, potential opportunities for funding BMP projects on drains, and an opportunity for drainage supers and staff to ask any questions to the SCRCA, or seek clarity on any concerns within this process.

A total of 17 drainage superintendents and staff RSVP'd to the meetings. The SCRCA intends to use the feedback received from these groups to develop a "checklist" that will be used by the Drainage Superintendents and SCRCA staff to improve clarity between the two organizations on what is required for drain projects in order to reduce any delays in projects. Drainage Superintendents are encouraged to bring forth projects for the 2021 season that could be used as demonstration sites for implementing Best Management Practices or including the use of Green Infrastructure on drains.

Drainage Research Project

In the fall of 2020 SCRCA staff were approached by Drainage staff in Chatham-Kent interested in researching the potential impacts of drain maintenance practices on water quality and reviewing the various best management practices and innovations in order to provide solutions. Seeing great benefit in this question and looking to explore further, SCRCA staff reached out to the Healthy Headwaters Lab from the University of Windsor for input. The partners met in late 2020 and it was decided that a literature review would be the most effective research method to start this project off. A second-year undergraduate co-op student, Kirsten Van Goethem, from the University of Waterloo has graciously taken on the project and will continue to work with the Municipality of Chatham-Kent, SCRCA, and University of Windsor Healthy Headwaters Lab to conduct the literature review. At the end of the co-op term Kirsten will present her findings to the group and other interested parties.

Financial Impact:

Funding for these projects has been obtained through a grant from the Ministry of Agriculture Food and Rural Affairs as part of the COA program. The funds are going to support the virtual workshops, support for Chatham-Kent staff contribution to the project and the co-op position. Additional funding through EcoCanada is also supplementing the support of the co-op student.

(h.1) That the Board of Directors acknowledges the report dated February 3, 2021 on Drainage Updates and the current projects in collaboration with the Drainage Community to build relationships and improve communication.

SCRCA Drain Review Process Meeting Update

- Two meetings held February 18, 2021 with a total of 22 participants, including Drainage Superintendents, Drainage Engineer's and Municipal staff
- Lots of good discussion and questions brought up
- Questions and discussion centred around the following: sediment and erosion control timing windows, definition of a watercourse, watershed size and proposed enclosures, section 6 of the Drainage Act requesting an Environmental Appraisal is not used but rather request for additional studies under the Conservation Authorities Act, SCRCA use of Department of Fisheries and Oceans Drain Classification system, and invoicing/fees for projects.
- Following the meeting the presentation and a survey were sent to all participants

Next Steps:

- SCRCA staff are working on a document summarizing the questions asked during the meeting with answers and responses to be circulated to attendees this week
- One of the questions asked involved section 6 of the Drainage Act, requesting an Environmental Appraisal and technical studies requested under the Conservation Authorities Act; working with one of the Drainage Superintendents to seek guidance from OMAFRA and Conservation Ontario on how to address this issue

(h.2) That the Board of Directors acknowledges the update on the outcome and summary of the SCRCA Drain Review Process meetings held on February 18th 2021.

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.

These are some ways we collate relevant information to disseminate to farmers in our watershed:

- We worked with Dr. Laura Van Eerd of University of Guelph, Ridgetown Campus to create a student project to create infographics for SCRCA social media that highlight aquatic species and how on-land stewardship actions could help protect them. These infographics were valued on Facebook, Instagram, and Twitter. Some of Dr. Van Eerd's students are from our watershed and are familiar with the Sydenham River (funded through DFO).
- Jessica Van Zwol was invited to join the "Soils at Guelph"/Midwest Cover Crop Council Conference advisory committee. This conference is full of useful and practical information that farmers in our watershed could utilize. **Jessica will be hosting a panel discussion on implementing cover crops on Wednesday February 24th at 9:30 am** (funded through EcoAction). Everyone is welcome to participate - we have been promoting the event on our social media to encourage farmers within our watershed to participate (entire 4-day conference registration is $35) https://soilsatguelph.ca/event/midwest-cover-crop-council-conference/
- SCRCA was invited to participate in a discussion hosted by **Toby Barrett, Parliamentary Assistant to the Minister of Agriculture, Food and Rural Affairs (Ernie Hardeman)** to provide feedback on how to improve the Lake Erie Agriculture Demonstrating Sustainability (LEADS) program that provides grants for cover crops, equipment modifications, and stewardship to farmers in our region.
- SCRCA is coordinating a virtual webinar series with Lower Thames Valley, Essex Region, Long Point, Catfish Creek, and Kettle Creek Conservation Authorities to promote agricultural BMPs in southwestern Ontario. The **SCRCA bio strips webinar will be hosted by Jessica Van Zwol on Tuesday March 2 at 11 am and will showcase 3 local farmers.** Zoom link: https://zoom.us/webinar/register/WN_rCIaiXttQNK77chxfu3L_Q. The free event will be advertised in Today's Farmer and on SCRCA social media. This event (as well as the others in the series) is geared to SCRCA farmers as well as Lake Erie farmers (funded through OMAFRA COA).
- The Biology department will participate in a DFO-led webinar on aquatic species at risk and DFO's regulations to provide clarity to consultants, drainage superintendents, drainage engineers, and contractors in our watershed regarding working in or near water. The tentative date is set for March 11; we will be reaching out to contacts in the near future, please let us know if you are interested (funded by DFO).
- Sarnia Lambton Climate Action Group has reached out to Biology and Communications staff to create a partnership promoting community, private landowner, and school greening tree planting within the watershed (funded through EcoAction).
- In early winter, stewardship staff sent out over 1,800 newsletters to farmers in Lambton Shores and the East Branch of the Sydenham River highlighting BMPs that can build soil health and minimize impacts to water quality. We highlighted 2 farmers from our watershed. This newsletter has resulted in a number of farmers

contacting SCRCA regarding stewardship funding for various projects (see below, funded through EcoAction and MECP COA).

- Stewardship staff are working with Upper Thames River Conservation Authority to develop a factsheet on maintenance of erosion control berms to promote the longevity of this green infrastructure (see below, funded through OMAFRA COA).
- The Biology and Communications departments finished the Aquatic Species at Risk Newsletter that will soon be delivered to over 60,000 households in the watershed (funded through DFO)
- The GIS department, in conjunction with stewardship staff, are currently developing 2 erosion mapping tools that will assist in targeting areas that would benefit from voluntary implementation of BMPs in the Brown Creek and Lambton Shores watersheds. The Lambton Shores tool is being created in conjunction with the other 4 Healthy Lake Huron Conservation Authorities (funded through OMAFRA COA).
- Centre Ipperwash Community Association has invited Jessica Van Zwol and Emily De Cloet to present to their members in March on coastal stewardship and Lake Huron water levels (funded by MECP COA).
- Lambton Wildlife Inc. invited Craig Paterson, Biology department, to present on our 2020 Round Goby fish monitoring program (funded by DFO).
- In spring 2021, Roland Eveleens, a University of Windsor Master's student will join 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. Roland will work with SCRCA to create outreach material based around his research on freshwater mussels in the Sydenham River.

Information sharing, partnerships, and word-of-mouth lead to on the ground stewardship projects. We are currently working with 27 landowners to implement 30 stewardship projects on over 70 acres in our watershed.

Strategic Objectives(s):

The Healthy Watershed Program fulfils 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.

(i) That the Board of Directors acknowledges the report dated February 12, 2021 on Healthy Watersheds Program and Biology Department Update

Allen Woodliffe, retired MNRF ecologist, conducted a multi-day study of Moore Wildlife Area on May 23, June 18 and September 9, 2020 to better understand population distribution of moths and other invertebrates attracted by a black light. Allen grew up on a farm just outside of Rondeau Provincial Park. This study was a continuation of a hobby project that began in 2019 and was reported to the Board on December 12, 2019. As a condition of permission to conduct this study, Allen was asked to report back to the Authority Board on his findings.

Moths play a key role in the ecosystem. They consume nectar from flowers, pollinating a variety of species as they move from plant to plant. Moths also serve as an indicator species, as their presence or absence can signal the overall health of the ecosystem. Monitoring their distribution and abundance can give clues to the impacts of pesticides, air pollution and climate change.

A report summarizing Allen's findings was included in the Board package. Overall, there was an increase in the number of species identified from 2019. However, this was expected due to timing differences and the increase in the number of photographs taken in 2020. This year, in just 3 nights of sampling, 115 different species of moths and 27 non-moth species identified. Twelve species of these moths are likely to be uncommon in Ontario. Check out the Board package for photos highlighting the diversity of all these species!

Now that this study has been conducted for 2 years at Moore Wildlife Area, Allen Woodliffe is interested in extending his studies to other Conservation Areas within our watershed. Reid Conservation Area, with its mature woodlands, wet meadows and Sydenham River riparian habitat, is known to be a local biodiversity hotspot, supporting a number of rare and sensitive species. For these reasons, Allen is hoping to find more uncommon or rare species at the property. He also suspects that there are still many more species to be discovered at Moore Wildlife Area.

(j) That the Board of Directors acknowledges the report, dated January 28, 201 on 'Black Lighting At Moore Wildlife Area, 2020' by Allen Woodliffe

Local residents cherish the Sydenham River. Many connect with it through a collection of recreational activities, including fishing, paddling, photography, hiking and exploring. This study aids in preserving the integrity of this local treasure for present and future generations.

The Sydenham River, situated in Southwestern Ontario, boasts an elaborate array of biodiversity, supporting some of the richest species diversity in Canada. The River and connecting lands, provide critical habitat to a plethora of fish, birds, mammals, reptiles and amphibians. This vital ecosystem also provides sanctuary to an extensive variety of Canada's freshwater mussels. In 2020, under the direction of DFO and in accordance with the Canada Nature Fund for Aquatic Species at Risk (CNFASAR), the St Clair Region Conservation Authority Biology department conducted systematic freshwater mussel surveys to understand spatial patterns of mussel distribution and habitat

relationships. This report is the product of data obtained during year two of a four year study funded through CNFASAR grant. The 2021 field season signals the beginning of year three and will involve replicating year two efforts at new locations along the Sydenham. Year four will target historic freshwater mussel study sites.

Importance: The Sydenham is a unique and critically important system as it is home to many of the country's freshwater mussel species. Currently, twelve of the fifteen mussel species assessed as at-risk in Ontario by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) inhabit the turbid waters of the Sydenham River. The reports and data generated from this study are used and shared throughout both the Canadian and global research community. In North America, freshwater mussels have declined by 70%. Habitat degradation, pollution, invasive species (Round Goby and Zebra Mussels) and loss of fish hosts which are vitally important during the mussel reproduction cycle.

Research Results: Throughout the 4km reach a total of 1689 live mussels were detected, representing 22 different species, including 89 SAR, representing eight species. Although freshwater mussel populations in the Sydenham River have been well studied over time, the study sites surveyed in 2020 have received minimal attention and consequently, data on species richness and abundance was relatively absent. The 2020 study has provided a unique opportunity to explore a vast and contiguous segment of this diverse and remarkable river system.

Highlight: Although rarely seen or encountered, mussels play an integral role in shaping aquatic ecosystems. Beneath the surface, mussels are a filter-feeding powerhouse. A single mussel can filter 40 L of water per day. Collectively, the mussels recorded in this study can filter a staggering 25 million litres of water a year, which is equivalent to 10 Olympic size swimming pools. This filtering process removes algae, organic matter, and nutrients; converts cloudy contaminated water to clear and healthy; and benefits an array of aquatic organisms from plants to fish to invertebrates.

Collaborations: This work is only possible due to the collective effort from Kelly McNichols-O'Rourke, Margaret Sheldon and Todd Morris of Fisheries and Oceans Canada, the Healthy Headwaters Lab at the University of Windsor, led by Dr. Catherine Febria and the continued support from local private landowners who graciously permit access to their lands.

Financial Impact:

All monitoring and research projects conducted by SCRCA Biology are supported through self-generated revenue and external grant programs.

Projects like this contribute to our understanding of the Sydenham River. In order to preserve the health of a river you need to study what lives in it. Our unique freshwater mussel populations act as one tool in a vast environmental toolbox, which we can use to measure how healthy our river is.

1. River health can be measured by studying fish and mussels.
2. River health influences the local community and its residents.
3. Actions by the local community and its residents effect river health.

This study can aid in making informed, watershed-based decisions that can improve water quality, maintain & monitor river health and preserve this remarkable system for not only local residents but for future generations.

(k) That the Board of Directors acknowledges the report, dated February 10, 2021 on the results from mussel research conducted by SCRCA Biology in 2020

Fall Education Program Summary

COVID-19 has required the SCRCA Conservation Education team to adapt to new restrictions and guidelines implemented by local health authorities and the federal and provincial governments. The SCRCA education staff has effectively met these challenges with innovative, creative, and exciting new programming opportunities! We are thrilled to be able to share our successes.

1. **Nature In Your Neighbourhood:** Staff were fully booked with schoolyard programming right until the end of December, with over 3000 students reached during fall, 2020. New booking requests are already being made for spring, 2021.

2. **Live-Stream with a Naturalist:** Successfully launched during fall, 2020, this program option connected with 4 classes (3 in-school, 1 virtual), reaching 100+ students. With 21 requests for this program during the winter months, St. Clair will reach an additional 500+ students via live-stream.

3. **Virtual Field Trips:** Several Virtual Field Trip subscriptions were purchased during fall, 2020 and new requests are continuing to be made.

Great Lakes Virtual Field Trip Project

St. Clair Conservation has embarked on a new project funded by the Ministry of the Environment, Conservation and Parks (MECP). The St. Clair Education Team is acting as both Huron-Erie Corridor Project Lead and as Project Mentor for the other Team Leads across the province. This project aims to highlight the Great Lakes as a platform to educate students in Grades 8, 9, and 10 in the subjects of Science, History and Geography. Project completion date is March 31st, 2021.

Winter Education Programs

Education evolution is happening all around; times are changing fast and the SCRCA Education Team is eager to meet these challenges with innovative, creative and

exciting new programming options. Many of the winter, 2021 program offerings were developed utilizing grant/sponsorship funding, providing teachers with free programming. For a full list of our current programs, please visit www.scrca.on.ca/govirtual.

1. **Maple Syrup Program:** A fun mix of live streaming, pre-recorded videos, songs and games will bring kids on a trip through time to teach them all about maple syrup. The students will also learn about French-Canadian culture and the celebrations that take place around “le temps des sucres”, thanks, in part to a new partnership with the Sarnia-Lambton French Community Centre. The SCRCE Education Team is very excited to offer this bilingual program to our watershed schools! The program runs from March 5-12, with 4 out of 10 spaces already booked!

2. **Phosphorus 101:** Sponsored by Friends of the St. Clair River and EcoAction Canada, this program introduces students from Grades 8-12 to the issue of phosphorus loading into our watershed and Lake Erie. This live-stream version of the program fully booked within a few weeks of its launch; over 200 students have participated to date.

3. **Aquatic Species at Risk:** This longstanding program, currently sponsored by the Canada Nature Fund, has been re-created into a pre-recorded video series for teachers (Grades 4-12) to use with their students. The 4-part series was launched Feb. 4th, 2021 and has over 70 views (~1500 students reached).

4. **Watershed 101:** Friends of the St. Clair River are sponsoring this brand new live-stream program which focuses on the interconnectivity between land and water. Grade 6-8 students will ‘tour’ the conservation area, learning about watershed management and how what happens upstream impacts downstream. This program is fully booked for 2021 with over 175 students expected to participate.

5. **Spring Water Awareness Program:** Plains-Midstream Canada continue to sponsor this program. Staff are in the design/development stage to adapt this program to meet the ever-changing needs of the schools and students in our watershed. The current goal is to create a hybrid virtual-schoolyard program which would allow staff to engage students in-person.

Kettle and Stony Point First Nation – Canadian Nature Fund, Year 2
Staff have been working with two classes this year at Hillside Elementary School in partnership with the Ojibwee program and the Principal/Education Director to add a western science lens to the school’s Land Based Education curriculum. Successful school outdoor visits occurred in October, November, and December, 2020. The project is now on hold due to school closures, but visits will resume once the school re-opens. This partnership continues to grow and evolve despite school closures; Steve Styers

(Principal and Education Director) and Nicole Monague (Ojibwee Instructor) have both agreed to participate in the Great Lakes Virtual Field Trip project as part of the Teacher Focus Group and have graciously connected us with Indigenous Water Protectors to interview for the project.

(l) That the Board of Directors acknowledges the Conservation Education Progress report dated February 10, 2021.

The 2021 schedule of special events was reviewed.

(m) That the Board of Directors acknowledges the 2021 schedule of Special Events outlined in the attached flyer.

Due to COVID-19, SCRCA's camping season could be shortened/ interrupted in 2021. To be prepared for this possibility, staff have prepared a formula that would allow seasonal camping fees to be modified as changes to the season occur.

Current Seasonal Fees (May 1 – October 17):

Fee Type	2021 Approved Fee	Season Length	Cost per week
Site Permit	$2430	24 weeks	$101.25
Weekly Pump-out	$470	24 weeks	$19.58
Bi-weekly Pump-out	$235	24 weeks	$9.38
Golf Cart	$210	24 weeks	$8.75
Exterior Fridge	$180	24 weeks	$7.50

Proposed Camping Extension:

Similar to 2020, the camping season could be extended for up to 2 weeks in 2021. This would provide campers additional opportunity to enjoy the parks while allowing SCRCA to recover lost revenue in the event that COVID-19 interrupts the camping season.

Proposed Seasonal Fee Adjustments:

1. All seasonal fees listed in the table above would be adjusted based on the following formula:
   Season Length (in weeks) x Cost per week

2. If pools are not able to operate each seasonal permit would be reduced by $215 (estimated operating cost of pools/# of seasonal sites). If pools operate and are closed due to COVID requirements/concerns, no refunds will be available.

Proposed Daily Camping Fee Adjustment

1. That staff have the discretion to provide full refunds for cancellations or changes to camping reservations due to Covid-19. This would include the elimination of cancel/change fees and the refunds of reservation fees when appropriate.

Financial Impact:

The extent of the financial impact is unknown at this time. Delays or interruptions to the camping season may be necessary to keep campers/staff safe and to follow public health recommendations/requirements.

If the seasonal camping season is shortened, the following reductions in revenue are estimated.

Seasonal Camping (All Campgrounds)

Fee Type	Estimated # of Customers	Weekly Revenue	Total
Site Permit	425	$101.25	$43,031.25
Weekly Pump-out	25	$19.58	$489.50
Bi-weekly Pump-out	240	$9.38	$2,251.20
Golf Cart Pass	175	$8.75	$1,531.25
Exterior Fridge	65	$7.50	$487.50
Total Estimated Weekly Revenue Loss (Includes Taxes)			$47,790.70

Additional Reduction to Seasonal Camping Permit Fee if Pools Do Not Open

$215 per site permit x 425 Seasonal Permits = $91,375 (Includes Taxes)

BD-21-20
Miller – McMillan
"That the Board of Directors acknowledges the report dated January 26, 2021 on the Camping Season and Fee Modifications in the Event of an Altered Seasonal Camping Season and further approves the fee adjustment formula proposed for 2021 in the event that the seasonal camping season is altered due to COVID-19, approving up to a 2 week extension to the camping season, and also further approves the full refund of daily camping fees when staff deem appropriate."
CARRIED

The St. Clair Region Conservation Authority Board and Staff Member Fee Policy for Conservation Areas was reviewed.

Director Comments:
Director Al Broad questioned whether there was a need for seasonal fee reductions for Board members and requested a recorded vote to remove this advantage from the SCRCA Board and Staff Member Fee Policy. The vote passed unanimously.

BD-21-21
Broad – Miller
"That the Board of Directors acknowledges the report, dated January 27, 2021 on the proposed Board and Staff Member Fee Policy for Conservation Area Use and directs staff to remove the seasonal rate reduction for Board members only, approving the policy as amended."

CARRIED

A number of policies govern seasonal camping at SCRCA's three campgrounds. To simplify our policies for campers, staff have combined the Seasonal Campground Regulations and Seasonal Campsite Standards into one "Policies and Regulations" document.

Additionally, updates have been made to both the Seasonal Camping Refund Policy and the Golf Cart Rules.

Seasonal Camping Policies and Regulations (item 15.5b) and Golf Cart Rules (15.5c) will follow this report. The Seasonal Camping Refund Policy is included later in the report.

Key Changes:

Seasonal Camping Policies and Regulations

Regulation #	Regulation	Change from Previous
7	Must provide proof of insurance	Insurance was required but proof was not required
9	Personal or recreational use of drones prohibited.	Not in previous regulations. Concerns regarding safety and privacy.
11	E-bikes permitted on roadways only	Not in previous regulations. Can pose safety concern on trails.
14	Cannabis use prohibited during alcohol/cannabis ban, otherwise cannabis permitted on registered site and open spaces	Cannabis use not in previous regulations
15	Cultivation of cannabis is prohibited	Not in previous regulations

64 – 67	Off-season storage and access	Not outlined in previous regulations

Golf Cart Rules

Rule	Change from Previous
Carts must be back on site by 11pm and remain until 8am unless campers have mobility issues requiring cart use during quiet hours	Not in previous rules. Change will reinforce the quiet hour's policy and encourage safe use of golf carts.
Proof of insurance required	Not required in previous rules
Only electric carts allowed	This was a requirement, but not stated in rules
Cannabis rules added to alcohol section	Not in previous rules

Seasonal Camping Refund Policy

Policy	Change from Previous
No refund of seasonal camping deposit	Previous policy did not include the non-refundable deposit that started in the 2021 camping season.
Refund formula based on the number of weeks into the camping season	Old refund policy was 60% until June 1, 30% until July 1, no refund after July 1

SCRCA Seasonal Camping Refund Policy

This policy is intended to maintain good relations with both current and prospective patrons. SCRCA campgrounds will all adhere to this policy to ensure consistency when providing refunds.

When seasonal campers make their full site payment and submit their completed seasonal campsite application, they are committing to becoming a "seasonal camper". These campers then receive a reduced rate for a campsite for the duration of the seasonal camping permit.

Once a seasonal payment is processed refunds must comply with our seasonal camping refund chart. Rather than implementing a "zero refund" policy, seasonal campers may request a refund of their seasonal camping fee (minus non-refundable deposit, minus the off-peak weekly camping rate for each week on site). There will be no refunds for other paid seasonal camping services.

Please note that the refund policy does not apply to site evictions. No refunds are available at any time as a result of a seasonal campsite eviction.

A sample calculation chart of potentially eligible refunds was reviewed.

BD-21-22
Burrell – Westgate
"That the Board of Directors acknowledges the report dated January 27, 2021 on the updates to the Seasonal Camping Policies and Regulations, Golf Cart Rules, and Seasonal Camping Refund Policy documents and further approves the updates and permits staff to implement minor updates in future years."
CARRIED

National Disaster Mitigation Program

The National Disaster Mitigation Program (NDMP) was established by the Government of Canada to address the increasing dangers and costs faced by Canadian Communities as a result of flood events. The program will receive $200 million in funding over the course of five years to improve knowledge regarding flood risks and enhance current flood response programs. These improvements will help protect property and public safety by ensuring more efficient mitigation efforts and recovery procedures following flood events.

Conservation Authorities are on the front lines of the Provincial Flood Forecasting and Warning Program. They are responsible for monitoring and predicting flood flows and water levels within their watersheds, operating flood control structures such as dams and disseminating flood messages to local municipalities and agencies.

SCRCA is proposing to create redundancies within its flood network at critical flood-prone areas and enhance their flood network to ensure emergency preparedness and response by all partners is done as quickly as possible with the latest watershed data. Real - time water level monitoring options will be explored at 2 locations within the SCRCA watershed. Redundancies are proposed at 4-6 sites, in particular the McKeough Dam, Brigden, Wallaceburg and Dresden, with each site receiving an additional power source, data logger, and source of communication, and at least two sites are proposed to have discharge radars installed.

Strategic Objectives(s):

Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion – Improve meteorological data acquisition.

Financial Impact:

The total cost of this project is estimated to be $151,000 with 50% matching funds from municipality. SCRCA has set aside $37,750 for this project and is seeking the remainder from municipalities.

Staff will continue to look into other funding sources to provide additional funds for this project. If approved, the special levy for the municipalities will be determined based on Modified Current Value Assessment, as the levy of the Authority budget. SCRCA is seeking the remainder ($37,750) from remaining Municipalities.

Project Costs	NDMP	Municipal contribution requested	SCRCA
$151,000	$75,500	$37,750	$37,750

BD-21-23
Burrell – McMillan
"That the Board of Directors acknowledges the report dated February 11, 2021 on NDMP funding intake 6 and directs staff to work with member Municipalities to obtain the required matching funding and continue to improve the flood forecasting and warning program."

CARRIED

- 2021 - 2022 Projects will be submitted on February 19, 2021
- The WECI program is still subject to funding approval from the Province
- All applications will be reviewed by a committee of provincial and Conservation Authority staff representatives in late April or early May and will be ranked in comparison to all submitted projects from across the Province
- If funding is confirmed for this program, a list of approved projects may be available in March 2021
- A list of WECI projects for 2021 - 2022 was reviewed.

Brights Grove, Kenwick Street to Helen Avenue – Phase 3A

- SCRCA received 5 submissions on January 12, 2021
- Total tender prices varied from $2,618,713.25 to $6,313,875.00, inclusive of H.S.T
- 56078 Ontario ltd o/a R&M Contractors was awarded the contract work on January 21, 2021 at a value of $2,618,713.25 inclusive of H.S.T. for this shoreline improvement work.
- Construction work is scheduled to start on February 17, 2021

Brights Grove, Kenwick Street to Helen Avenue – Phase 2

- Deficiencies were identified at the toe of shoreline protection
- 17 locations have been identified along this section
- Alternative design has been developed to fix these deficiencies
- We are working with Cope Construction on a timeline for this work

Bright's Grove, Old Lakeshore Road East

- Shoreline Project is complete.
- Minor site restoration work will be completed in April 2021

Strategic Objectives(s):

Build a stronger and more valued organization through business excellence - Continue to seek funding opportunities that can support our municipalities in undertaking projects that improve our watersheds.

Director's Comments:
Director's requested several points of clarification regarding municipal approval of matching funds for WECI grants. It was explained that due to timeline restrictions, funding opportunities are sourced and applied for in advance of municipal approval, however we are in position to decline the funds if municipalities are not in agreement to match required funding. The WECI Committee meets in March, 2021 and SCRCA staff should be informed of the status of our application by mid-April, 2021.

BD-21-24
Miller – Burrell
"That the Board of Directors acknowledges the report dated February 11, 2021 on ongoing status of Water and Erosion Control Infrastructure Projects and further approves the projects submitted for funding in 2021 – 2022, and further will assist staff in obtaining matching funds, where required, to support these projects upon confirmation of funding approval."

CARRIED

Correspondence from the Town of Petrolia dated December 15, 2020 regarding the SCRCA 2021 budget and Bill 229, Protect, Support and Recover from COVID-19 Act – Schedule 6 – Conservation Authorities Act was reviewed.

BD-21-25
Loosley – Dennis
"That the Board of Directors acknowledges the correspondence from the Town of Petrolia, dated December 15, 2020 regarding the SCRCA 2021 budget and Bill 229, Protect, Support and Recover from COVID-19 Act – Schedule 6 – Conservation Authorities Act"

CARRIED

Under New Business

Director Al Broad brought forth information on a proposed project involving the construction of a building within a woodlot to be used as a community mental health retreat. It is requested that SCRCA planning staff work with the applicants to provide possible options and that the initial fee be waived due to the memorial and charitable initiative.

Staff will assist in providing technical guidance and potential options for consideration and will provide a report to the April Board Meeting on the outcome of meetings and/ or correspondence. Director Terry Burrell requests that the report contain current and potential programs within the Conservation Areas that promote mental health.

BD-21-26
Broad – Dennis
"That the Board of Directors directs SCRCA staff to collaborate with Dawn-Euphemia Municipal staff and Lambton County Planners, providing possible options for the proposed project of the Bergsma family, waiving the initial fee and reporting back to the Board of Directors meeting in April, 2021"

CARRIED

BD-21-27
Burrell – Loosley
"That the meeting be adjourned."

CARRIED

Joe Faas
Chair

Brian McDougall
General Manager

Board of Directors Special Meeting Minutes

Date: March 10, 2021 Time: 10:00 a.m.
Remote

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

Regrets: Pat Brown, Bill Dennis, Kevin Marriott, Dan McMillan

Staff Present: Chris Durand, Manager of IT/ GIS; 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

Guests Present: Ashley Didone MNP LLP, Jordan Keuken, MNP LLP

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-21-28
Scott – Kennes
"That the agenda for the Board of Directors Meeting be adopted."

CARRIED

A summarization of the 2020 audit and audit findings was presented by Ashley Didone, MNP LLP.

Director's Comments:
Clarification was requested on reserves and adjustments. 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.

BD-21-29
Stark – McGill
"That the St. Clair Region Conservation Authority accepts the recommendation of the Executive Committee and report from the Authority's auditors, MNP Chartered Professional Accountants LLP, and further approves the 2020 Audited Financial Statements."

CARRIED

Under New Business:

Conservation Authorities Act (CA Act) Updates

- February 2, 2021 – Several governance directives proclaimed
- February 22, 2021 – Ministry of Environment, Conservation and Parks staff provides a response to request for interpretation regarding whether the newly proclaimed directives were retroactive or from the date of proclamation moving forward
- Although this is not a legal interpretation of the changes to the Act, Conservation Authorities across the Province are requesting exceptions in order to work with the directives from the Province rather than seeking legal interpretation
- The request for the exception is supported by the following rationale:
    - the Chair and Vice Chair were acclaimed for 2021
    - Previous Chairs have averaged over 6 years in the position at SCRCA and have confirmed that 2 years is not enough time to fully learn all aspects of the position
    - Annual elections of Chair and Vice Chair positions provide a democratic election process for any interested individuals
- The Minister is seeking to obtain an understanding of all agreements for Board membership being anything other than as described in the CA Act
    - 2 (2) states that the council of each municipality may appoint representatives to the Board of Directors based on population
        - (3) Where the population is 50,000 or more but less than 100,000, three representatives. (City of Sarnia)
        - (4) Where the population is 10,000 or more but less than 50,000, two representatives. (Municipality of Chatham-Kent, Municipality of Strathroy-Caradoc, Township of St. Clair)
        - (5) Where the population is less than 10,000, one representative. (all remaining municipalities except Township of Enniskillen/ Village of Oil Springs and Municipality of Southwest Middlesex/ Village of Newbury)
- Therefore, SCRCA is researching documentation of the agreements confirming the partnerships between Enniskillen and Oil Springs as well as Southwest Middlesex and Newbury regarding Board member appointments for submission to the Minister of Environment, Conservation and Parks

Director's Comments:
Directors discussed the issue of non-compliance in regards to the Chair and Vice Chair term limitations, as well as the matter of non-elected Municipal appointees to the Board. It is agreed that a request for exception be made to the Ministry and that by-laws be amended and approved for compliance moving forward. Suggestions include allowing Chair and Vice Chair term extensions in instances where no additional nominations or expressions of interest are received, as well as the possibility of re-assigning the roles of Chair and Vice Chair after a 2 year term in order to maximize the utilization of the knowledge and experience of those in position.

BD-21-30
Burrell – Miller
"That the Board of Directors request that a report be brought forth to the April, 2021 Board Meeting outlining the potential solutions to ensure compliance with changes made to the Conservation Authorities Act"

CARRIED

BD-21-31
Burrell – Stark
"That the meeting be adjourned."

CARRIED

Joe Faas
Chair

Brian McDougall
General Manager

Staff Report

Meeting Date: April 15, 2021 **Item 5.1**
Report Date: April 7, 2021
Submitted by: Brian McDougall

Subject: General Managers Report

Recommendation:

- That the Board of Directors receive and acknowledge this report

Lambton County Council Request for Municipal Forum

- General Managers of the Ausable Bayfield and St. Clair Region Conservation Authority presented to Lambton County Council on April 7, 2021 regarding the December, 2019 request to attend a municipal forum to advise municipal councilors and staff of changes to the Conservation Authorities Act
- The attached presentation outlines changes to date and those anticipated to be received over the next several months
- Upon the completion of these anticipated changes and updates to each Authority's Board of Directors, a Municipal Forum will be very valuable to provide the requested update on legislative and regulatory changes but also for the open communication and information exchange ensuring that all parties have the best understanding going forward

AUSABLE BAYFIELD CONSERVATION

CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Update on status of changes to Conservation Authorities Act

Lambton County Council

April 7, 2021

Background

- Conservation Authorities and the Conservation Authorities Act (CA Act) have been under review for the last five years
- Over that time:
  - Provincial direction has been divided between the Ministry of Natural Resources and Forestry (MNRF) and the Ministry of Environment, Conservation and Parks (MECP)
  - The CA Act has been amended several times with some of the changes proclaimed and others yet to be proclaimed
  - Provincial funding to Conservation Authorities has been reduced by 50%
- In late 2019, Lambton County Council requested that Lambton County's two Conservation Authorities (Ausable Bayfield and St. Clair Region) attend a consultation session for Lambton County municipality Councils and staff to provide information regarding the changes to Conservation Authority legislation and operations

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Background

- In February 2020, the MECP hosted consultation sessions across the Province to obtain comments from municipal Council members, Authority Board Members and Administrators and other invited representatives
- The consultation session for Lambton County municipal Councils and staff was planned for April 2020
- Mid March 2020 the COVID 19 pandemic took hold in Ontario and changed our schedules and our priorities and continues to impact us today
- MECP conducted a public survey broadening the breadth of comments was completed in the spring of 2020
- In late September, Minister of Environment, Conservation and Parks Yurek addressed Conservation Ontario Council on September 28th - Minister Yurek confirmed that he and his staff continue to process the input received from the consultation session in February and the public survey which followed – Minister Yurek also confirmed that he expected that legislative changes would be forthcoming by year end

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Bill 229 Impacts

- Bill 229 included the following changes to the CA Act which were proclaimed on February 2, 2021:
  - Nothing in the Act shall be construed so as to abrogate or derogate from the protection provided for the existing aboriginal and treaty rights of the aboriginal peoples of Canada 70% of a municipality's appointees must be municipal councillors
  - 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
  - The Minister has the authority to appoint an additional member to a conservation authority to represent the agricultural sector
  - 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

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Bill 229 Impacts

- Bill 229 included the following changes to the CA Act which were proclaimed on February 2, 2021:
  - Minister can appoint one or more investigators to conduct and investigation of an authority's operations, including the programs and services it provides
  - CA must issue Section 28 permit if MZO issued
  - Removal of expropriation ability from Act
  - The Minister may in writing delegate any of his or her powers under this Act to an employee in the Ministry specified in the delegation
  - CA must complete an annual audit and within 60 days of receiving audit report, must make available to public on its website

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Unproclaimed Aspects

- Bill 229 also included the following changes to the CA Act which have not been proclaimed to date:
  - Objects of an authority are to provide mandatory programs, municipal programs and services and any other programs or services that may be provided
  - Mandatory programs and services
    - Program or services that meet any of the following descriptions and that have been prescribed by regulations:
      - related to the risk of natural hazards
      - related to the conservation and management of lands owned or controlled by the authority including any interests in land registered on title
      - duties and functions related to Source Protection Authority
      - duties, function and responsibilities under an Act prescribed by the Regulations
      - Also, other programs and services that have been prescribed in regulations on or before the first anniversary of the day prescribed
      - Lieutenant Governor In Council may make regulations prescribing mandatory programs and services; respecting standards and requirements

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Unproclaimed Aspects

- Bill 229 also included the following changes to the CA Act which have not been proclaimed to date:
  - Municipal Programs and Services
    - Can provide within its area of jurisdiction, municipal programs that it agrees to provide on behalf of a municipality under a MOU or such other agreement. MOU is to be available to the public. Must review MOU at regular intervals
  - Other programs and services
    - CA, within its area of jurisdiction, can deliver any other programs and services that it determines are advisable to further the purposes of the Act.
    - Shall be provided in accordance with such standards and requirements as may be prescribed. If municipal levy is required to deliver the program or service, an Agreement is required
  - Authority shall carry out such consultations with respect to the programs and services it provides as may be required by regulation and in the manner specified by regulation.
  - Must develop and implement a transition plan for the purpose of ensuring that it will be in compliance by a date to be prescribed in regulation.
  - Minister may determine classes of programs and services for which fees may be charged in a policy document

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Unproclaimed Aspects

- Bill 229 also included the following changes to the CA Act which have not been proclaimed to date:
  - Section 28 Permits appeals process altered to provide greater access to appeal
  - Rules for entry without a warrant clarified
  - Stop work orders approved for us
  - Lack of permit penalties increased
  - An authority shall establish such advisory boards as may be required by regulation and may establish such other advisory boards as it considers appropriate
  - Minister may make regulations to prescribe standards and requirements for Agreements for the non-mandatory programs and services
  - Lieutenant Governor In Council may make regulations:
    - Governing the apportionment of an authority's capital costs for projects
    - Governing the apportionment of any authority's operating expenses, prescribing operating expenses, governing the amount that participating municipalities are required to pay,
    - Regarding the process authorities must follow when preparing a budget and the consultations that are required,
    - Providing for rules and procedures governing meetings at which budgetary matters are discussed, including the quorum for such meetings and the rules respecting voting on budgetary matters

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Clarity

- Although the objective of many of these changes was to provide more clarity, there remains several issues which have yet been resolved regarding the proclaimed sections of the CA Act
- A Conservation Authorities Working Group has been established to review proposed regulations which are anticipated to be approved in conjunction with the proclamation of addition sections of the CA Act
- Authorities have been informed that regulations may be brought forward in 2 phases
- The next phase may be brought forward as early as this month and the final phase in early summer
- Conservation Authority Boards are being updated as new information becomes available and will continue to be as we patiently go through this process
- As soon as Authority Boards have an opportunity to review these forthcoming regulations we will be able to provide a fulsome understanding of all changes and next steps to County Council and subsequently to a Municipal Forum

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

St. Clair Conservation

Summary of Changes to the *Planning Act* (1 only) and *Conservation Authorities Act* per Bill 229 Schedule 6, Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs and Date in Force for each Section Item 5.2

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
Aboriginal or treaty rights	1.1	For greater certainty, nothing in the Act shall be construed so as to abrogate or derogate from the protection provided for the existing aboriginal and treaty rights of the aboriginal peoples of Canada as recognized and affirmed in Section 35 of the Constitution Act, 1982	**No Action**	February 2, 2021
Municipal Appointments	14 (1.1) & (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 MECP 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 well in advance of their next scheduled appointment date	February 2, 2021
Municipal Agreements	14 (2.2) & (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:** 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	February 2, 2021
Agricultural Appointee	14 (4) & (4.0.1)	The Minister has the authority to appoint an additional member to a conservation authority to represent the agricultural sector.	**No Action at this time**. If the Minister appoints an agricultural representative staff will provide an orientation briefing to the new member.	February 2, 2021

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
	& (4.1)	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	**BMP Action:** Possibility to include reference in the *CO Model Administrative Bylaw* document and an update to the Administrative By-law re: 'Governance: Member appointments' e.g. voting powers	
Agenda/ Minutes	15 (2.1) & (2.2)	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. Both to be available by posting on website or by any other means the authority considers appropriate.	**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' **BMP Action:** make agendas and minutes available to public on CA website	February 2, 2021
Chair/Vice Chair Term	17 (1.1) & (1.2) & (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	February 2, 2021
Powers of authorities	21 (1)(a)	Research removed as stand-alone power i.e. (p) deleted and combined with (a) to **research**, study and investigate the watershed and to support the development and implementation of programs and services intended to further the purposes of the Act.	**Required Action:** Update to the Administrative By-law re: 'Introduction: Powers of authorities'.	February 2, 2021

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
	21 (1)(b)	Consent of the occupant or owner is a specific requirement to enter into and upon any land for the specified purposes (b) For any purpose necessary to any project under consideration or undertaken by the authority **to enter into and upon any land, with consent of the occupant or owner** and survey and take levels of it and make such borings or sink such trial pits as the authority considers necessary.	**Required Action**: review and update CA policies and train staff in this regard; it is understood that current practice is that CAs typically give notice and obtain permission prior to entering land. Update to the Administrative By-law re: 'Introduction: Powers of authorities'	February 2, 2021
	21 (1)(c)	Removed ability to expropriate land.	**Required Action:** Update to the Administrative By-law re: 'Introduction: Powers of authorities'. [NOTE: Additional actions may be CA specific if expropriation was actively being pursued].	February 2, 2021
Appointment of an Investigator and Appointment of an Administrator	23.1 (1)-(10) & 23.2 (1)-(3) & 23.3 (1)-(6)	Minister can appoint one or more investigators to conduct and investigation of an authority's operations, including the programs and services it provides. Investigator powers: • 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. **Investigators have immunity (if done in good faith).**	**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 and CA could be taken over by an administrator. **BMP Action:** Possibility to include reference to these new sections in the Background section of the *CO Model Administrative Bylaw* document.	February 2, 2021

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
		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: • 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. Administrator has power to: • 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)**		
Section 28 Permits, Minister's Zoning Order	28.0.1	**CA must issue permit if MZO issued.** • CA can not refuse the permit. • Can apply conditions, including conditions to mitigate flooding, erosion, dynamic beaches, pollution or conservation of land, or might jeopardize the health or safety of persons or result in the damage or destruction of property, or any other matter to be prescribed by regulation.	Where a permit is required in an area covered by a Minister's Zoning Order and the area is not within the Greenbelt, an authority is required to issue a permit and may include conditions on the permit. The applicant may appeal the conditions to the Minister for a review or to the LPAT. In addition, the authority is required to enter into an agreement with the applicant and potentially others that sets out "actions or requirements that the holder of the permission must complete or satisfy in order to compensate for ecological impacts" that may result	December 8, 2020

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
		• Can only attach conditions if application is given opportunity for a Hearing. The conditions cannot conflict with the zoning order. • Applicant within 15 days can appeal to Minister to review proposed conditions. Minister must reply in 30 days if they intend on conducting the review. • Minister can remove conditions or add additional conditions. Minister must consider same tests as CA. • Alternatively, the applicant within 90 days can appeal conditions to LPAT • Requires the CA (and possibly a municipality) to enter into an agreement with developer to compensate for ecological impacts and any other impacts that may result from development of the project • Minister may make regulations prescribing requirements (i.e. timelines for CA to issue permits, content of agreements, "respecting anything that is necessary or advisable for the effective implementation or enforcement of this section").	from the development. Development cannot begin until such an agreement has been entered into. **Required Action**: If Minister's Zoning Order is issued in CA's jurisdiction outside of the Greenbelt then the CA is required to issue permission for the development project. **BMP Action:** CAs should consider: -Developing and endorsing compensation guidelines for their CA -Updating their fee schedule to reflect the expedited nature of a MZO permit and the costs associated with the development and execution of an agreement -Updating and endorsing changes to their S. 28 administration policies -Updating and endorsing changes to their S. 28 Hearing Guidelines -Providing early comments to municipal Council when they are considering a MZO request	
Remove ability to expropriate lands	31	Removal of expropriation ability from Act.	CA may request the municipality or province to expropriate lands and it was unlikely to have been done only by a CA in any case. **No Action** [NOTE: Additional actions may be CA specific if expropriation was actively being pursued]	February 2, 2021
Delegation of Power	36.1	The Minister may in writing delegate any of his or her powers under this Act to an employee in the Ministry specified in the delegation, other than the power to make a regulation under this Act.	Ministry staff may make future decisions (depending on delegation) on behalf of the Minister where the Minister is named in the Act. **No Action**	February 2, 2021

Summary of Changes to the *Planning Act* (1 only) and *Conservation Authorities Act* per Bill 229 Schedule 6, Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs and Date in Force for each Section — Item 5.2

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
Annual Audit	38 (1) & (4)	Annual audits are still required by a person licensed under the *Public Accounting Act*, 2004 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. **Within 60 days** of receiving audit report, must make available to public on its website and any other means the authority considers appropriate.	**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'. **BMP Action:** make audit report available to public on CA website	February 2, 2021
Public Body	1 (4.1) & (4.2)	*Planning Act* was amended to remove Conservation Authorities as a public body under the legislation for the purposes of appealing or being party to certain matters before the LPAT unless the appeal relates to a "prescribed natural hazard" or the conservation authority was the applicant for a consent.	**No Action at This Time.** Should these changes be enacted, update of CA Planning Policies and the CO Client Service and Streamlining Initiative Documents will be required.	To be proclaimed at a later date by LGIC
Objects of the Authority	20(1)	Objects changed from: • to provide, in area over which it has jurisdiction, programs and services designed to further the conservation, restoration, development and management of natural resources, other than gas, oil, coal and minerals to: Objects of an authority are to provide: • Mandatory programs • Municipal programs and services • Any other programs or services that may be provided under Section 21.1.2	**No Action at this time**	To be proclaimed at a later date by LGIC
Programs and Services	21.1 (1) & (2)	*Mandatory programs and services*	**Action TBD:**	To be proclaimed at a later

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
	& 40 (1)(b)	Program or services that meet any of the following descriptions and that have been prescribed by regulations: I. related to the risk of natural hazards II. related to the conservation and management of lands owned or controlled by the authority including any interests in land registered on title III. duties and functions related to Source Protection Authority IV. duties, function and responsibilities under an Act prescribed by the Regulations Also, other programs and services that have been prescribed in regulations on or before the first anniversary of the day prescribed. Lake Simcoe Region Conservation Authority to deliver programs and services prescribed by regulations LGIC may make regulations prescribing mandatory programs and services; respecting standards and requirements applicable to programs and services	**Anticipated Required Action:** Review current scope of programs and services and make adjustments to align with regulated standards and requirements	date by LGIC
	21.1.1 (1)-(5)	*Municipal Programs and Services* Can provide within its area of jurisdiction, municipal programs that it agrees to provide on behalf of a municipality under a MOU or such other agreement. MOU available to the public Must review MOU at regular intervals Programs and services as set out in MOU, and, with such standards and requirements as may be prescribed If conflict between the two, prescribed standards and requirements prevail	**Action TBD:** **Anticipated Required Action:** Establish agreements with municipalities and make agreements available for public review	To be proclaimed at a later date by LGIC

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
	21.1.2 (1)-(4)	*Other programs and services* CA, within its area of jurisdiction, can deliver any other programs and services that it determines are advisable to further the purposes of the Act. Shall be provided in accordance with such standards and requirements as may be prescribed If municipal levy is required to deliver the program or service, an Agreement is required	**Action TBD:** **Anticipated Required Action:** Define program and services and where required obtain municipal agreement to assess a levy for financing	To be proclaimed at a later date by LGIC
	21.1.3	*Consultation* Authority shall carry out such consultations with respect to the programs and services it provides as may be required by regulation and in the manner specified by regulation.	**Action TBD:** **Anticipated Required Action:** Deliver consultation as required	To be proclaimed at a later date by LGIC
	21.1.4 (1) & (2)	*Transition Plan re: s.21.1.2(2)* Must develop and implement a transition plan for the purpose of ensuring that it will be in compliance by a date to be prescribed in regulation. The contents of the Transition plan are to include: • Inventory of authority's programs and services • Consultation with member municipalities on the inventory • If municipal levy required for any programs, step to be taken to enter into Agreements • Such other matters as prescribed in regulation	**Action TBD:** **Anticipated Required Action:** Develop and implement a transition plan for municipal program and services and other program and services	To be proclaimed at a later date by LGIC
Fees for Programs and Services	21.2 (1)-(9)	The Minister may determine classes of programs and services to what fees may be charged in a policy document. • Can only charge a fee for a program or service only if it is set out in the list of classes of programs and services.	**No Action at this time; anticipated required action:** Review the Authority's current fee policy, fee schedule and a fee reconsideration process and make any required adjustments to align with legislative and regulatory requirements.	To be proclaimed at a later date by LGIC

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
		• Fee shall the amount prescribed in regulation or if no amount prescribed, the amount determined by the authority. • Each CA must prepare and maintain a fee schedule. • Must adopt a written Fee Policy, including fee schedule, frequency of review, process for review, notice of review procedures, how to notify of changes, how person can request reconsideration of fee and procedures for reconsideration. Policy must be made available to the public. Must notify public of changes. • Upon reconsideration of a fee can: order person to pay fee; vary the amount; or order no fee. • If a permit fee reconsideration, must make decision within 30 days, or person can appeal to LPAT. • If after reconsideration, person can pay the fee, indicating it is under protest and within 30 days appeal to LPAT. • LPAT can dismiss appeal; vary the amount or order no fee. • LPAT can order a refund as they determine.		
Section 28 appeal process	28 (8-26)	Applicants can appeal directly to Minister within 15 days if refused a permit or opposes conditions. • Minister must post on Environmental Registry of Minister's plan to review decision of Authority. • No hearing required. • Minister decision is final. Applicants can appeal to LPAT within 90 days of denial or issuance of opposed conditions or no decision by Authority (after 120 days).	**Action TBD:** *"how conservation authorities will regulate development and other activities to ensure public safety through natural hazard management"* **Anticipated Required Action:** Review the Authority's current sec. 28 permitting policies and make any required adjustments to align with legislative and regulatory requirements	To be proclaimed at a later date by LGIC

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
		• Applicant cannot apply to both appeal streams unless Minister has failed to reply in 30 days.		
Permits issued by Minister under Section 28	28.1.1	Minister can direct an Authority to not issue a permit and then has the power to issue the permit themselves. Decision is final.	Permitting decisions can be made at the Minister's discretion. **No Action**	To be proclaimed at a later date by LGIC
Public Use of Authority Lands	29	No changes made via Bill 229 however 21.1 (1) prescribes programs and services related to the conservation and management of lands owned or controlled by the authority, including any interests registered on title as a mandatory program and service.	**Action TBD:** *"Minister's regulation under Section 29 of the CAA relating to CA operation and management of lands owned by the CA"* **Anticipated Required Action:** Review the Authority's current land management practices and make any required adjustments to align with regulatory requirements. Update Authority's regulatory compliance guidelines to be consistent with new S. 29 regulation. Update the Conservation Ontario Regulatory Compliance Guidelines.	n/a
Entry without a warrant, permit application	30.2(1)	An officer appointed by the Authority, may enter land with Authority's area of jurisdiction, without a warrant and without the consent of the owner or occupier if: • Permit application submitted • Entry is for the purpose of determining whether or not to issue a permit. • Officer has given reasonable notice of the entry to the owner or occupier of the property.	**Action TBD:** **Anticipated Required Action:** Create CO Operating Procedure for entry onto private property for enforcement and non-enforcement purposes and provide staff training	To be proclaimed at a later date by LGIC
Entry without a warrant, compliance	30.2 (1.1)	An officer appointed by the Authority, may enter land with Authority's area of jurisdiction, without a warrant and without the consent of the owner or occupier if: • For the purpose of ensuring compliance with Act/regulations or with the condition of an issued permit;	**Action TBD:** **Anticipated Required Action:** Create CO Operating Procedure for entry onto private property for enforcement and non-enforcement purposes and provide staff training	To be proclaimed at a later date by LGIC

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force

		• Officer has reasonable grounds to believe that a contravention is occurring and is causing or likely to cause significant damage and;
		  ○ The damage affects or is likely to affect the control of flooding, erosion, dynamic beaches or pollution or the conservation of land, or
		  ○ The event of a natural hazard, the damage will or is likely to create conditions or circumstances that might jeopardize the health and safety of persons or result in damage or destruction of property, and
		• The officer has reasonable grounds to believe the entry is required to prevent or reduce the effects or risks		

Stop (Work) Orders	30.4 (1)	An officer makes an order requiring a person to stop engaging in or not to engage in an activity if an officer has reasonable grounds to believe that:
		• Activity is or will contravene regulations or conditions of a permit.
		  ○ Activity has caused, is causing or will cause significant damage, and the damage affects or is likely to affect the control of flooding, erosion, dynamic beaches or the pollution or the conservation of land, or
		  ○ In the event of a natural hazard the damage will or likely to create conditions or circumstances that might jeopardize the health and safety of persons or result in damage or destruction of property, and
			This tool was left in the Act to be proclaimed at a later date (was proposed to be removed). It will be a tool that will assist in ensuring compliance without having to go court.
			
			Action TBD:
			
			Anticipated Required Action: Create CO Operating Procedure to ensure consistent use of the stop work order powers and provide staff training
				To be proclaimed at a later date by LGIC

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
		• the order will prevent or reduce the damage. Order shall: • Specify the provision that officer believes is being contravened. • Describe nature of contravention and its location. • State that a hearing on the order may be requested. • Be served personally or by registered mail.		
Offences	30.5 (1)	New offences will be prescribed for contravening the Act, regulation or conditions of a permission. The penalties include: • Individual: <$50, 000 or a term of imprisonment of not more than 3 months, or both and an additional fine of <$10, 000 per day • Corporation: <$1, 000, 000 and an additional fine of <$200, 000 per day	**Action TBD:** **Anticipated Required Action:** Update Authority's regulatory compliance guidelines to be consistent with new Act. Update the Conservation Ontario Regulatory Compliance Guidelines.	To be proclaimed at a later date by LGIC
Advisory Boards	18 (2) & 40 (1)(a)	In Act as of 2017: • An authority shall establish such advisory boards as may be required by regulation and may establish such other advisory boards as it considers appropriate. New: LGIC may make regulations: • Governing advisory board established under Section 18(2), including requiring an authority to establish one or more advisory boards and prescribing requirements with respect to composition, functions, powers, duties, activities and procedures of any advisory board that is established.	**Action TBD:** *"the requirement for conservation authorities to establish community advisory boards"* **Anticipated Required Action:** Establish an advisory board in accordance with the regulations.	To be proclaimed at a later date by LGIC

Summary of Changes to the *Planning Act* (1 only) and *Conservation Authorities Act* per Bill 229 Schedule 6, Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs and Date in Force for each Section Item 5.2

Area of Impact	Section	Change to Act	Interpretation, Required Actions and DRAFT BMP Actions Recommended for CAs	Date in Force
Capital/ Operating Expenses; Municipal Levy	40 (1)(c) & (1)(e)	LGIC may make regulations: • Governing the apportionment of an authority's capital costs for projects • Governing the apportionment of any authority's operating expenses, prescribing operating expenses, governing the amount that participating municipalities are required to pay, including fixed amounts, and restricting and prohibiting the apportionment of certain types of operating expenses.	**Action TBD:** *"details on municipal levies related to mandatory and non-mandatory programs and services"* **Anticipated Required Action:** Review current structure, processes, rules and procedures for preparing and approving a budget and the apportionment of a levy and make any required adjustments to align with legislative and regulatory requirements	To be proclaimed at a later date by LGIC
Budget process	40 (1)(f)	LGIC may make regulations: • Regarding the process authorities must follow when preparing a budget and the consultations that are required, • Providing for rules and procedures governing meetings at which budgetary matters are discussed, including the quorum for such meetings and the rules respecting voting on budgetary matters.	May be required changes to preparing, consulting and approving budgets. **Action TBD:** **Anticipated Required Action:** Review current structure, processes, rules and procedures for preparing and approving a budget and the apportionment of a levy and make any required adjustments to align with legislative and regulatory requirements.	To be proclaimed at a later date by LGIC
Non-mandatory programs and services	40 (3)(c)	Minister may make regulations to prescribe standards and requirements for Agreements for the non-mandatory programs and services	**Action TBD:** *"standards for the delivery of non-mandatory programs and services*"	To be proclaimed at a later date by LGIC

Staff Report

Meeting Date: April 15, 2021 **Item 5.3**
Report Date: April 6, 2021
Submitted by: Brian McDougall

Subject: Request for a Minister's exception

Recommendation:

- That the Board of Directors requests an exception from the Minister of Environment, Conservation and Parks regarding Subsection 17(1.3) of the Conservation Authorities Act – Chair and Vice Chair provisions and endorses the covering letter and application outlining the request to permit Chair and/ or Vice Chair terms to be no greater than 2 years, subject to annual elections and subject to nominated candidates other than the immediate past Chair and/ or Vice Chair and that this exception recognizes that the term limits be implemented from the elections of the 2021 Annual General meeting going forward and still further that this be outlined in an update to the Authority's bylaws
- This motion requires a recorded vote which will be required to be submitted with our application

Conservation Authorities Act (CA Act) Updates

- February 2, 2021 – Several governance directives proclaimed
- February 22, 2021 – Ministry of Environment, Conservation and Parks staff provides a response to request for interpretation regarding whether the newly proclaimed directives were retroactive or from the date of proclamation moving forward
- Although this is not a legal interpretation of the changes to the Act, Conservation Authorities across the Province are requesting exceptions in order to work with the directives from the Province rather than seeking legal interpretation
- The request for the exception is supported by the following rationale:
    - The Chair and Vice Chair were acclaimed for 2021
    - Previous Chairs have averaged over 6 years in the position at SCRCA and have confirmed that 2 years is not enough time to fully learn all aspects of the position
    - Annual elections of Chair and Vice Chair positions provide a democratic election process for any interested individuals

St. Clair Region Conservation Authority
205 Mill Pond Cres., Strathroy, ON, N7G 3P9
(519) 245-3710 (519) 245-3348 FAX
E-Mail: stclair@scrca.on.ca
Website: www.scrca.on.ca

Member Municipalities

Township of Adelaide-Metcalfe

Municipality of Brooke-Alvinston

Municipality of Chatham-Kent

Township of Dawn-Euphemia

Township of Enniskillen

Municipality of Lambton Shores

Municipality of Middlesex Centre

Village of Newbury

Village of Oil Springs

Town of Petrolia

Town of Plympton-Wyoming

Village of Point Edward

City of Sarnia

Municipality of Southwest Middlesex

Township of St. Clair

Municipality of Strathroy-Caradoc

Township of Warwick

April 15, 2021

Minister of Environment, Conservation & Parks
College Park 5th Flr,
777 Bay St,
Toronto, ON M7A 2J3

Dear Minister Yurek,

The Board of Directors of the St. Clair Region Conservation Authority (SCRCA) is respectfully requesting an exception under Subsection 17(1.3) of the Conservation Authorities Act - Chair and Vice-Chair Provisions.

The attached application outlines our request which will provide further clarity to our organization, recognizes the importance of annual democratic elections and permits Chairs and Vice Chairs with unanimous support to continue to provide leadership to our organization.

If you have any questions or require further information, please contact the undersigned at your convenience.

Sincerely,

Joe Faas
Chair

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (a)**
Report Date: March 1, 2021
Submitted by: Ashley Fletcher

Subject: Business Arising

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

Regarding BD-20-87
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.
Ongoing

Regarding BD-20-109
Directors request a more fulsome report and/ or a presentation to better understand the Regulations as they relate to the Drainage Act.
Please refer to Item 9.2

Regarding BD-21-18
It is requested that staff present a full report to the April Board meeting giving both short term and long term costs for repair of the Highland Glen boat launch.
Refer to Item 8.1

Regarding BD-21-26
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.
Ongoing
Update provided under Item 7.1 (h)

Regarding BD-21-29
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.
Refer to Item 7.1 (l)
Report on reserves deferred to June

Regarding BD-21-30
Directors request that a report be brought forth to the April, 2021 Board Meeting outlining the potential solutions to ensure compliance with changes made to the Conservation Authorities Act.
Refer to Item 5.1

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (b)**
Report Date: April 1, 2021
Submitted by: Emily De Cloet

Subject: Watershed Conditions Update

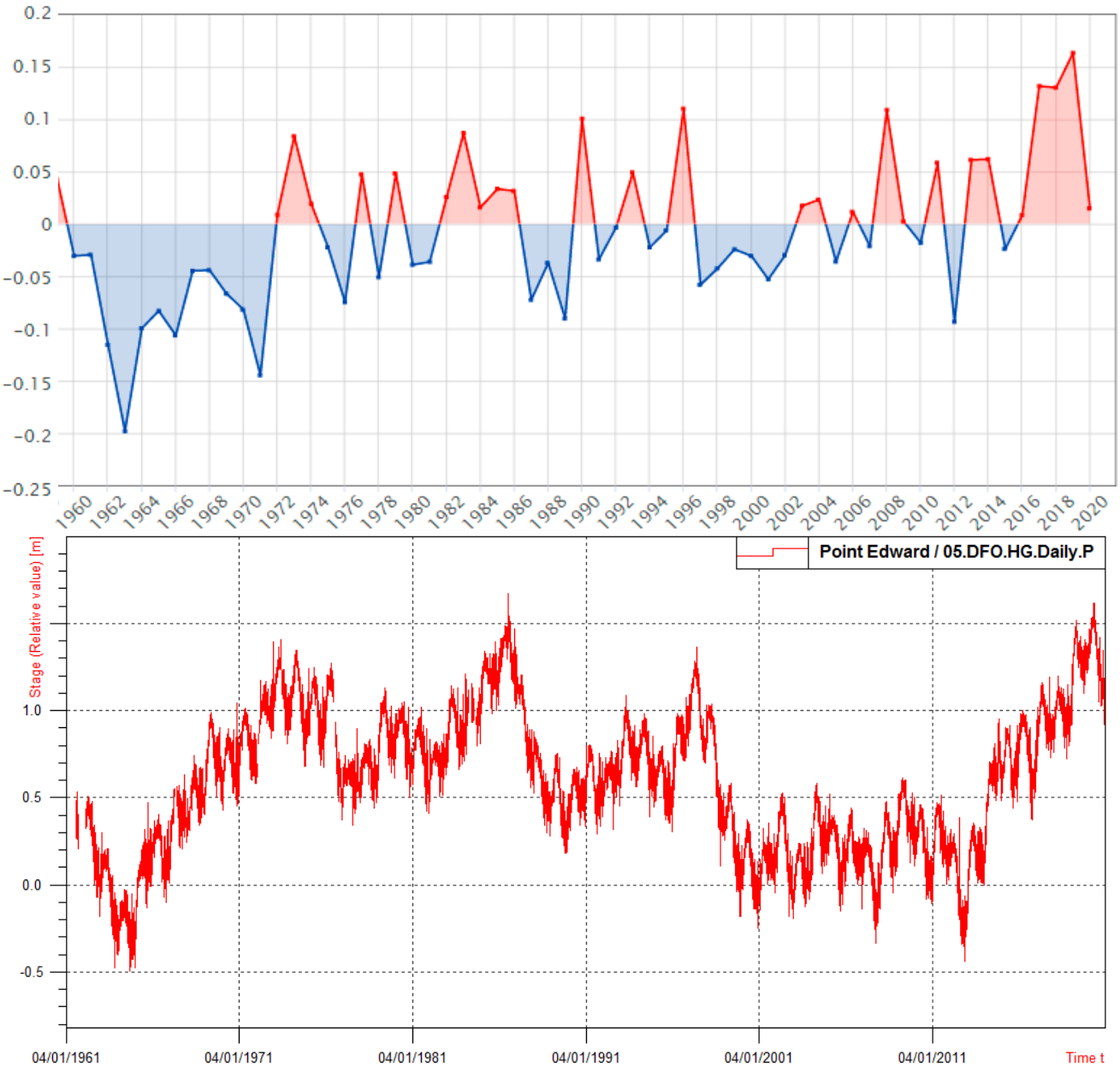
Report Highlights:

- Water levels on Great Lakes and in Wallaceburg well below levels from last year
- Six-month water level projections predicting levels to be below 2020 record highs
- Precipitation amounts for the region are below normal
- Spring winds have prompted bulletins for shorelines

Water Levels

Levels on the Great Lakes and at the outlet of the Sydenham River at Wallaceburg are greatly dependent on precipitation trends in the Great Lakes watershed. Water levels impacted by precipitation trends typically see fluctuations on a long-term temporal scale, with a resulting delay of approximately a year. Figure 1, below, depicts annual precipitation anomalies (deviation from normal values) for the Great Lakes region compared to water levels on Lake Huron at Point Edward.

Figure 1: Great Lakes watershed precipitation anomalies compared to water levels on Lake Huron at Point Edward.



Above normal precipitation trending since 2015 saw a steady rise in water levels on the Great Lakes. The return of the precipitation anomaly from above normal to near normal (drop beginning in 2019) is starting to see water levels drop on the surrounding lakes, and as a result has reduced the impact of levels in Wallaceburg. As of this report, water levels on the Sydenham River in Wallaceburg are not a significant concern, with approximately 40 cm of freeboard.

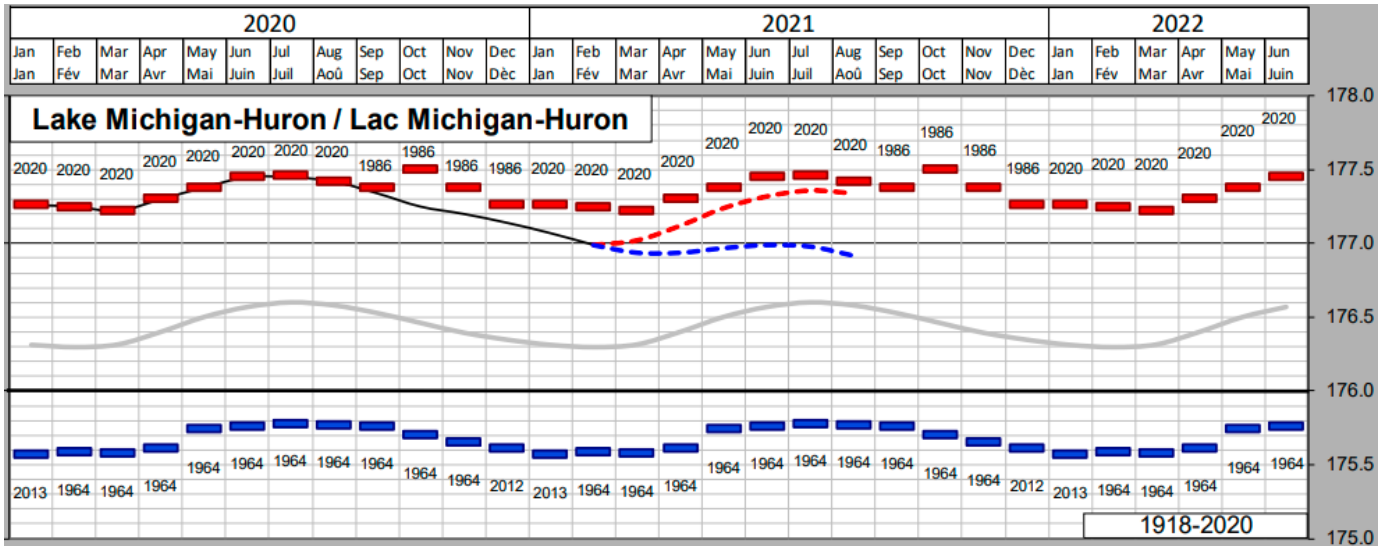
Recent low pressure systems have brought rain and strong winds to the region, prompting numerous water safety and flood watch bulletins. While water levels are lower compared to last year, wind-driven storm surge, increased wave action and possible erosion remain a concern for shorelines.

Table 1: Great Lakes water level statistics. Fisheries and Oceans Canada, 2021.

February 2021	Lake Huron	Lake St. Clair	Lake Erie
Mean for Month (Preliminary Data)	176.99	175.47	174.57
Mean for Month Last Year	177.25	175.79	174.90
Change	**-0.26**	**-0.32**	**-0.33**
Mean for Month, Last 10 years	176.37	175.03	174.26
Change Compared to Current	**0.62**	**0.44**	**0.31**
Mean for Month, All Time	176.30	174.81	174.01
Change Compared to Current	**0.69**	**0.66**	**0.56**
Statistics for Period of Record			
Maximum Monthly Mean / Year	177.25	175.80	174.90
	2020	1986	2020
Change Compared to Current	**-0.26**	**-0.33**	**-0.33**
Minimum Monthly Mean / Year	175.59	173.89	173.18
	1964	1926	1936
Change Compared to Current	**1.40**	**1.58**	**1.39**
Next Month Estimate			
Probable Mean for Next Month (March)	176.98	175.55	174.60
Preliminary Mean Levels for March	176.90	175.54	174.58

- Water levels are down approximately 30 cm compared to last year on the surrounding lakes
- Levels are approximately 55-70 cm above all-time average water levels
- Preliminary water levels for March were near the predicted levels made in February

Figure 2: Six month water level projection for Lake Huron (elevation in metres). Fisheries and Oceans Canada, 2021.



- Six-month water level forecast for Lake Huron predicts water levels will be below the record levels made in 2020

Precipitation

Trends over the past six months have resulted in precipitation amounts for the region well below the normal averages, however a wet August which saw double the normal precipitation has helped bring regional averages for the past twelve months to within a normal range (Table 2).

Table 2: Precipitation summary for the region and surrounding areas. Government of Canada, 2021.

Precipitation (mm)	Sarnia		Strathroy		London		Windsor	
Last Quarter	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal
January	28.9	50.1	35.8	75.3	37.2	74.2	19.9	57.6
February	26	47.7	63.2	61.1	39.5	60	12	57.3
March	57.7	62.6	30.2	74.9	43	78.4	58.7	75
Averages								
last 3 month totals	112.6	160.4	129.2	211.3	119.7	212.6	90.6	189.9
last 3 month % of normal	70.2%		61.1%		56.3%		47.7%	
regional average	**58.8%**							
last 6 month totals	276.9	370.8	369.4	469	334.1	469.9	249.5	405
last 6 month % of normal	74.7%		78.8%		71.1%		61.6%	
regional average	**71.5%**							
last 12 month totals	759.1	846.8	859.8	945.1	818.5	987	713.9	918.4
last 12 month % of normal	89.6%		91.0%		82.9%		77.7%	
regional average	**85.3%**							

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (c)**
Report Date: April 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

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Recommendation:

That the Board of Directors support the ongoing 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 lead the project work to develop an engineering and design plan for managing contaminated sediment in three priority areas of the St. Clair River. Funding for this project has been provided by Environment and Climate Change Canada (ECCC), the Ontario Ministry of the Environment, Conservation and Parks (MECP) and Dow Canada. The parties that provided funding are actively participating in oversight of the project work through a Sediment Management Oversight Committee.

Following a competitive procurement process, the SCRCA retained Parsons Inc. in August 2019 to prepare the engineering and design plan. Shortly afterwards, work on the plan commenced that included a field component. Field activities were conducted in Fall 2019, Summer 2020, and Fall 2020 and involved the following:

- Water velocity measurements and the sampling of surface sediment to assess sediment stability,
- The collection of a number of shallow sediment samples and deep core sediment samples to measure mercury concentrations at various depths,
- The use of an underwater camera to assess the condition of structures in certain areas, and
- A bathymetry survey to map out portions of the bottom of the river along the shoreline.

Additional health and safety measures were incorporated to address provincial and federal requirements related to COVID-19.

In November, 2020 Parsons made a presentation to the Sediment Management Oversight Committee, summarizing the results of the sediment sampling, including how it compared to historical results.

Additional presentations were made to the Oversight Committee by Parsons in December, 2020 and January, 2021 to report on the outcome of further analysis of the sampling results and their recommended approach for managing the contaminated sediment.

Update:

The Oversight Committee met with Parsons on February 11, 2021 to review and provide feedback on their draft presentation for the Sediment Management Executive Committee. The Executive Committee consists of Senior Managers from each of the funding partners. The presentation was amended based on feedback received and a presentation was made to the Executive Committee on February 25, 2021. The Executive Committee requested additional time to consider the information presented and to decide on whether they concur with the consultant's recommended approach for managing the contaminated sediment.

To assist the consultant in the development of an updated project schedule and a reassessment of project costs, the SCRCA developed a draft flow chart on anticipated next steps, including outreach activities. The flow chart was shared with the consultant and discussed with the Sediment Management Communications Team on March 24, 2021.

An updated draft project schedule, scope of work and estimated budget was submitted to the SCRCA by Parsons on March 26, 2021. The Oversight Committee discussed the submission with Parsons on March 31, 2021 and requested a reassessment of the submission for opportunities to reduce the project timing, scope of work and costs for specific activities. A revised submission is anticipated in early April 2021 for review by the Oversight Committee.

Following confirmation of the Executive Committee's concurrence with the recommended approach for managing the contaminated sediment, and the Oversight Committee's acceptance of the updated project schedule, scope of work and budget, the SCRCA will begin working with the Communications Team to prepare material for anticipated outreach activities. Timing will be dependent on the revised updated schedule to be submitted by Parsons.

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 carefully 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.

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (d)**
Report Date: April 1, 2021
Submitted by: Girish Sankar

Subject: Shoreline Protection – Phase 3A

Recommendation:

That the Board of Directors acknowledges the report dated April 1, 2021 on the status of Shoreline projects along Brights Grove.

Background:

Brights Grove, Kenwick Street to Helen Avenue – Phase 3A

- R&M Contractors was awarded the contract on January 21, 2021 at a value of $2,618,713.25 inclusive of HST.
- Shoreline construction work started on February 17, 2021
- All in-water work has been completed as of March 31, 2021
- Construction work has been very smooth with no issues, with an expected completion of May 15, 2021 including the road and site restoration works.
- We continue to receive positive feedback from the City of Sarnia and its community members.

Phase 3A – Construction Progress – Looking east

Brights Grove, Kenwick Street to Helen Avenue – Phase 2

- Alternative design has been developed, reviewed and accepted
- We are working with Cope Construction on a timeline for this work
- This work is expected to start July 15, 2021

Brights Grove, Kenwick Street to Helen Avenue – Phase 3

- City of Sarnia is offering legal assistance in this matter
- A mediation between AMICO and The City of Sarnia was scheduled on March 25, 2021
- A resolution has been reached
- An agreement with the details of settlement is underway.

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (e)**
Report Date: April 1, 2021
Submitted by: Jessica Van Zwol, Healthy Watershed Specialist

Subject: Healthy Watersheds Update

Recommendation:

That the Board acknowledges the report dated April 1, 2021 on Healthy Watersheds Program Update

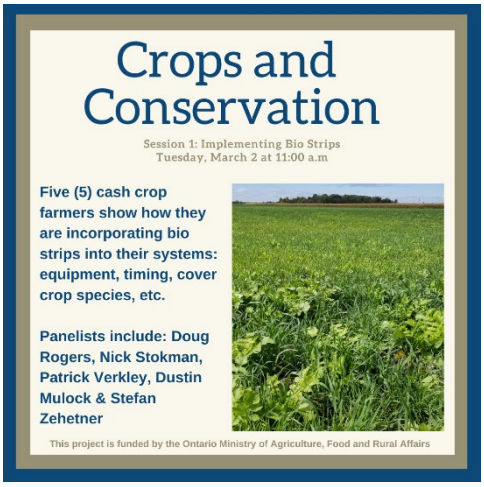
Background:

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.

Update on the Healthy Watershed Program

Jessica Van Zwol was invited to join the "Soils at Guelph"/Midwest Cover Crop Council Conference advisory committee. This conference is full of useful and practical information that farmers in our watershed could utilize. Jessica hosted a panel discussion on implementing cover crops on Wednesday February 24th at 9:30 am (funded through EcoAction).

SCRCA coordinated a virtual webinar series with Lower Thames Valley, Essex Region, Long Point, Catfish Creek, and Kettle Creek Conservation Authorities to promote agricultural BMPs in southwestern Ontario. The series was called “Crops & Conservation” – the same title used by the Conservation Authorities that provide quarterly updates to the St. Clair Region Soil & Crop Improvement Association.
The SCRCA bio strips webinar was hosted by Jessica Van Zwol on Tuesday March 2 at 11 am and showcased the practices of 3 farmers from the SCRCA watershed. Fifty-eight people participated in the live webinar and a good discussion ensued. This event (as well as the others in the series) is geared to SCRCA farmers as well as Lake Erie farmers (funded through OMAFRA COA).



The Biology department participated in a DFO-led webinar on aquatic species at risk in the SCRCA and Essex Region Conservation Authority watersheds. The webinar also provided an opportunity for DFO staff to provide clarity on regulations and processes involved with working in or near water. Our role was to reach out to local consultants, drainage superintendents, drainage engineers, and contractors in our watershed that work in or near water. We invited over 100 people to the webinar and 76 people attended (9 DFO staff and 67 non-DFO). The event was held on March 11 – thanks to the board members who attended!

Jessica Van Zwol and Emily De Cloet were invited to speak at a Virtual Information Night for members of Centre Ipperwash Community Centre. Daniela Klicper from Lake Huron Coastal Centre for Conservation spoke about Coastal Stewardship that beachfront landowners can implement to preserve the Lake Huron shoreline. Emily spoke about water levels in Lake Huron and Jessica shared about opportunities about stewardship projects and extended SCRCA’s gratitude to the tireless volunteers in the Ipperwash Area that clean up the beach daily and removing the invasive Phragmites and sweet clover. Over 70 people attended the event.

Lambton Wildlife Inc. invited Craig Paterson, Biology department, to present on our 2020 Round Goby fish monitoring program (funded by DFO). The presentation was livestreamed to Facebook and within 24 hours, the presentation had over 227 views.

This screenshot captures the banner page that Lambton Wildlife Inc. used to advertise the webinar

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. Make sure you check out our social media for posts on #musselmonday, #treetuesday and #fishyfriday posts. Roland and his research will be featured in the next Conservation Update.

Strategic Objectives(s):

The Healthy Watershed Program fulfils 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.

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (f)**
Report Date: March 31, 2021
Submitted by: Kelli Smith

Subject: Loss of provincial support for the Canada Ontario Agreement – Great Lakes Water Quality Monitoring Program and the value of the data from this program to SCRCA and partners

Recommendation:

That the Board of Directors acknowledges the report on the proposed loss of support from the Ministry of Environment Conservation and Parks (MOECP) for the COA Great Lakes water quality monitoring program and the value that these data have for the St. Clair Region Conservation Authority and other research and community partners.

Background:

In March, at a request to reduce lab loads by the province, St. Clair Region Conservation Authority (SCRCA) staff were approached by the Ministry of Environment Conservation and Parks (MOECP) to demonstrate the importance of the current surface water quality monitoring programs implemented by the SCRCA, and justify the continuation of these programs, particularly the COA Great Lakes Water Quality program. It is proposed to either temporarily stop sampling for this program or remove it. The MOECP's southwestern regional office has been providing lab sample analyses to the SCRCA annually since 2004 under the Canada-Ontario Agreement (COA) on Great Lakes Water Quality. The COA monitoring started with six locations in 2004 and was expanded to 11 locations by 2008, six of which are sampled bi-monthly amounting to a total of eight sites each month during the ice-free periods. Samples are analyzed for basic water quality parameters similar to those used for PWQMN including nutrients and metals. The main objective of this monitoring program is to protect regional surface water resources by providing reliable and current information on stream water quality. This allows data users to establish baseline conditions, track water quality changes over time, and direct resources for watershed management.

The core mandate of Conservation Authorities is to undertake watershed-based programs to protect people and property from flooding and other natural hazards, and to conserve natural resources for economic, social and environmental benefits. In order to provide a better understanding of local environmental issues, focus actions where they are needed the most, and track progress overtime, Conservation Authorities monitor the health of natural resources in their watersheds. Water quality monitoring in the St. Clair Region has been on-going since the 1960's. In total the SCRCA monitors 21 stations in three different water monitoring programs, these include eight sites in the Provincial Water Quality Monitoring Network (PWQMN), two sites in the Healthy Lake Huron Initiative and 11 sites as part of the COA Great Lakes Water Quality Monitoring Program.

Compared with other CAs that have smaller and/or more linear watersheds, the SCRCA has a large land-base (4,130km^2) with four separate drainage basins that require water quality monitoring to understand changes occurring across the region. The four main drainage areas include tributaries for Lake Huron, St. Clair River, Lake St. Clair, and the Sydenham River (north and east branches). As stated earlier the SCRCA collects surface water samples for three monitoring programs. These three programs together create a complete picture of what is happening in the St. Clair Region watershed as no one program covers all four drainage basins.

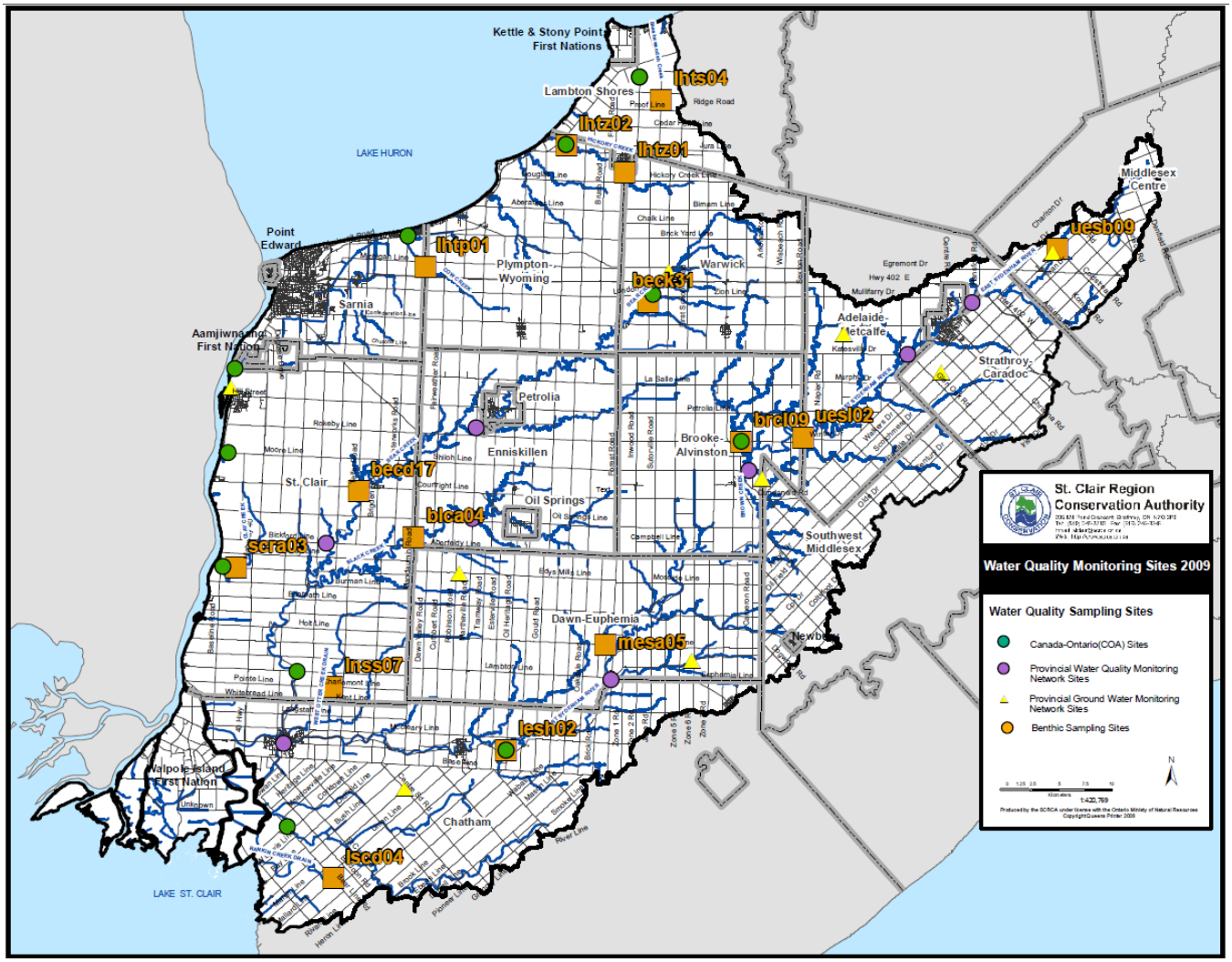


Figure 1: SCRCA Water Quality Monitoring Sites throughout the St. Clair Region

In addition to the large land area, the St. Clair Region is an area with intensive land use that is largely rural and dominated by agriculture (81%) but there are also urban and industrial areas, such as the second largest complex of petrochemical facilities in Canada. Water quality monitoring in the St. Clair River Area of Concern is essential for recording the potential impacts of agriculture and industry in Sarnia-Lambton as well as monitoring progress achieved through the remedial action plan. The Sydenham Watershed has been identified as a high contributing area in Canada for phosphorus loads to the Lake Erie basin but is also one of the most

species-rich watersheds in Canada and includes large stretches of critical habitat for aquatic SAR that is essential to their persistence and recovery.

Water quality data obtained through surface water quality monitoring programs are used by watershed managers to both address concerns and identify stewardship actions in the region. Water quality data are also used to inform SCRCA board members, municipalities, planning decisions, and is used in various outreach and education initiatives (e.g., Board Reports, Conservation Updates, Species at Risk Newsletters, bus tours, conservation education programs, workshops, demonstrations). Additionally, the water quality data are used by many of our partners including, the Department of Fisheries and Oceans, who use the data as part of the assessments for Species at Risk and critical habitat research, and other academic partners like the University of Windsor, that use the baseline data for various research projects. SCRCA staff reached out to several partners including the Department of Fisheries and Oceans, Friends of the St. Clair River and University of Windsor Healthy Headwaters Lab who were all willing to provide examples of how they use the data and write letters to support the continued monitoring of the COA program (See Appendix 1-3).

The COA data also contributes to several key initiatives in the region:

- **St. Clair River Area of Concern Remedial Action Plan**
  The St. Clair River was identified as an Area of Concern in 1985 as it did not meet the objectives of the GLWQA due to severely degraded water quality and environmental health. Water quality sites are essential to monitoring watershed changes and progress achieved through the Remedial Action Plan.
- **St. Clair Region Drinking Water Source Protection Area**
  The Thames-Sydenham Source Protection Plan came into effect on December 31, 2015, after a decade of research which identified vulnerable areas and potential threats. The policy is now being implemented to continue to identify and mitigate threats to municipal water supplies. Turbidity is an example of a local water quality issue relating to drinking water. Walpole Island First Nation and Wallaceburg Water Treatment Plants draw raw water from the St. Clair River but have had to close intakes in the past due to high turbidity caused by storm water flows from the North Branch of the Sydenham River.
- **Sydenham River Recovery Strategy and Action Plan, SAR and Critical Habitat**
  The Sydenham watershed has been recognized as one of the most species-rich watersheds in Canada. According to DFO, the St. Clair Region supports 28 fish and mussel SAR, including species of global conservation concern and large stretches of Critical Habitat. The areas of Critical Habitat for fishes and freshwater mussels were recently expanded (Feb. 2021) in the St. Clair Region and now include:
    - North Sydenham River (North Sydenham River, Bear Creek)
    - East Sydenham River (East Sydenham River, Brown Creek, mouths of Spring and Fansher Creeks)
    - St. Clair River Tributaries (Whitebread Drain/Grape Run)
    - Lake St. Clair Tributaries (Maxwell Creek, Little Bear Creek)

  Water quality in several of these locations are only monitored through the COA program (Brown Creek, Little Bear Creek, and the headwaters of Bear

Creek). The Sydenham River Recovery Planning documents identify degraded water quality as one of the major threats to SAR including nutrient and toxic contaminant loads, turbidity, and thermal regime changes.

- **Sydenham Watershed Phosphorus Management Plan and Lake Erie Action Plan**
  The Sydenham Watershed has been identified as a high contributing area in Canada for phosphorus loads to the Lake Erie basin. The SCRCA is currently working with government agencies and local stakeholders on a Phosphorus Management Plan for the tertiary Sydenham watershed to contribute to provincial and federal commitments under LEAP. One pillar of the Lake Erie Action Plan is an improved knowledge base and, according to the plan, research, modelling, and monitoring programs provide essential data to understand the effectiveness of our actions, how phosphorus enters Lake Erie, and the factors contributing to algal blooms. The monthly water quality samples are essential to understanding phosphorus loading in the Sydenham watershed and where to best prioritize phosphorus reduction efforts.
- **Healthy Lake Huron Initiative**
  Through the Healthy Lake Huron Initiative, communities are working to protect Lake Huron by implementing best management practices and projects. Lambton Shores has been identified as one of six priority watersheds designated for long-term monitoring (of water quality, water quantity, and weather), research, and project implementation and evaluation. The lessons learned in the six designated watershed study areas provide valuable knowledge about projects that can be implemented along the entire southeast shoreline.
- **SCRCA Watershed Report Cards**
  The SCRCA relies on the water quality data to publish a periodic watershed report card for use by watershed residents, all levels of government, industry and environmental agencies to identify priority areas and direct actions. Ontario's 36 Conservation Authorities coordinate on this initiative and use standardized assessment criteria so the status of natural resources can be compared across the province.
- **SCRCA Healthy Watersheds Program**
  The SCRCA identifies areas with degraded water quality to prioritize stewardship projects.
- **WISKI database**
  WISKI is a software tool used for improved data management and analyses. The COA data is uploaded into a WISKI database through a collaborative effort with the UTRCA where this long-term data set is available to partnering organizations including surrounding conservation authorities.

The SCRCA highly values these data, so invests time/ money to collect the samples and manage the data relating to these stations. As a small Conservation Authority, we have made a significant investment in maintaining these sites, as it requires a staff person one day per month collecting samples (the two alternating COA routes range from 270-290km), a half day per month calibrating equipment and labeling bottles, and about a week managing data on a yearly basis. Sampling is completed the day before or the day after PWQMN samples and employs the same sampling protocols. COA sites are essential to understanding water quality concerns in the region and have greater financial implications as they are important to understanding how resources are best directed.

Examples of reports illustrating the various uses of the water quality data:

- Thames-Sydenham and Region Watershed Characterization Report, St. Clair Region Source Protection area. Volume 2. December 2008. http://www.sourcewaterprotection.on.ca/wp-content/uploads/sp_plan3/SupDocs/WCR/SClair_Characterization_Report/StClair-Summary.pdf
- Interim Watershed Description Report. (Background document for Watershed Characterization report, above).
- St. Clair River Watershed Plan, December 2009. AOC Area 1-A. https://www.scrca.on.ca/wp-content/uploads/2013/11/Pub-St-Clair-River-Watershed-Plan-Part-I.pdf https://www.scrca.on.ca/wp-content/uploads/2013/11/Pub-St-Clair-River-Watershed-Plan-part-II.pdf
- St. Clair Region Conservation Authority Watershed Report Card. 2013. https://www.scrca.on.ca/wp-content/uploads/2013/09/Report-Card-2013-Report.pdf
- St. Clair Region Conservation Authority Watershed Report Card, 2018. https://www.scrca.on.ca/wp-content/uploads/2018/12/2018-SCRCA-WRC-Report.pdf
    - Ontario's Conservation Authority Watershed Report Cards Story Map: http://stateofontariowatersheds.ca/
    - Background: https://conservationontario.ca/policy-priorities/science-and-information-management/watershed-reporting
- St. Clair River Area of Concern. INTERIM REPORT: Water Quality of Canadian St. Clair River Tributaries, 2004-2012
- Sydenham River Recovery Strategy, July 2002. http://www.sydenhamriver.on.ca/Publications/RecoveryStrategyJuly2002.pdf

Financial Impact:

The COA Great Lakes Water Quality Monitoring program has received support from MOECP for the analysis of 64-72 water quality samples per year. The SCRCA through various other funding sources has been able to cover the costs of staff time to prepare, collect, and ship the samples to the lab for analysis. In the past programs such as the Ontario Community Environment Fund and Canadian Nature Fund have been used to support the staff time for collection of the water quality samples. In general, the costs for collection and analysis are as follows:

Staff Time
Preparation and Collection: 1 staff @ $50/hr for 11hrs, samples collected once a month for 8 months = $4,400
Data management and analysis: 1 staff @$50/hr for 37.5hrs = $1,875
Mileage: 270-290km round trip

Sample Costs
Lab Analysis: ~$100-$200/sample and 64-72 samples/year = total annual analysis costs ranging from $6,400 - $14,400

Friends of the
St. Clair River

March 25, 2021

ATTN: Hugh Geurts, MOECP

On behalf of Friends of the St. Clair River (FOSCR), please accept the following letter as our support for continued water quality monitoring conducted by the St. Clair Region Conservation Authority (SCRCA).

Since the St. Clair River was first identified as an of the Area of Concern (AOC) on the Great Lakes in 1985, Friends of the St. Clair River has worked extensively in co-operation with the St. Clair Region Conservation Authority in order to improve water quality in this AOC.

Great advances have been made over the last three decades, as numerous Beneficial Use Impairments are no longer issues in the St. Clair River. These advances towards de-listing the St. Clair River as an Area of Concern are in no small part due to continued water quality monitoring undertaken by the SCRCA. Data provided by the monitored supports the significant improvements made by industrial, agricultural and municipal sectors in decreasing point and non-point source pollution.

However, due to the intensive agricultural, industrial and urban land use of the St. Clair River watershed, it is the opinion of the FOSCR that the continued water quality monitoring of the St. Clair River is essential in progressing the environmental quality of the river and reaching the goal of it being de-listed as an Area of Concern.

Sincerely,

Craig Griffiths
Chairperson – Friends of St Clair River
Craig_griffiths1@hotmail.com

Healthy Headwaters Lab use of SCRCA Water Quality Data

Roland Eveleens (MSc student), eveleen@uwindsor.ca
Great Lakes Institute of Environmental Research, University of Windsor

In 2020, the SCRCA provided the Healthy Headwaters Lab (Great Lakes Institute of Environmental Research, University of Windsor) with the previous 5 years of water quality, mussel, fish and benthic macroinvertebrate data in support of a 4-year research project on federally-listed mussel species at risk funded by the federal Canada Nature Fund for Aquatic Species at Risk program. The data obtained from SCRCA was invaluable as our research group had not previously worked within the Sydenham River watershed or the St Clair region, and provided an extremely useful context for designing our study approach as well as bolstering our own survey data. Specifically, the water quality data enabled us to understand how environmental conditions varied across the Sydenham River watershed to inform the placement of our study sites. In turn, this helped ensure the allocation of research effort adequately covered a gradient of agricultural impact and so strengthened our ability to investigate the effect of environmental conditions on mussel species at risk. Additionally, having long term water quality data supports the application of our research findings by determining how representative the environmental conditions during our sampling period were of long-term trends.

Should this data not have been available, or only been available for fewer sites, this would have restricted the quality of science able to be produced due to the lack of alternative sources for similar. While collection of preliminary data is possible, the short-term nature of funding sources for university research and geographically dispersed study sites prevents the accumulation of our own long-term records. As such, the collection of this data by SCRCA is valuable to the Healthy Headwaters Lab (and other university researchers) in supporting our research and ensuring efficient use of federal research funding. Given that we are conducting research on species at risk that are related to local water quality and of public interest, the ability of researchers to utilise SCRCA water quality data further contributes to monitoring objectives of protecting regional water quality.

Fisheries and Oceans Canada | Pêches et Océans Canada

Great Lakes Laboratory for Fisheries and Aquatic Sciences

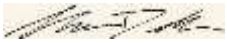
Bayfield Institute
867 Lakeshore Road
Burlington, ON
L7S 1A1

Re: the Conservation Value of St. Clair Region Conservation Authority Water Quality Monitoring Stations

To whom it may concern,

Identifying critical habitat and threats to SARA-listed fishes and mussels requires long-term water quality monitoring data. Conservation authorities like the St. Clair Region Conservation Authority are ideally suited to collect these data, which are used by federal agencies (DFO, ECCC, PCA) to assess the conservation status of aquatic species at risks, determine changes in environmental conditions, and develop recovery strategies. In particular, the sites monitored by SCRCA are some of the most important areas of aquatic biodiversity in Canada. Continued monitoring of water quality in these stations is vital to track long-term changes in the environment and the effect these changes are having on aquatic biodiversity, including not only federally and provincially designated species, but those with global significance as well. Federal agencies are not well positioned to collect these data (e.g., logistical constraints to maintain and service water quality meters), and thus, rely strongly on the stations monitored by SCRCA to conduct core science and management activities for SARA-listed species.

Sincerely,



Dr. D. Andrew R. Drake
Research Scientist, Great Lakes Laboratory for Fisheries and Aquatic Sciences
Fisheries and Oceans Canada
867 Lakeshore Rd., Burlington, Ontario, Canada L7S 1A1
andrew.drake@dfo-mpo.gc.ca

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (g)**
Report Date: March 31, 2021
Submitted by: Melissa Deisley, Jeff Vlasman, Kelli Smith

Subject: Regulations Activity Summary

A summary of staff activity related to the Conservation Authority's *Development, Interference of Wetlands, and Alterations to Shorelines and Watercourses Regulation* (Ontario Regulation 171/06 under Ontario Regulation 97/04) is presented below. This report covers the period from February 1, 2021 to March 31, 2021.

Regulations Permits Issued

Application #	Location	Municipality	Proposal	Submitted	Issued	Days
R#2021-0095	Churchill Line - Lot 27, Con 14	Brooke-Alvinston	Fibre optic cable and two 1.25 inch pipes	Mar-24	Mar-24	1
R#2021-0096	Ebenezer Road - Lot 12, Con 13	Brooke-Alvinston	Fibre optic cable and two 1.25 inch pipes	Mar-24	Mar-24	1
R#2021-0097	LaSalle Line - Lot 24, Con 13	Brooke-Alvinston	Fibre optic cable and two 1.25 inch pipes	Mar-24	Mar-24	1
R#2021-0098	LaSalle Line - Lot 10, Con 12	Brooke-Alvinston	Fibre optic cable and two 1.25 inch pipes	Mar-24	Mar-24	1
R#2021-0099	Nauvoo Road - Lot 18, Con 12	Brooke-Alvinston	Fibre optic cable and two 1.25 inch pipes	Mar-24	Mar-24	1
R#2021-0137	Brooke-Alvinston Lot 10 Con 6	Brooke-Alvinston	Excavation on site - Dig #416	Mar-08	Mar-24	16
R#2020-0716	35 & 41 Minnie Street	Chatham-Kent	New walkway.	Mar-11	Mar-11	1
R#2020-0812	15 Keller Street, Mitchell's Bay	Chatham-Kent	House Addition	Mar-15	Mar-23	8
R#2020-0832	234 Queen Street	Chatham-Kent	Addition	Feb-08	Mar-23	43
R#2021-0002	14969 County Road 16	Chatham-Kent	Installation of steel casing	Jan-29	Feb-23	25

R#2021-0022	30759 Cairo Road, Bothwell	Chatham-Kent	Installation of conduit	Jan-29	Feb-23	25
R#2021-0023	30807 Cairo Road, Bothwell	Chatham-Kent	Installation of conduit	Jan-29	Feb-23	25
R#2021-0069	30740 Zone Road 8	Chatham-Kent	Install 1-3" conduit and 1-1.5" conduit	Feb-24	Feb-24	1
R#2021-0089	Bush Line & Prince Albert Road, Lot6/7, Con 12	Chatham-Kent	Directionally drill 165m of 6" steel under prince albert drain	Feb-12	Feb-18	6
R#2021-0126	6 McKee Road, Wallaceburg	Chatham-Kent	Sunroom addition	Mar-24	Mar-25	1
R#2021-0047	5695 Bentpath Line	Dawn-Euphemia	new addition	Mar-16	Mar-24	8
R#2021-0138	Lot 33 Con 8 Dawn-Euphimia	Dawn-Euphemia	Excavation on Site - Dig #417	Mar-08	Mar-24	16
R#2021-0045	Lot 1 Con 7 Enniskillen	Enniskillen	replacement of elbows in regualted area	Jan-25	Mar-11	45
R#2021-0046	Lot 1 Con 8 Enniskillen	Enniskillen	replacement of elbows in regulated area	Jan-26	Mar-11	44
R#2020-0801	450 Blanche Street	Petrolia	New propane and vaporizer.	Feb-08	Mar-23	43
R#2020-0844	3861 Ferne Avenue	Plympton-Wyoming	New single family detached	Feb-17	Feb-17	1
R#2021-0018	1220 Fort Street	Point Edward	Dredging	Jan-14	Feb-24	41
R#2020-0334	2151 Churchill Line, Sarnia	Sarnia	addition	Feb-22	Mar-02	8
R#2020-0715	1276 Hillcrest-Nisbet Drive	Sarnia	Addition.	Nov-12	Mar-12	120
R#2020-0684	2566 Tulloch Line	St. Clair	Addition to existing home.	Nov-06	Mar-03	117
R#2020-0793	4624 Old River Road	St. Clair	Addition and detached garage.	Dec-17	Feb-19	64
R#2021-0128	1094 Courtright Line	St. Clair	Ladysmith Station Works	Mar-04	Mar-24	20
R#2020-0548	521 Drury Lane	Strathroy-Caradoc	Addition to existing dwelling	Feb-26	Mar-11	13

R#2021-0050	Lot 24 Con 4 SER Warwick	Warwick	fibre optic cable and two 1.25 inch pipelines	Mar-24	Mar-24	1

Total Permits Issued: 29 **Average Number of Days to Issue for this Period: 24.03**

Regulations Inquiries

FileReference	Municipality	Location
R#2021-0120	Adelaide-Metcalfe	9328 Hickory Drive, Strathroy
R#2021-0136	Adelaide-Metcalfe	25700 Kerwood Road
R#2020-0841	Brooke-Alvinston	7450 Aberfeldy Line
R#2021-0135	Brooke-Alvinston	6557 James St.
R#2021-0149	Brooke-Alvinston	3120 Queen Street, Inwood
R#2020-0457	Chatham-Kent	115 Water Street, Wallaceburg
R#2020-0526	Chatham-Kent	25961 Baldoon Road, Dover
R#2020-0682	Chatham-Kent	South of 744 Nelson Street
R#2021-0035	Chatham-Kent	12298 Wabash Line
R#2021-0079	Chatham-Kent	473 Brown St
R#2021-0092	Chatham-Kent	119 Water Street, Wallaceburg
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#2021-0110	Chatham-Kent	11080 Base Line
R#2021-0113	Chatham-Kent	553 Walnut St
R#2021-0115	Chatham-Kent	473 Brown St
R#2021-0123	Chatham-Kent	917 Old Glass Rd
R#2021-0153	Chatham-Kent	125 Bruinsma Ave, Wallaceburg
R#2021-0155	Chatham-Kent	29584 Bishop Road, Wallaceburg
R#2021-0158	Chatham-Kent	Brooke Line from Centre Side Road to Kent Bridge Road
R#2021-0162	Chatham-Kent	Booth Road adjacent to Otter Creek Drain
R#2021-0163	Chatham-Kent	7005 Dufferin
R#2021-0166	Chatham-Kent	9073 Countryview Line, Chatham-Kent
R#2021-0168	Chatham-Kent	1644 + 1648 Wallaceburg
R#2021-0174	Chatham-Kent	473 Brown St
R#2020-0704	Dawn-Euphemia	North of 172 Dawn Mills Road
R#2021-0067	Dawn-Euphemia	NE of 7134 Aughrim Line

R#2021-0133	Enniskillen	Shiloh Line
R#2020-0013	Lambton Shores	16 Eureka Street, Forest
R#2020-0707	Lambton Shores	6780 East Parkway Dr, Ipperwash
R#2020-0776	Lambton Shores	5512 Beach St
R#2021-0024	Lambton Shores	5512 Beach Street, Lambton Shores
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#2021-0124	Lambton Shores	5512 Beach St
R#2021-0143	Lambton Shores	8370 Glendale Drive
R#2021-0147	Lambton Shores	9712 Centre Sideroad, Lambton Shores
R#2021-0165	Lambton Shores	4984 Hilltop Road, Lambton Shores
R#2020-0751	Middlesex Centre	Lot 8, Con 9 Lobo
R#2021-0161	Middlesex Centre	5937 Egremont Drive, Lobo
R#2020-0404	Plympton-Wyoming	3480 Queen Street
R#2020-0709	Plympton-Wyoming	3548 Queen Street
R#2021-0065	Plympton-Wyoming	Lot 59 Bluepoint Drive
R#2021-0070	Plympton-Wyoming	4338 Bluepoint Drive
R#2021-0127	Plympton-Wyoming	5450 Mandaumin Road, Plympton
R#2021-0159	Plympton-Wyoming	4338 Bluepoint Drive, Plympton
R#2021-0190	Plympton-Wyoming	4889 Shirley Lane
R#2021-0194	Plympton-Wyoming	3923 Delmage Ave
R#2019-202	Sarnia	550 Lakeshore Road
R#2020-0531	Sarnia	1407 London Road, Sarnia
R#2020-0734	Sarnia	1407 London Road
R#2020-0811	Sarnia	2056 Lakeshore Road
R#2021-0084	Sarnia	2876 Old Lakeshore Road
R#2021-0087	Sarnia	1575 Plank Road
R#2021-0088	Sarnia	2876 Old Lakeshore Road
R#2021-0101	Sarnia	1715 Blackwell Road
R#2021-0116	Sarnia	2876 Old Lakeshore Road

R#2021-0130	Sarnia	2478 Hamilton Road, Sarnia
R#2021-0068	Southwest Middlesex	Lot 1 Con 10, Alvinston
R#2021-0164	Southwest Middlesex	Lots 6 and 7 Concession 10 MOSA
R#2020-0822	St. Clair	2801 St. Clair Parkway
R#2021-0154	St. Clair	3636 St. Clair Parkway, Sombra
R#2021-0160	St. Clair	411 Beresford Street, Corunna
R#2021-0176	St. Clair	113 Pointe Line
R#2021-0191	St. Clair	3111 St. Clair Parkway
PL#2021-0022	Strathroy-Caradoc	23134 Tabacco Road
R#2020-0846	Strathroy-Caradoc	LOT 19, CON 4 SER
R#2021-0029	Strathroy-Caradoc	Corner of Head St & Second St
R#2021-0151	Strathroy-Caradoc	30 Parkview Crescent, Strathroy
R#2021-0152	Strathroy-Caradoc	370 Albert Street, Strathroy
R#2021-0181	Warwick	6658 Confederation Line

Total Regulations Inquiries: 76

Regulations - DART Completed Files

File Reference	Municipality	Drain / Watercourse
R#2021-0083	Brooke-Alvinston	14th Concession
R#2021-0085	Brooke-Alvinston	4-5 Concession Drain
R#2021-0167	Brooke-Alvinston	Johnson Drain
R#2021-0169	Brooke-Alvinston	Johnston-Symington Drain
R#2021-0184	Brooke-Alvinston	Smith Drain
R#2021-0188	Brooke-Alvinston	Parker Lucas Drain
R#2021-0189	Brooke-Alvinston	Benner Duffy Drain
R#2020-0379	Enniskillen	Balls Drain
R#2021-0031	Enniskillen	McGeachy Drain
R#2021-0080	Enniskillen	Noble Wooley Drain
R#2021-0139	Enniskillen	Phillips Drain
R#2021-0141	Enniskillen	Bygrove Drain
R#2021-0051	Middlesex Centre	Bear Creek Drain Br 1
R#2021-0076	Sarnia	Cole
R#2021-0156	Southwest Middlesex	Harvey Drain
R#2021-0146	St. Clair	Hayne Drain

Total DART Permits Issued: 16

Regulations Inquiries - Drains

File Reference	Municipality	Drain / Watercourse
R#2021-0193	Dawn-Euphemia	Young Drain
R#2021-0078	Enniskillen	Caroline Street Drain
R#2021-0129	Enniskillen	King Drain
R#2021-0142	Enniskillen	O'Dell Park Drain
R#2021-0052	Middlesex Centre	Bear Creek Drain 2008
R#2019-330	Plympton-Wyoming	Stuurman Drain
R#2020-0022	Plympton-Wyoming	Carmichael Drain
R#2021-0073	Plympton-Wyoming	King Bryson
R#2021-0074	Plympton-Wyoming	Fisher Drain
R#2020-0467	Sarnia	Berry Drain
R#2021-0144	Sarnia	Bird Drain
R#2021-0145	Strathroy-Caradoc	Slegers-Melbourne Road Drain

Total Regulations Inquiries Regarding Drains: 12

Update:

- SCRCA Staff met with the landowners, Township staff and the County planner on April 7, 2021 to review the proposed cabin location
- Wetland pockets were identified at the proposed cabin site, therefore the proposed site would not meet SCRCA Regulation or Official Plan/ PPS policies for development
- SCRCA and Municipal staff reviewed other potential sites on the property with the landowners, and a potential location which could meet SCRCA policy was identified
- Since the new proposed site is within a significant woodland, a scaled environmental impact study would be required in support of the required severance, official plan amendment, and zoning by-law amendment applications.

Staff Report

Meeting Date: April 15, 2021
Report Date: March 31, 2021
Submitted by: Sarah Hodgkiss, Laura Biancolin

Item 7.1 (h)

Subject: Planning Activity Summary

A summary of staff activity related to Municipal Plan Input and Review is presented below. This report covers the period from February 1, 2021 to March 31, 2021.

Municipal Plan Input and Review

File Reference	Location	Municipality	Municipal File
PL#2019-109	1425 Melwood Drive	Adelaide-Metcalfe	OPA01-2020 Z02-2020
PL#2020-0068	4965 Walkers Drive	Adelaide-Metcalfe	B05-2020
PL#2020-0045	5452 Stewart Line	Chatham-Kent	B-124/20 A-64/20
PL#2021-0019	14 Tackle Line	Chatham-Kent	
PL#2021-0020	955 Murray Street	Chatham-Kent	B-13/21
PL#2021-0021	9100 Greenvalley Line	Chatham-Kent	B-14/21
PL#2021-0033	8160 Dover Centre Line	Chatham-Kent	B-24/21
PL#2018-110	First Ave	Petrolia	
PL#2018-111	Country View Drive	Petrolia	38T-07001
PL#2020-0022	9338 West Ipperwash Road	Lambton Shores	ZO-08/2020
PL#2021-0017	113 Clyde St	Lambton Shores	
PL#2021-0040	5958 Lakeshore Road	Lambton Shores	
PL#2020-0073	10284 Ilderton Road	Middlesex Centre	
PL#2021-0018	2557 Kelly Road	Oil Springs	B001/21 B002/21 B003/21
PL#2018-019	Frist Ave & Garden Crs	Petrolia	
PL#2019-058	3935 Tile Yard Road	Petrolia	
PL#2020-0070	First Ave and Fourth St	Petrolia	
PL#2021-0028	4055 Oil Heritage Road	Petrolia	
PL#2018-109	North of 6810 King St	Plympton-Wyoming	38T-20001

PL#2018-045	5706 Lakeshore Road	Plympton-Wyoming	OPA 39 ZBA16/2016 38T-18005
PL#2018-055	3424 Egremont Road	Plympton-Wyoming	38T-18005
PL#2018-022	Queen Street	Plympton-Wyoming	51-2018 38T-18004 B01-2018, B01-2020
PL#2019-081	5223 Douglas Line	Plympton-Wyoming	
PL2019-102	Fleming & Queen Street	Plympton-Wyoming	38T-19004
PL#2020-0043	Lakeshore and Flemming Road	Plympton-Wyoming	38T-08005
PL#2020-0075	4386 Confederation Line	Plympton-Wyoming	OPA 53
PL#2020-0086	3096 Lakeshore Road	Plympton-Wyoming	
PL#2021-0024	3288 Devonshire Road	Plympton-Wyoming	
PL#2021-0025	Egremont Road and Flemming Road	Plympton-Wyoming	B-08/21
PL#2021-0029	5252 Egremont Rd	Plympton-Wyoming	
PL#2021-0035	3673 Egremont Road	Plympton-Wyoming	
PL#2021-0038	NE of Augusta St	Plympton-Wyoming	
PL#2021-0042	SE of Egremont Rd & Fleming Rd	Plympton-Wyoming	
PL#2020-0003	Exmouth Street	Point Edward	
PL#2019-115	1600 Venetian Blvd	Point Edward	
PL#2020-0079	1540 Venetian Blvd	Point Edward	
PL#2020-0081	Venetian Blvd	Point Edward	
PL#2018-014	834 Lakeshore Rd	Sarnia	OPA 12 No. 03-2021- 85 of 2002 No. SD1-2021
PL#2018-118	1992 Estella St	Sarnia	11-2018, 5-2019 SD2-2018, CD1-2018
PL#2019-105	1324 Michigan Avenue	Sarnia	32 2-2021-85 of 2002
PL#2019-108	Modeland Rd and Michigan Ave	Sarnia	SD2-2009 A18-20 and A32-20
PL#2020-0017	1612 London Line	Sarnia	B10 2020
PL#2020-0037	Modeland Rd and Michigan Ave, Sarnia	Sarnia	OPA#27 No. 13-2020-85 SD2-2020
PL#2020-0083	North Severance (4953 Kimball Rd)	Sarnia	
PL#2021-0012	1758 Confederation Line	Sarnia	
PL#2021-0013	2437 Michigan Line	Sarnia	
PL#2021-0023	1575 Plank Road	Sarnia	
PL#2019-098	Indian Road & St. Clair Parkway	St. Clair	

PL#2020-0071	681 St. Clair Parkway	St. Clair	
PL#2020-0085	403 LaSalle Line	St. Clair	
PL#2021-0010	St. Clair Parkway Place	St. Clair	
PL#2021-0026	East of Penrise St	St. Clair	38T-97002
PL#2021-0030	947 Bentpath Line	St. Clair	
PL#2021-0031	2332 Kimball Road	St. Clair	B-02-21
PL#2021-0037	Lot 27, Con X	St. Clair	B-03-21
PL#2021-0039	Lot 28, Con Front	St. Clair	
PL#2021-0043	Kent Line (north of 2429 Kent Line)	St. Clair	
PL#2018-103	Second Street	Strathroy-Caradoc	OPA1-2019
PL#2018-058	22701 & 22681 Adelaide Road	Strathroy-Caradoc	ZBA01-2019 39T-SC-CDM1901 B10/2018, B11/2018
PL#2018-026	Thorn Drive	Strathroy-Caradoc	39T-SC1303
PL#2019-068	Queen St and Glendon Dr	Strathroy-Caradoc	ZBA02-2020 39T-SC2001
PL#2019-084	101 Hull Road	Strathroy-Caradoc	
PL#2020-0009	Adelaide Rd & Falconbridge Dr	Strathroy-Caradoc	
PL#2020-0066	481 Metcalfe Street E	Strathroy-Caradoc	
PL#2021-0015	9204 Glengyle Drive	Strathroy-Caradoc	
PL#2021-0016	Lot 7 Carrie Street	Strathroy-Caradoc	
PL#2021-0022	23134 Tabacoo Road	Strathroy-Caradoc	
PL#2021-0027	6652 Calvert Dr & 6661 Calvert Dr	Strathroy-Caradoc	
PL#2021-0034	429 Metcalfe Street E	Strathroy-Caradoc	
PL#2020-0012	7806 Confederation Line	Warwick	
PL#2021-0041	7757 Confederation Line	Warwick	
Total Plan Review Items: 71			

Environmental Assessments

File Reference	Location	Municipality
EA#2020-018	Lambton County	
EA#2020-011	S of Dufferin Ave along Chenail Ecarte	Chatham-Kent
EA#2020-013	444 Greenfield St to Municipal No. 440	Petrolia
EA#2021-004	Hwy 402, Front St to Mandaumin Rd	Sarnia

EA#2021-003	Lambton Transformer Station	St. Clair
EA#2021-001	Transmission line from Ennisbrook JCT & Forest Jura DS	Warwick
EA#2021-002	8119 Zion Line	Warwick

Total Environmental Assessments: 7

Legal Inquiries

File Reference	Location	Municipality
LL#2021-0007	380 Tank Street	Petrolia
LL#2021-0011	1932 and 1930 1/2 Franklin Ave	Sarnia
LL#2021-0012	1388-1390 Exmouth Street	Sarnia
LL#2021-0010	601 Lions Park Drive Unit 30	Strathroy-Caradoc

Total Legal Inquiries: 4

Prepared By: Tracy Prince
April 1, 2021
Item 7.1 (i)

ST CLAIR REGION CONSERVATION AUTHORITY
Statement of Revenue and Expenditure
For Two Months Ended 28/02/2021

	Actual To Date			Annual Budget Prorated 2 Months Ended Feb 27/21		Variance from Budget	
	Revenue	Expenditures	Surplus (Deficit)	Revenue	Expenditures	Revenue	Expenditures
Flood Control & Erosion Control	$936,889	$359,882	$577,007	$3,655,650	$3,655,650	($2,718,761)	($3,295,768)
Capital Projects/WECI	$54,477	$0	$54,477	$35,000	$35,000	$19,477	($35,000)
Conservation Area's Capital Development	$8,475	$0	$8,475	$60,000	$60,000	($51,525)	($60,000)
IT Capital	$3,224	$1,202	$2,022	$19,200	$19,200	($15,976)	($17,998)
Equipment	$11,800	$0	$11,800	$72,000	$72,000	($60,200)	($72,000)
Planning & Regulations	$39,203	$99,257	($60,054)	$646,195	$646,195	($606,992)	($546,938)
Technical Studies	$276,905	$62,939	$213,966	$278,929	$278,929	($2,024)	($215,990)
Recreation	$104,135	$50,248	$53,886	$1,488,970	$1,488,970	($1,384,835)	($1,438,721)
Property Management	$33,062	$38,861	($5,799)	$252,308	$252,308	($219,246)	($213,447)
Education and Communication	$0	$44,340	($44,340)	$266,960	$266,960	($266,960)	($222,620)
Source Water Protection	$123,943	$28,089	$95,855	$432,500	$432,500	($308,557)	($404,411)
Conservation Services/Healthy Watersheds	$582,483	$80,392	$502,091	$910,477	$910,477	($327,994)	($830,085)
Administration/AOC Management	$446,269	$149,254	$297,015	$1,628,371	$1,628,371	($1,182,102)	($1,479,117)
	$2,620,865	**$914,463**	**$1,706,402**	**$9,746,560**	**$9,746,560**	**($7,125,695)**	**($8,832,097)**

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

Item 7.1 (j)
GLYSUM2021
Sarah Hume
03/31/2021

2021 GENERAL LEVY SUMMARY

MUNICIPALITY	GROSS LEVY	PAID TO DATE	OUTSTANDING
Sarnia	$ 441,956.00	110,489.00	$ 331,467.00
Chatham-Kent	153,868.00		153,868.00
Brooke-Alvinston Twp.	21,080.00		21,080.00
Dawn Euphemia Twp.	31,269.00	7,817.25	23,451.75
Enniskillen Twp.	23,560.00		23,560.00
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		64,563.00
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**	**$ 561,586.25**	**$ 617,989.75**

Your Investment Report

BMO Wealth Management
BMO Nesbitt Burns

Non-registered account #440-17189-13

January 31, 2021

JTA6175747 E D 04707

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

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 Jan 1, 2021	Closing Value Jan 31, 2021	Balance on Jan 31, 2021 (CAD$)
Canadian Dollar Investments			
Cash Account	1,498,175.04	1,500,400.59	1,500,400.59
	1,498,175.04	1,500,400.59	1,500,400.59
Grand Total (CAD$)			**1,500,400.59**
		Last Statement Dec 31, 2020	**1,498,175.04**

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

JTA6175747-0028237-04707-0003-0001-00-

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
MICHAEL COONEY
BMO Private Wealth Market Leader
(519) 672-8560

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

Non-registered account #440-17189-13

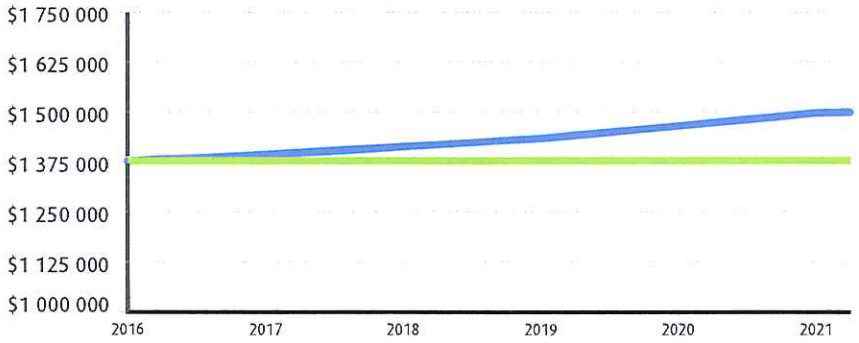
January 31, 2021

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	+ 2,225.55	+ 121,220.91
Closing Value on Jan 31, 2021	**1,500,400.59**	**1,500,400.59**

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



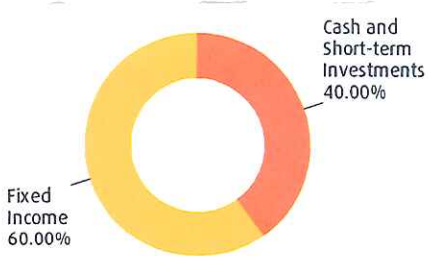
The Change in Market Value of your account since January 1, 2016 is $121,220.91.
This includes gains, losses and income received with respect to the investments held in your account.

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	600,400.59	10.00	40.00
Fixed Income	900,000.00	90.00	60.00
Equities	0.00	0.00	0.00
Total	**1,500,400.59**		**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

January 31, 2021

Your Canadian Dollar Investments

All amounts are reported in Canadian Dollars.

Income you received

Type of Income	Current Month	Year to Date
Interest	2,225.55	2,225.55
Total	**2,225.55**	**2,225.55**

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**.

Your investment details

	Quantity	Cost Per Unit	Cost Total	Market Value on January 31, 2021 Per Unit	Market Value on January 31, 2021 Total
Cash Account					
Cash and Short-term Investments					
CASH			125,400.59		125,400.59
HOMEQUITY BANK GIC ANNUAL DUE 05/13/2021 2.220%	50,000	100.000	50,000.00	100.000	50,000.00
PRESIDENT'S CHOICE BANK GIC ANNUAL DUE 05/13/2021 2.360%	100,000	100.000	100,000.00	100.000	100,000.00
HOME TRUST COMPANY GIC ANNUAL DUE 05/17/2021 2.540%	100,000	100.000	100,000.00	100.000	100,000.00
BANK OF MONTREAL MORTGAGE CORP GIC ANNUAL DUE 06/28/2021 2.130%	125,000	100.000	125,000.00	100.000	125,000.00
BMO TRUST COMPANY GIC ANNUAL DUE 08/26/2021 2.060%	100,000	100.000	100,000.00	100.000	100,000.00
Subtotal			**600,400.59**		**600,400.59**
Fixed Income					
Fixed Income					
EQUITABLE BANK GIC ANNUAL DUE 05/17/2022 2.520%	100,000	100.000	100,000.00	100.000	100,000.00
VANCITY GIC ANNUAL DUE 06/23/2022 1.150%	300,000	100.000	300,000.00	100.000	300,000.00
LBC TRUST GIC ANNUAL DUE 01/20/2023 2.220%	100,000	100.000	100,000.00	100.000	100,000.00

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Your Canadian Dollar Investments (continued)

All amounts are reported in Canadian Dollars.

Your investment details (continued)

	Quantity	Cost Per Unit	Cost Total	Market Value on January 31, 2021 Per Unit	Market Value on January 31, 2021 Total
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			**900,000.00**		**900,000.00**
Subtotal			**900,000.00**		**900,000.00**
Total for Cash Account			**1,500,400.59**		**1,500,400.59**
Total Canadian Dollar Investments			**1,500,400.59**		**1,500,400.59**

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						
Jan 1, 2021		**Opening Cash Balance**				**123,175.04**
Jan 20, 2021	Interest	LBC TRUST GIC ANNUAL DUE 01/20/2023 INT 2.220% CPN INT ON 100000 BND REC 01/19/21 PAY 01/20/21	100,000		0.00	2,220.33
Jan 22, 2021	Interest	INTEREST ON CREDIT BALANCE AT 0.050% 12/22 THRU 01/21			0.00	5.22
Jan 31, 2021		**Closing Cash Balance**				**125,400.59**

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

January 31, 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.

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.

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

Payments BMO received from third parties

	CAD ($)
Total payments BMO Nesbitt Burns received from third parties in 2021	**0.00**

Bulletin board

The USD/CAD conversion rate is: 1.2800, as of January 31, 2021

Important information regarding the conversion of foreign currency.
The BMO Nesbitt Burns ("NB") "Fees, Interest Rates and Foreign Conversion Schedule" sets out the fees and interest rates that apply to your account(s).
Effective March 15, 2021, the revenue BMO NB earns on the conversion of foreign currency will be based on the size of the transaction in CAD dollars as follows:
1.00% on transactions under $25,000; 0.75% on transactions between $25,000 and $75,000; 0.35% on transactions between $75,000 and $500,000; 0.15% on transactions between $500,000 and $2,000,000; and no more than 0.15% on transactions over $2,000,000.
No action is required on your behalf. If you have any questions, please contact your Investment Advisor.

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Scotia Wealth Management™

Investment Account Statement
ScotiaMcLeod®, a division of Scotia Capital Inc.

Item 7.1 (k)

ACPCE07 - 6090
SWSTM11000_1906290_001 E D 00737

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

Account Number: **460-16010**
Account Type: Regular Account
For the Period: **January 1 to 29, 2021**
Last Statement: December 31, 2020

Address Information

255 Queens Avenue
Suite 900
London ON
N6A 5R8

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

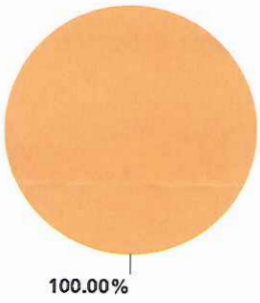
Your Wealth Advisor
Craig Emptage (519) 660-3259
craig.emptage@scotiawealth.com

Your Investment Team
Michael Willemse (519) 660-3268
Tammy Jackson (519) 660-3215

CANADIAN Account Overview

Currency: Canadian Dollar

Asset Class Summary	Jan. 29, 2021 Market Value	% of Total Assets
Fixed Income	815,995	100.00
Total Value of Account	**$815,995**	**100.00**
Total Value on Last Statement, December 31, 2020	$821,183	



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IIROC | Regulated by Investment Industry Regulatory Organization of Canada

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)	13,472.447	9.978	134,439	10.016	134,940
CASH	MANULIFE STRATEGIC INCOME FUND CL F NL (659)	15,527.889	12.314	191,223	12.575	195,263
CASH	PIMCO MONTHLY INCOME FUND (CANADA) CL M (505)	17,689.345	14.353	253,906	14.279	252,586
CASH	SIGNATURE CANADIAN BOND CORP CLASS EF NL (15137)	21,599.108	10.304	222,558	10.797	233,206
Total Fixed Income						**$815,995**
Total Account Holdings				**$802,126**		**$815,995**

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**
Jan. 04, 2021	CASH	DIVIDEND	PIMCO MONTHLY INCOME FUND (CANADA) CL M (505) REINVEST 12/31/20 @ $14.2667 PLUS FRACTIONS OF 0.269 BOOK VALUE $973.97	68		
Jan. 18, 2021	CASH	FEE	MPP MANAGED PORTFOLIOS GST/HST 86817 6249 RT0001 QST/TVQ 1019148099 TQ0001 TID#0110F000056436 TID#0110F000056436			-2,307.04
Jan. 21, 2021	CASH	SELL	PIMCO MONTHLY INCOME FUND (CANADA) CL M (505) PLUS FRACTIONS OF 0.653 SOLICITED	-161	14.2716	2,307.04
Jan. 25, 2021	CASH	DIVIDEND	MACKENZIE GLOBAL TACTICAL	10		

Monthly Activity - continued

Date	Type	Activity	Description	Quantity	Price	Credit/Debit(-)
			INVESTMENT GRADE BD FD SERIES F (4807) REINVEST 01/22/21 @ $10.0131 PLUS FRACTIONS OF 0.352 BOOK VALUE $103.66			

Closing Cash Balance **$0.00**

Summary

Income Summary

	This Period	Year-to-Date
Total Income	**$0**	**$0**

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To learn more about the ScotiaMcLeod services and features available through Scotia OnLine, please contact your advisor or a member of their team.

A Note From ScotiaMcLeod

Tax Slips
Visit our tax website at www.scotiawealthmanagement.com/tax to obtain a schedule of expected mailing dates for your tax slips.

Note: Your tax slips will be mailed shortly after receiving tax information from the issuer and will be in accordance with Canada Revenue Agency (CRA) and Internal Revenue Service (IRS) regulations. Please ensure you have all your tax slips prior to filing your tax returns.

If you have any questions regarding your tax slips, please contact your Wealth Advisor.

JTA6161437-0002947-00737-0002-0002-00-

Conservation Authority Statistical Survey - 2017 Financial Report

	Levy			
Conservation Authority	**Has CA Established a Minimum Levy**	**Federal**	**Provincial Section 39**	**Provincial Source Water Protection**
Ausable Bayfield CA	No	251386	113616	227167
Cataraqui Region CA	No	93848	109834	133541
Catfish Creek CA	Yes	89896	79835	10356
Central Lake Ontario CA	No	228201	124833	75320
Conservation Halton	No	1004915	300311	432411
Credit Valley Conservation	No	1621579	185195	87682
Crowe Valley CA	No	0	116741	39523
Essex Region CA	No	1092550	202263	91835
Ganaraska Region CA	Yes	0	100462	74461
Grand River CA	No	433700	871073	1570408
Grey Sauble Conservation	No	9771	71779	233329
Hamilton CA	No	221745	174327	0
Kawartha Conservation	No	20197	47730	38865
Kettle Creek CA	No	33847	119652	6419
Lake Simcoe Region CA	No	476609	132438	484157
Lakehead Region CA	No	47771	292380	92749
Long Point Region CA	No	72679	68240	45365
Lower Thames Valley CA	Yes	183415	157807	30884
Lower Trent Conservation	No	205728	133329	395411
Maitland Valley CA	No	61355	379794	39755
Mattagami Region CA	No	0	141427	113780
Mississippi Valley CA	No	3478	248792	0
Niagara Peninsula CA	No	231425	174496	97979
Nickel District CA	No	45325	154250	173053
North Bay-Mattawa CA	No	8850	258539	283360
Nottawasaga Valley CA	No	559598	188490	114395
Otonabee Conservation	No	1560	179660	56328
Quinte Conservation	No	27882	321799	223895
Raisin Region CA	No	28570	164721	232294
Rideau Valley CA	Yes	0	242687	172021
Saugeen Conservation	Yes	172567	145669	0
Sault Ste. Marie CA	No	0	131940	103774
South Nation Conservation	No	1121563	176409	85046
St. Clair Region CA	No	283996	310003	218664
Toronto and Region CA	No	2943000	744000	390000
Upper Thames River CA	No	1996880	351020	534558
		$13,573,886.00	***$7,715,541.00***	***$6,908,785.00***

Conservation Authori				
	Revenue			
Conservation Authority	Water and Erosion Control Infrastructure	Provincial Special Project	Municipal Levy	Municipal Special Project
Ausable Bayfield CA	6473	0	872145	505748
Cataraqui Region CA	6377	6196	2228034	0
Catfish Creek CA	0	122739	316545	0
Central Lake Ontario CA	0	6196	3789332	50000
Conservation Halton	348905	361581	8596587	669543
Credit Valley Conservation	0	262379	22763920	1228330
Crowe Valley CA	43776	7900	513202	8041
Essex Region CA	90000	616023	3047733	1002504
Ganaraska Region CA	0	123239	1194527	0
Grand River CA	486489	447234	11075000	1132936
Grey Sauble Conservation	0	6196	1276555	208055
Hamilton CA	56548	143380	4327000	2916000
Kawartha Conservation	0	39297	1481550	725672
Kettle Creek CA	0	0	853575	0
Lake Simcoe Region CA	0	857166	3645853	5355465
Lakehead Region CA	37500	92456	1085007	0
Long Point Region CA	29106	43144	1811455	0
Lower Thames Valley CA	0	599469	1367352	237547
Lower Trent Conservation	0	314590	890957	129002
Maitland Valley CA	0	0	1358048	62258
Mattagami Region CA	18750	8590	518000	0
Mississippi Valley CA	27578	29141	2709152	197557
Niagara Peninsula CA	43938	63039	8890972	0
Nickel District CA	370595	158349	683000	242000
North Bay-Mattawa CA	0	0	1017902	0
Nottawasaga Valley CA	0	156663	2234367	167439
Otonabee Conservation	95293	278145	1159876	153307
Quinte Conservation	144611	58350	1348543	510312
Raisin Region CA	0	0	777169	0
Rideau Valley CA	0	0	5466606	858240
Saugeen Conservation	0	117871	1639731	84556
Sault Ste. Marie CA	0	0	486847	0
South Nation Conservation	49588	154741	3147472	1184496
St. Clair Region CA	600000	576657	979142	0
Toronto and Region CA	863000	4947000	52220000	20442000
Upper Thames River CA	993143	22083	4844627	603479
	$4,311,670.00	***$10,619,814.00***	***$160,617,783.00***	***$38,674,487.00***

Conservation Authori				
Conservation Authority	**Self - Generated Revenue**	**Total Revenue**	**Land Management**	**Water Management**
Ausable Bayfield CA	2043141	4019676	999064	1958405
Cataraqui Region CA	1467215	4045045	1162488	1019135
Catfish Creek CA	742282	1361653	818892	315521
Central Lake Ontario CA	1862041	6135923	1466976	2531420
Conservation Halton	16723429	28437682	14449241	7975100
Credit Valley Conservation	4375945	30525030	15465781	8981275
Crowe Valley CA	191017	920200	22710	830708
Essex Region CA	2254453	8397361	3048933	3265810
Ganaraska Region CA	1783730	3276419	1137921	1304949
Grand River CA	15919583	31936423	16705803	11509250
Grey Sauble Conservation	1152643	2958328	1367137	896457
Hamilton CA	8463569	16302569	6349550	1866520
Kawartha Conservation	644237	2997548	368496	1821597
Kettle Creek CA	1549311	2562804	1345767	735552
Lake Simcoe Region CA	2999252	13950940	8288600	3922307
Lakehead Region CA	230960	1878823	469539	858813
Long Point Region CA	2773337	4843326	2167797	780710
Lower Thames Valley CA	1760679	4337153	2217630	906207
Lower Trent Conservation	351728	2420745	384756	1289344
Maitland Valley CA	1200809	3102019	589837	1740652
Mattagami Region CA	36379	836926	140936	101870
Mississippi Valley CA	359010	3574708	621280	2009551
Niagara Peninsula CA	3025198	12527047	3895398	2908143
Nickel District CA	475151	2301723	540163	487589
North Bay-Mattawa CA	845796	2414447	475864	2033775
Nottawasaga Valley CA	1657227	5078179	1010884	2629963
Otonabee Conservation	1220838	3145007	794874	1201110
Quinte Conservation	1435813	4071205	264534	2995438
Raisin Region CA	1105189	2307943	626948	654568
Rideau Valley CA	2883386	9622940	2960031	4849327
Saugeen Conservation	2981440	5141834	1476942	1481312
Sault Ste. Marie CA	76682	799243	94366	612325
South Nation Conservation	1248316	7167631	2171898	2814962
St. Clair Region CA	1975651	4944113	1498355	2832461
Toronto and Region CA	38410000	120959000	35429000	62499000
Upper Thames River CA	6503483	15849273	6434828	5952161
	$132,728,920.00	***$375,150,886.00***	***$137,263,219.00***	***$150,573,287.00***

Conservation Authori				
	Expenditures			
Conservation Authority	**Communications**	**Administration**	**Total Expenditures**	**Charitable Status**
Ausable Bayfield CA	131221	729883	3818573	Yes
Cataraqui Region CA	133340	936057	3251020	Yes
Catfish Creek CA	18398	160989	1313800	Yes
Central Lake Ontario CA	112520	1591935	5702851	Yes
Conservation Halton	612525	3150963	26187829	Yes
Credit Valley Conservation	2026416	1570868	28044340	No
Crowe Valley CA	14654	55277	923349	Yes
Essex Region CA	209783	847714	7372240	Yes
Ganaraska Region CA	44379	787299	3274548	Yes
Grand River CA	595594	3040178	31850825	Yes
Grey Sauble Conservation	118272	507215	2889081	Yes
Hamilton CA	431810	3873882	12521762	Yes
Kawartha Conservation	79480	528983	2798556	Yes
Kettle Creek CA	194062	151733	2427114	Yes
Lake Simcoe Region CA	69937	1889220	14170064	Yes
Lakehead Region CA	96876	553716	1978944	Yes
Long Point Region CA	183386	1135361	4267254	No
Lower Thames Valley CA	254903	367191	3745931	Yes
Lower Trent Conservation	0	687975	2362075	Yes
Maitland Valley CA	141808	586787	3059084	Yes
Mattagami Region CA	523	527295	770624	No
Mississippi Valley CA	90766	504932	3226529	Yes
Niagara Peninsula CA	517422	3046228	10367191	Yes
Nickel District CA	269999	454902	1752653	Yes
North Bay-Mattawa CA	29149	140387	2679175	Yes
Nottawasaga Valley CA	0	1209660	4850507	Yes
Otonabee Conservation	0	654785	2650769	Yes
Quinte Conservation	97735	362354	3720061	Yes
Raisin Region CA	758218	268209	2307943	Yes
Rideau Valley CA	163468	1162240	9135066	No
Saugeen Conservation	206665	479316	3644235	Yes
Sault Ste. Marie CA	0	412051	1118742	Yes
South Nation Conservation	454673	1217594	6659127	Yes
St. Clair Region CA	232245	1040433	5603494	Yes
Toronto and Region CA	1591000	9163000	108682000	Yes
Upper Thames River CA	470376	2460507	15317872	Yes
	$10,351,603.00	***$46,257,119.00***	***$344,445,228.00***	

Joint Health & Safety Committee Quarterly Meeting Agenda

Date: November 12, 2020 Time: 8:30am
Warwick Conservation Area

Facilitator: Jeff Sharp
Co-Chair: Glenn Baxter
Chair: Greg Wilcox
Minutes: Jeff Sharp

Attendees: Greg Wilcox (Manager Representatives)
Emily De Cloet, Jeff Sharp (Strathroy Office Worker Representatives)
Glenn Baxter (Lands Worker Representative)

Regrets:

Guests: None

1. **Motion to approve the September 9, 2020 meeting minutes, as presented.**
   Moved by: Emily De Cloet
   Seconded by: Glenn Baxter

   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 (March 11, 2020)
    - Strike/ contact in eye while staff unloading tree
    - Strike/ contact causing cut/ abrasion while tree planting
    - Slip/ trip/ fall causing cut/ abrasion and bruise while spraying
  - **2.2** Health and Safety Manual Fire Evacuation Area/Section Wardens
    - Review Draft action plan
    - Review implementation/ training document.
    - Review calling tree to determine location of staff not accounted for during evacuation event.
    - Update on peer review by JHSC members. (ongoing)
  - **2.3** Electrofishing Health and Safety Policy
    - Following comments made a previous meeting, policy to be implemented following changes

2.4 Review draft policy

- Awaiting SOP for SCRCA employee COVID-19 exposure, Visitor SOP, off-site meeting SOP, fleet vehicle SOP and office sanitization SOP (schedule)

- **Glen Baxter** to report on:

2.5 Inspections

- McKeough (Sept 17) – Completed by Emily De Cloet
- L.C. Henderson (Oct 15) – To be completed in November

- **Jeff Sharp** reported on action items:

2.6 Evacuation Accountability Policy

- Fire drill to be planned - Postponed until development of Evacuation Policy and Procedure. (ongoing)

- **Emily De Cloet** reported on action items:

2.7 McKeough Dam

- Update on final report from external inspection of the McKeough Dam (ongoing)
  - Emily to follow up with Girish regarding any documentation resulting from the external workplace inspection conducted at the McKeough Dam
  - Update received from Girish – Inspector found no faults or concerns during inspection. Inspector has not submitted a report and has not responded to correspondence. It is unlikely that a formal report will be received from the inspector.

2.8 Changes to 'Working at Heights'

- Greg to discuss working at heights and ladder training at upcoming Supervisors meeting
- Recommended to have all working at heights equipment inspected and to assess the relevancy of equipment for work being completed by SCRCA staff.

3. Area Reports and Workplace Inspections

3.1 Outstanding 2020 locations:

- Warwick C.A due on June 11, 2020 – To be completed in November
- SCRCA office due on August, 2020 – To be completed

4. **New Business**
   - Jessy Vander Vaart has volunteered to serve a term as Lands Staff representative
   - Refresher training for all staff, WHMIS, AOC, SOP's, MOL Employee/Supervisor & any other training included in Administration Manual to be recommended, full list to be prepared from next meeting by Greg following review of training matrix.

5. **JHSC Goals and Objectives in 2020**
   - 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 appoint a Lands worker representative in November 2020 for a 3-year term (complete)
   - Conduct workplace inspections as required (at least one location each month)
   - 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.
     - This to be brought up at the supervisors meeting by a Management Rep (Greg Wilcox)
   - To send occasional Health and Safety Bulletins to all staff (i.e. Hot and Cold Weather Alerts forwarded to staff from Lambton Public Health)

6. **Proposed next meeting date:**
   2021 proposed meeting dates
   March 9, 2021
   June 8, 2021
   August 17, 2021
   November 16, 2021

7. **Adjournment**
   Moved by: Emily De Cloet
   Seconded by: Jeff Sharp

Carried

March 30, 2021

Signature of Chair | Date

March 30, 2021

Signature of Co-chair | Date

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (n)**
Report Date: April 1, 2021
Submitted by: Natasha Pozega

Subject: St. Clair River Area of Concern Update

Recommendation:

That the Board of Directors acknowledges the report dated April 1, 2021 on the St. Clair River Area of Concern.

Background:

RAP Coordination:

The most recent RAP Coordination agreement between St. Clair Region Conservation Authority and Environment and Climate Change Canada concluded on March 31, 2021. A new multi-year agreement is currently in development to support RAP coordination for the next two years with the option for a third year.

On March 9, 2021, a letter was submitted to the Four Agency Managers Committee to consider the re-designation of the Fish Tumours and Other Deformities Beneficial Use Impairment from *Requires Further Assessment* to *Not Impaired*.

An Initial Draft Status Assessment Report has been prepared for the *Restrictions on Drinking Water Consumption or Taste and Odour Problems* Beneficial Use Impairment. Upon receipt of identified missing data, this report will be presented to the Canadian RAP Implementation Committee for review.

Meetings:

Canadian RAP Implementation Committee (CRIC)

- October 27, 2020 – Teleconference
- Next Meeting: TBD

Friends of the St. Clair River (FOSCR)

- December 2, 2020 – Teleconference
- March 10, 2021 – Teleconference
- Next Meeting: April 7, 2021 – Special Meeting- Teleconference

Binational Public Advisory Council (BPAC)

- February 16, 2021 – Annual General Meeting- Teleconference
- Next Meeting: May 4, 2021 – Teleconference

Events:

Due to restrictions associated with the COVID-19 pandemic, Aamjiwnaang First Nation converted their annual St. Clair River Days event into a 3-part virtual series. Natasha Pozega attended and provided support for each of the virtual events.

> **March 13, 2021**- *St. Clair River Area of Concern 101* presented by Natasha Pozega, RAP Coordinator, St. Clair Region Conservation Authority
>
> **March 20, 2021** - *Native Plants of the Ojibwe* presented by Sharilyn Johnston, Aamjiwnaang Environment Department*, Butler's Garter Snake* presented by Dennis Plain, Aamjiwnaang Environment Department*, and Rain Gardens* presented by Shawn McKnight, Return the Landscape
>
> **March 27, 2021** - *Area of Concern, Progress of Beneficial Use Impairments* presented by April White, Environment and Climate Change Canada

Due to restrictions associated with the COVID-19 pandemic, the St. Clair River Science Symposium is being converted to a 3-part virtual series for 2021. This event aims to share the results of scientific and/or monitoring information on the remaining impairments in the St. Clair Area of Concern with the community. The first session will be held on **April 21, 2021** from 6:30pm-7:30pm. Interested parties are invited to register at friendsofstclair.ca/symposium.

Figure 1: Event graphic for virtual presentation on April 21, 2020.

This event will provide an overview of the cultural importance of water to the local Indigenous communities living along the St. Clair River, the voluntary and legislated practices adopted by local industry to reduce risk of spills, and the municipal infrastructure upgrades that provide added protection will be shared. Community members will have the opportunity to engage and ask questions about the significant progress made in improving the aquatic environment of the St. Clair River over the past 30 years—all from the comfort of their homes.

Outreach and Engagement:

The Friends of St. Clair River and the Remedial Action Plan have partnered to launch a 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. Individuals can subscribe to the newsletter at friendsofstclair.ca. The first newsletter was released in February 2021 and new editions continue to be released in the second week of each month.

Links to Newsletters:

- February 2021 Newsletter
- March 2021 Newsletter

Strategic Objectives(s):

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

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (o)**
Report Date: April 1, 2021
Submitted by: Donna Blue

Subject: Communications Update

Recommendation:

That the Board of Directors acknowledges the Communication Update report dated April 1, 2021.

Strategic Objectives(s):

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

Sydenham River Canoe and Kayak Race:

Due to the on-going COVID-19 pandemic and provincial restrictions, staff made the unfortunate decision to cancel the 2021 Sydenham River Canoe and Kayak Race. This is the fourth year in a row that the race has been cancelled – the 2018 and 2019 races were cancelled due to unsafe water levels and the 2020 race was cancelled due to the COVID-19 pandemic.

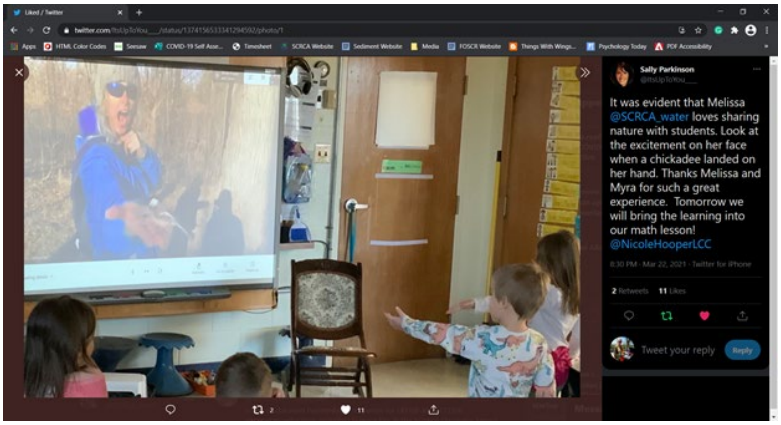
Staff are currently investigating the possibility of holding a virtual fundraiser during the summer as part of the Authority's 60th Anniversary celebrations. The "event" will be formatted similar to other virtual races/walk-a-thons that have been organized throughout the pandemic. Additional information and details will be provided to the Board of Directors at the June meeting.

Typically held at the end of April, the Sydenham River Canoe and Kayak Race serves as a fundraiser for the Authority's conservation education program and draws between 80 and 100 participants annually.

June Board of Directors Meeting and Education Demonstration:

The 2020 COVID-19 pandemic drastically altered the way educators were able to connect to their students. School closures had teachers shifting to online platforms to reach their students and September restrictions resulted in cancelled field trips and limited access to school properties. Despite these challenges, the SCRCA education team eagerly created innovative and exciting new program opportunities to support teachers and keep students connected to nature.

At the June Board of Directors meeting, our education staff will demonstrate their “Live-stream with a Naturalist” program where our SCRCA education team connects ‘live’ from a Conservation Area. This program, along with their other virtual and school-yard programs developed over the last year, have not only been successful, but welcomed by educators, parents, and students throughout the watershed.



Melissa Levi, Conservation Education Coordinator connects with an elementary school class during the SCRCA’s “Live-stream with a Naturalist” program.

60th Anniversary Social Media Campaign

Between March 29th and April 2nd, the first of a series of monthly social media campaigns was launched to celebrate the SCRCA’s 60th Anniversary and highlight the history and evolution of Authority programs and services. The March campaign focused on Flood Forecasting and Monitoring and the W. Darcy McKeough Floodway.

Social media posts were uploaded onto the Authority’s Facebook, Twitter, and Instagram accounts.

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 January 1, 2020 to March 31, 2021:

Media Relations

Activity	2021 (January – March)	2020 (January – March)
Media Releases	4	6
News Article Mentions	105	120

Social Media

Facebook

Activity	Total	2021 (January – March)	2020 (January – March)
New Likes	1,758	54	108
New Followers	1,831	68	251
Posts	--	68	20

Twitter

Activity	Total	2021 (January – March)	2020 (January – March)
Tweets	--	114	65
Retweets	--	87	93
New Followers	722	29	30
Engagements*	--	1976	1880

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

Staff Report

Meeting Date: April 15, 2021 **Item 7.1 (p)**
Report Date: April 1, 2021
Submitted by: Melissa Levi and Myra Spiller

Subject: Conservation Education Progress Report

Recommendation:

That the Board of Directors acknowledges the Conservation Education Progress Report dated April 1, 2021.

Strategic Objectives(s):

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

Winter Education Program Summary

COVID-19 continues to have a significant impact on Conservation Education. St. Clair Conservation's Education Team continues to meet these challenges with innovative, creative, and flexible programming! To date over 8,000 students have benefited this school year from St. Clair's willingness to adapt. We are thrilled to be able to share our successes. For a full list of our current programs visit www.scrca.on.ca/govirtual.

Sponsored Programs: St. Clair Education Team has created novel programming to replace traditional 'in-school' programs to ensure good relationships and continued sponsorship with our long-standing partners.

> ***Phosphorus 101:*** Sponsored by Friends of the St. Clair River and EcoAction Canada, this program introduces students from Grades 8-12 to the issue of phosphorus loading into our watershed and Lake Erie. The live-stream version of the program reached ~ 200 participants in 2021.
>
> ***Aquatic Species at Risk:*** This longstanding program, currently sponsored by the Canada Nature Fund, has been re-created into a pre-recorded video series for teachers (Grades 4-12) to use with their students. The 4-part series was launched Feb. 4th, 2021 and has over 250 views (~6000+ students reached).
>
> ***'Watershed 101'*** program was developed to replace the 'River Rap' in-school program sponsored by Friends of the St. Clair River. Watershed 101 was fully booked and ~300 students participate in the 1 hour live-stream 'from the Conservation Area' program focusing on watersheds, wetlands, run-off, and watershed management.

Spring Water Awareness Program: Plains-Midstream Canada continue to sponsor this program. Staff are in the design/development stage to adapt this program to meet the ever-changing needs of the schools and students in our watershed. Programming dates are planned for the end of April 2021.

Live-Stream with a Naturalist: Successfully completed 4 weeks of live-stream programming offering 2 different fee-based programs to students from Kindergarten to Grade 4. This programming option has proven very successful at engaging students of all ages; approximately 500 students participated during the month of March.

'Nature in Winter' program, offered to students in FDK-Grade 4, reached ~ 200 students, including one program offered bilingually in French.

'Maple Syrup' program was fully booked and as demand continued, the Education Team had to get creative with doubling bookings to accommodate the many requests. Overall, ~300 students participated in the program, which was offered in both English and French.

Virtual Field Trips: Requests continue to purchase the Virtual Field Trip subscriptions. This has been an excellent way to recover staff time associated with producing these virtual field trips during 'lock-down' last spring. To date, approximately 900 students have benefited from the Virtual Field Trip subscriptions.

Great Lakes Virtual Field Trip Project

St. Clair Conservation has completed the Huron-Erie Corridor Great Lakes Virtual Field Trip, funded by Ministry of the Environment, Conservation, and Parks (MECP). The project is now in the Pilot phase and after consultation with teachers/students the project will be ready for release April 30th, 2021. The St. Clair Education Team continues to act as Mentor for the other three teams creating Great Lakes Virtual Field Trips across the province.

Kettle and Stony Point First Nation – Canadian Nature Fund, Year 2

Staff have been working with three classes this year at Kettle and Stony Point First Nation, in partnership with the Ojibwee program and the Principal/Education Director to add a western science lens to the school's Land Based Education curriculum. Successful school outdoor visits occurred in October, November, and December 2020. Spring planning is now under way and will resume as soon as the school has re-opened. The St. Clair Education Team plans to visit the school twice per month for program delivery and has been invited to participate in a number of community events and cultural programming.

Melissa Levi, Conservation Education Coordinator, demonstrates how benthic invertebrates are collected from streams during outdoor programming at Kettle and Stony Point First Nation.

Staff Report

Meeting Date: April 15, 2021 **Item 8.1**
Report Date: March 29, 2021
Submitted by: Greg Wilcox

Subject: Highland Glen Update - AECOM Draft Recommendations for Highland Glen Repairs

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Recommendation:

That the boat ramp at Highland Glen remain closed until a time when it can be operated safely.

That the Board of Directors provide feedback that staff can forward to AECOM and receives this Highland Glen update for information while awaiting the final report.

Background:

Highland Glen Conservation Area comprises approximately 26 acres of predominantly wooded land. Situated on the Lake Huron shoreline, it is located in Plympton-Wyoming approximately 10km west of Forest. The property was purchased as two parcels, one in 1976 and one in 1977. The Conservation Area contains an access roadway, parking lot, pavilion, and boat ramp with seawall and groyne protection.

The groyne on the west side of the boat ramp was constructed by the landowner prior to acquisition by the Authority. In 1986/87 the access road, parking lot, and boat ramp were constructed. Due to safety concerns at the ramp, additional protection was constructed in 1990. The works consisted of a steel sheet pile and armour stone breakwall on the northeast side of the ramp and a steel sheet pile curtain wall connected to the existing groyne on the southwest side.

In late 2019, the original steel sheet pile groyne was damaged during a storm event. High water levels during the last few years have caused significant erosion that threatens the boat ramp infrastructure including the parking lot.

In early 2020 the boat launch was closed for the season due to safety concerns.

Safety Concerns:

- Waves coming from the west can create rough conditions at the ramp
- High water damaged existing walkways
- Since groyne failure, sediment has quickly accumulated beside the ramp which may impact the ability to launch and navigate within the ramp protection
- Erosion has exposed the eastern side of the retaining wall that supports the boat ramp and is encroaching on the parking lot

Importance of Highland Glen Boat Ramp:

- Only boat ramp facility between Sarnia and Port Franks
- Allows boaters travelling Lake Huron shoreline to safely dock if lake conditions become dangerous or mechanical issues are experienced (safe harbour)
- Launch facility for Search and Rescue Emergency Services if needed
- Recreational boating access (fishing, pleasure boating, access to cottage properties)
- Access to fishing grounds for First Nations Fishers

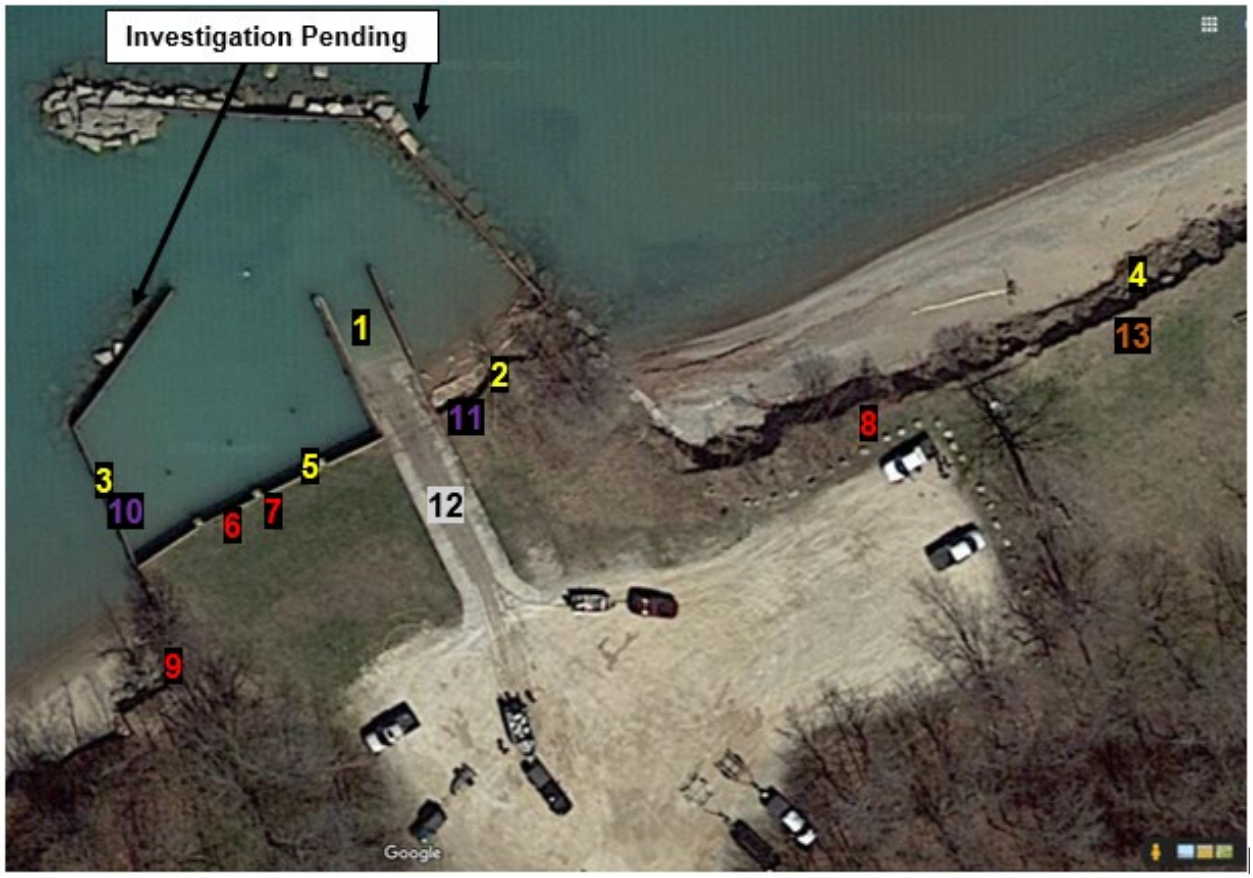
Highland Glen Boat Ramp Study:

In the fall of 2020, AECOM was selected to perform a study of the infrastructure at Highland Glen Conservation Area. Study components included site investigations, topographic and bathymetric surveys, preliminary design of remedial work, a short-term design allowing for safe re-opening, and Class D construction cost estimates.

AECOM has completed a draft report with preliminary cost estimates for review. The works have been broken down by recommended timeframe for implementation. Due to wave conditions on site in the fall, the bathymetric survey is yet to be completed. When lake conditions are favourable, the bathymetric survey will occur and the preliminary design drawings can be completed.

As this report is still a draft, there is opportunity to provide feedback to the consultant prior to completion of preliminary design drawings.

Financial Implications:



Repairs Required to Open Boat Ramp		
1	Floating platform (dock) to replace damaged walkways.	**$10,000**
2	Rip rap installation to stabilize eroding shoreline immediately east of boat ramp. Temporary fix until steel retaining wall is installed.	**$15,000**
3	Installation of a floating breakwater structure to reduce wave action inside the marina. Short-term fix that requires installation and removal each season.	**$50,000**
4	Aluminum stairway to provide safe beach access. Not a component of the boat ramp, but very important for public safety at the property.	**$10,000**
5	Short-term solution to improve safety of railing. (snow fence or similar)	**$500**
	Total Cost Estimate to Re-open Boat Ramp	**$85,500**

Proposed Repairs/Upgrades (1-3 years)		
6	Concrete splash apron installed to reduce erosion behind the retaining wall	**$20,000**
7	Railing replacement for improved public safety.	**$22,000**
8	New steel retaining wall to protect the parking lot from erosion. This would run parallel to the existing parking lot. Price is for the length of the parking lot.	**$367,000**
9	Replacement of south seawall and extension to meet the bluff (which has receded).	**$300,000**
	Total Cost Estimate (1-3 years)	**$709,000**

Proposed Repairs/Upgrades (3-5 years)		
10	Permanent replacement of failed groyne wall with a rock fill breakwater. This could be done at the beginning of project and the need for the temporary floating breakwater would be eliminated.	**$450,000**
11	New retaining wall immediately east of boat ramp.	**$260,000**
	Total Cost Estimate (3-5 years)	**$710,000**

Proposed Repairs/Upgrades (5-10 years)		
12	Boat ramp replacement.	**$550,000**
	Total Cost Estimate (5-10 years)	**$550,000**

Property Upgrades for Long-term Consideration		
13	Day use park sheet pile protection (running the length of the day use area to prevent erosion of the park)	**$1,290,000**
	Total Cost Estimate (Long-term Consideration)	**$1,290,000**

Additionally, smaller annual repairs are likely to be required. These would be funded through the collection of boat ramp user fees.

Some components of the boat ramp infrastructure could only be inspected from shore as lake conditions have restricted access. At this time it has been assumed that they are not at the end of their design life and do not require replacement. They will be inspected more closely when the bathymetric survey is completed in April.

Item 8.1
Appendix 1

St. Clair Region Conservation Authority

Highland Glen Conservation Area and Boat Launch

Preliminary Design Report (Pre-DRAFT)

Prepared by:

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519 673 5975 fax

March 2021

Project Number: 60644837

Distribution List

# Hard Copies	PDF Required	Association / Company Name
	1	St. Clair Region Conservation Authority
	1	AECOM File

Revision History

Revision #	Date	Revised By:	Revision Description
0	03/31/2020	BT	Draft – 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
Site Protection		
Groyne Wall - Floating Breakwater	$50,000	< 1 year
Groyne Wall - Rock Fill Breakwater	$450,000	3-5 years
East Beach Protection		
Parking Lot Steel Sheet Pile Wall Protection	$367,000	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	$260,000	5 years
South Seawall		
Steel Sheet Pile Replacement	$300,000	1-3 years
South Retaining Wall		
Concrete Splash Apron	$20,000	1-3 years
Railing Replacement	$22,000	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, 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***.

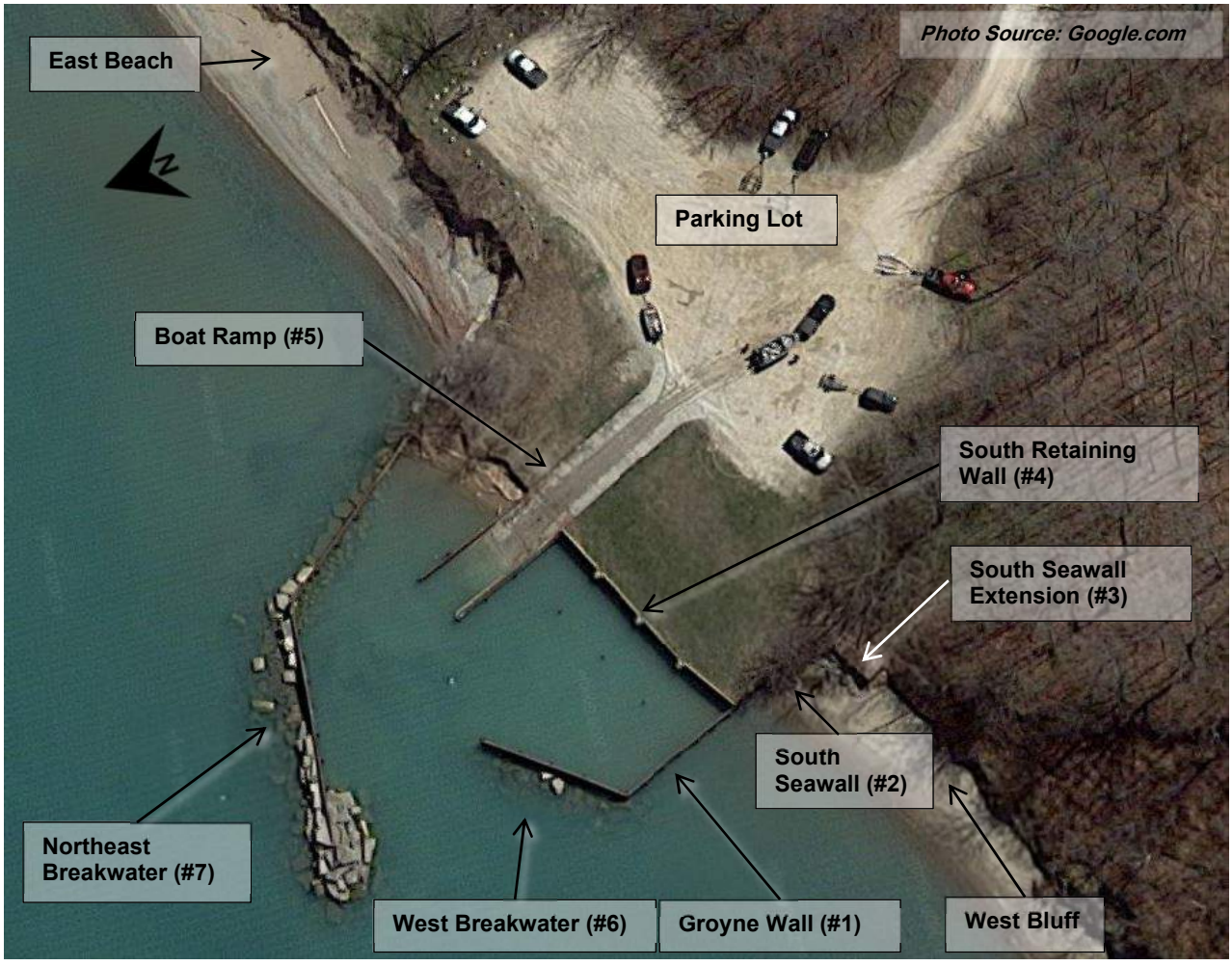


Figure 2. Aerial View

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, however, at the time of writing this report, it had not been possible to carry out the bathymetric survey due to adverse wave conditions in the nearshore area at the site.

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.

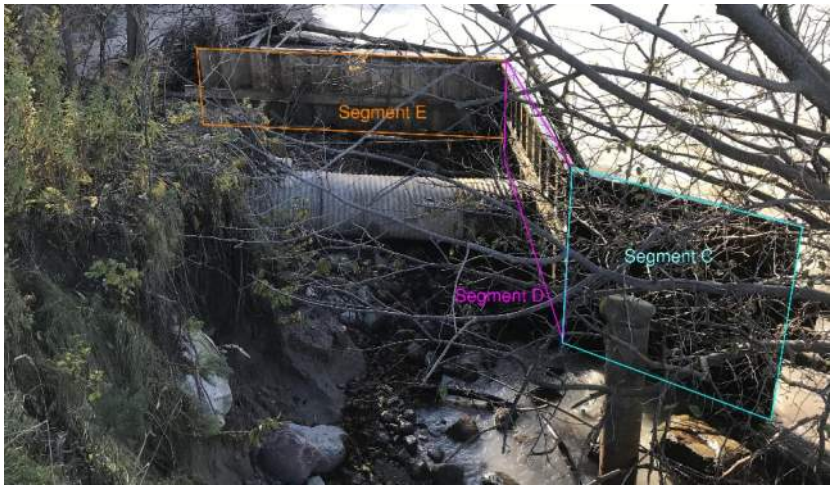


Figure 4. South Seawall Extension (#2) – Segments C, D and E

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.

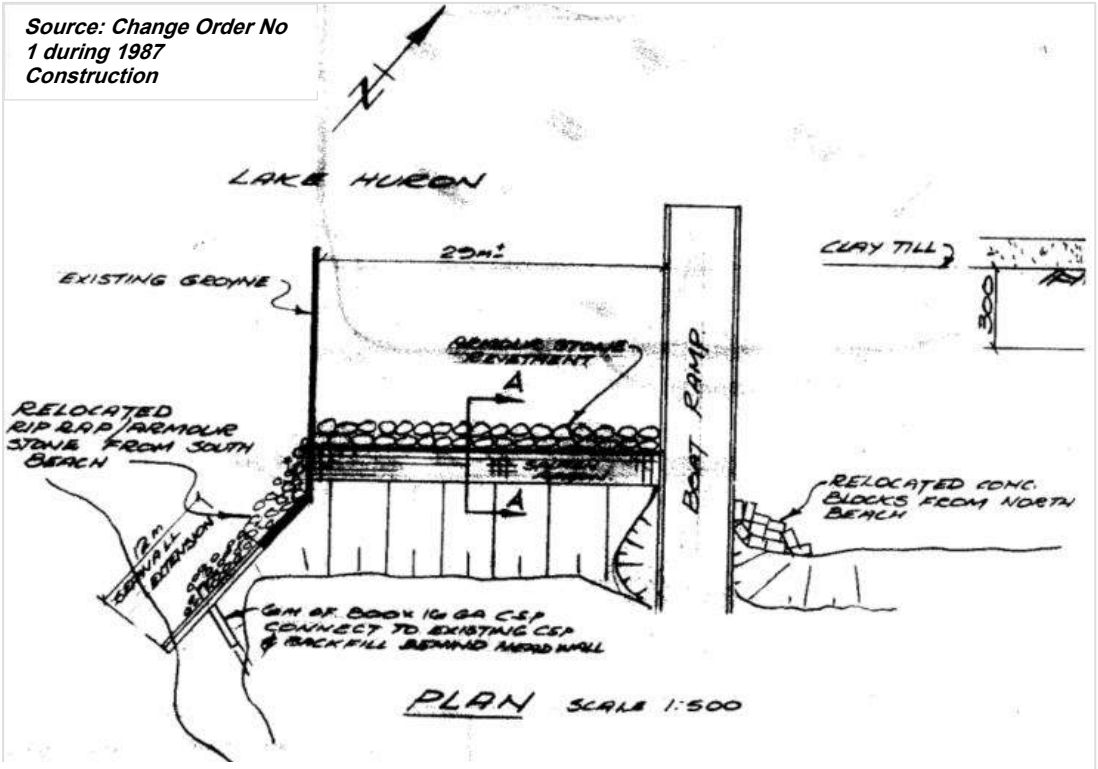


Figure 5. Original Proposed Plan of South Seawall Extension (#3)

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 33.7x10^3 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.

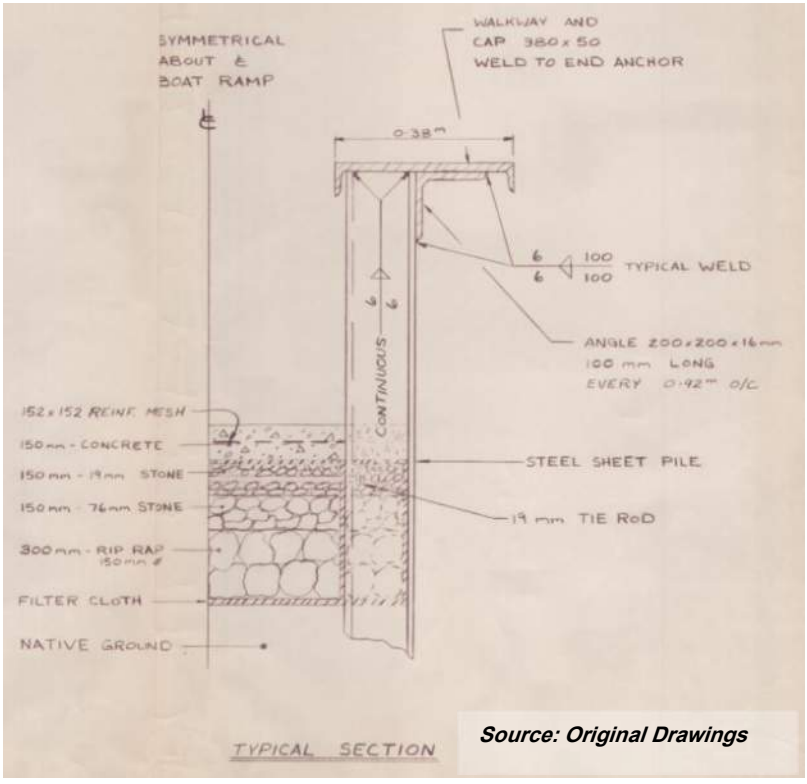


Figure 7. Typical Section of Boat Ramp (#5)

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.

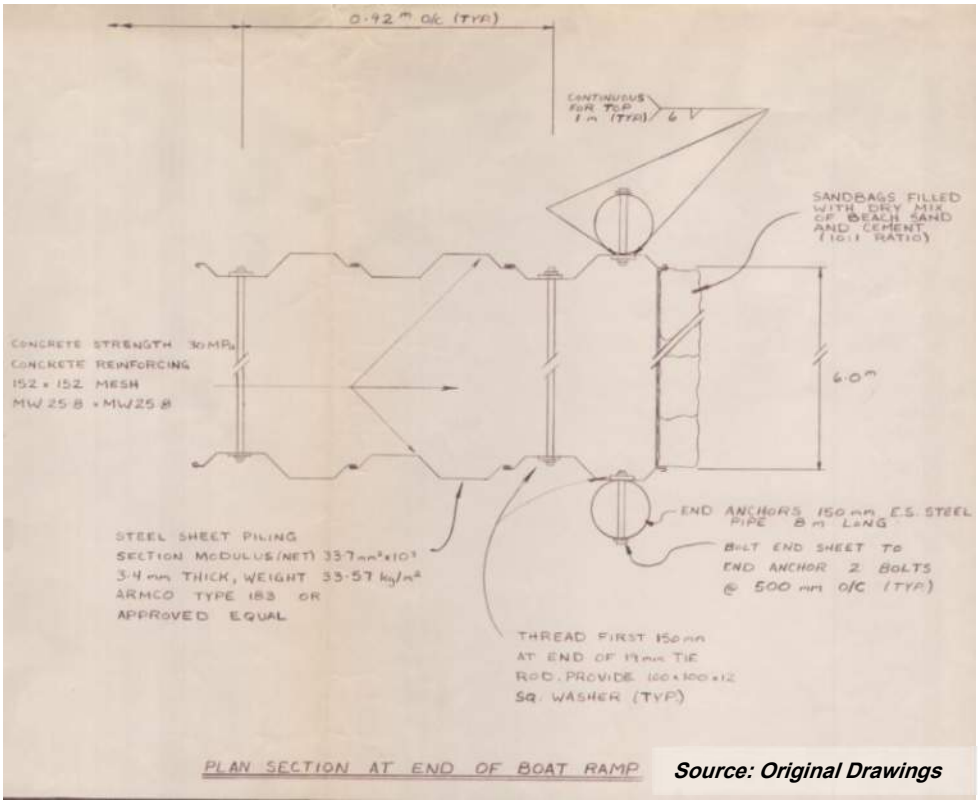


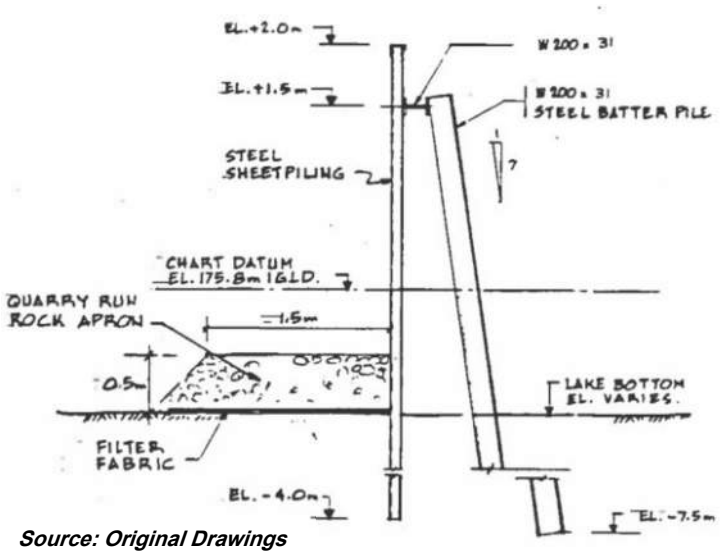
Figure 8. Plan of Boat Ramp (#5)

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.

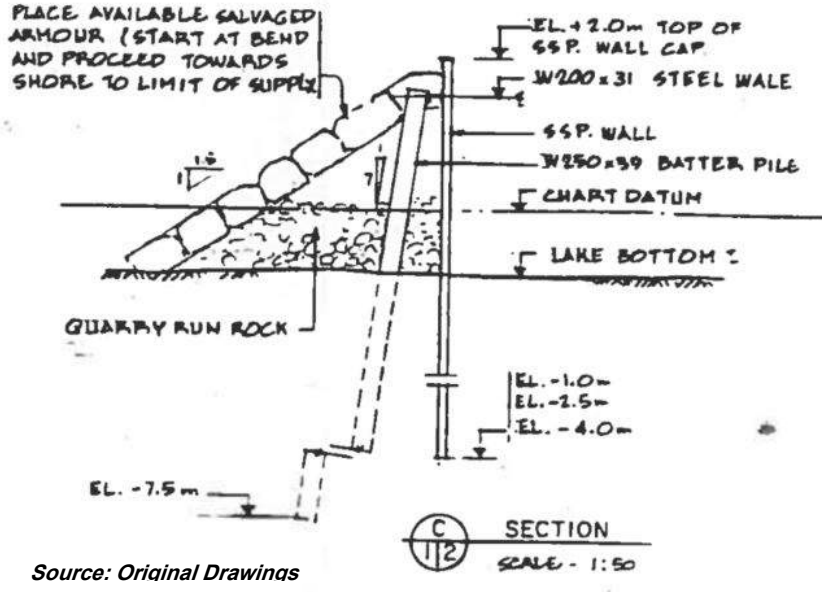


Source: Original Drawings

Figure 9. Typical Section of West Breakwater #6

2.3.7 Northeast Breakwater (#7)

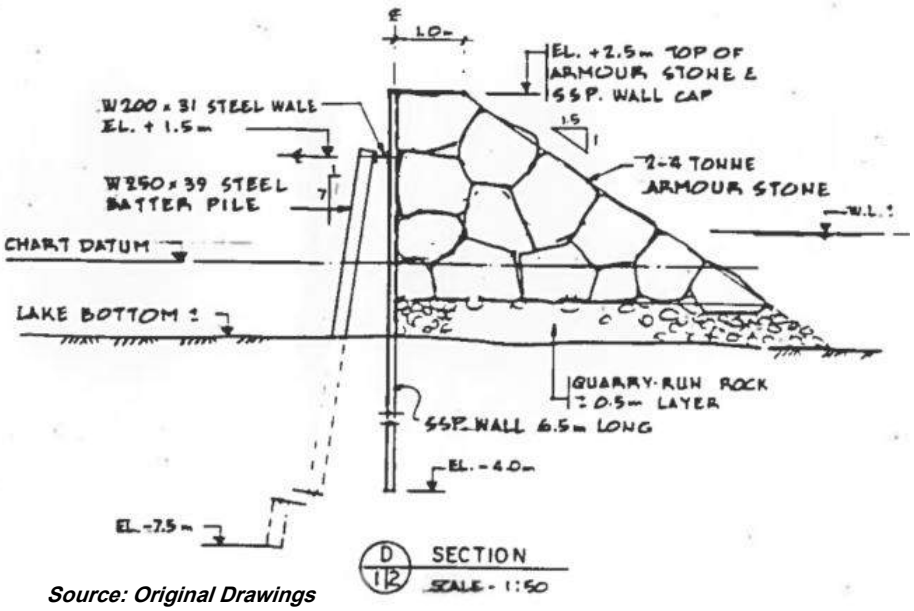
The Northeast Breakwater structure consists of two segments which have a total length of 60 m. The first segment extends from land out into the lake an angle of approximately 75 degrees from the shore. This segment is a 30 m long steel sheet pile wall with steel battered piles and quarry run rock, capped 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.

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 Erosion of Shoreline

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.

2.4.3 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.

2.4.4 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) in series collect 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, Ontario Ministry of Natural Resources and Forestry (OMNRF), and Canadian Soil Information Service (CanSIS).

The project limits fall within the Town of Highland Glen. The study area is composed largely of forested land and 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 topography 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).

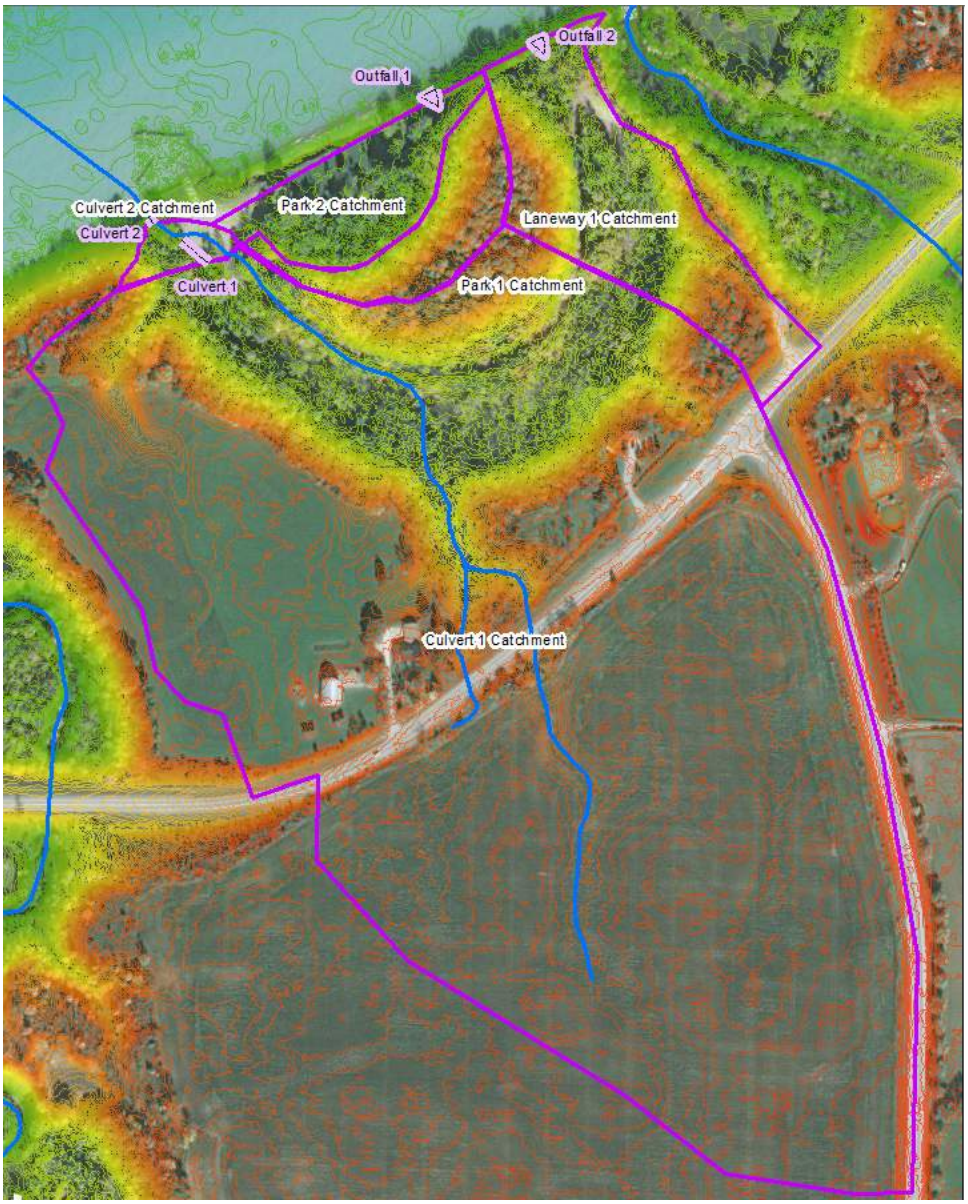


Figure 12. Catchment Areas and Outfalls

3. Discussion and Recommendations

Alternatives for the various facility components were reviewed and preliminary cost estimates were developed for the recommended repairs and rehabilitations. Assumptions regarding site conditions were made, given that geotechnical and bathymetric 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.

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*** below. 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 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.

3.1.4 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. Preliminary costing figures for a 15 m long steel sheet pile retaining wall structure including walers, pile caps, deadman anchors with tie rods and backfill are estimated at approximately $260,000. 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.

3.1.5 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 cost 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
SSP Wall East of Boat Ramp	$ 260,000	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, and 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 was 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.

An example cross-section of a rock fill breakwater is shown in ***Figure 15***.

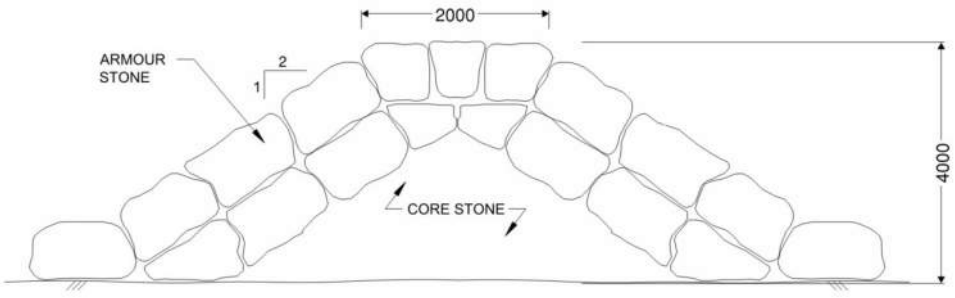


Figure 15. Rock Fill Breakwater

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 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 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 - covers 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 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 16.***

Figure 16 . 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 4***. 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 4. 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 17***.

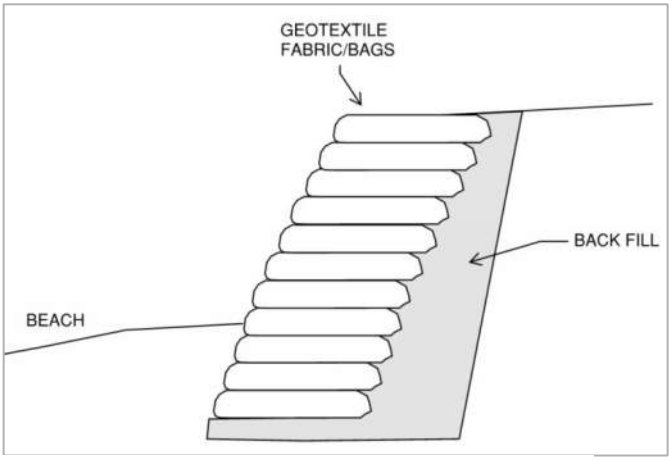


Figure 17. Mechanically Stabilized Earth Wall

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 maintain stability of the wall. An 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. A sketch of a steel sheet pile wall is provided in ***Figure 18***. 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.

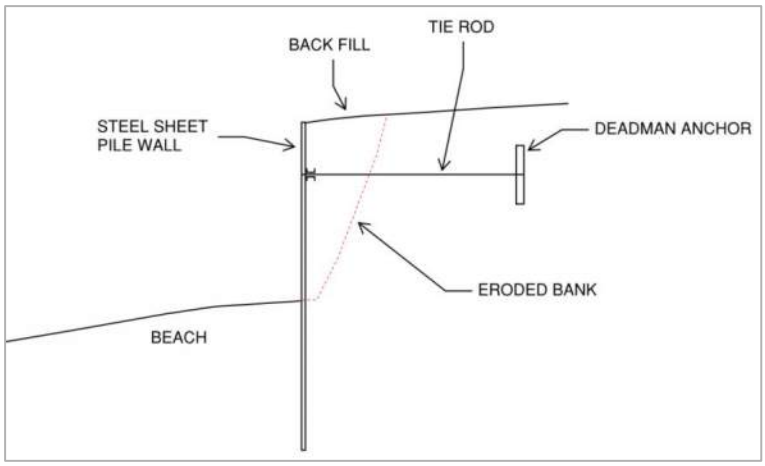


Figure 18. Steel Sheet Pile Wall

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, walers as well as tie rods and deadman anchors spaced at 2.44 m is estimated at approximately $367,000 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 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 $1,290,000 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 $10,500 per linear metre.

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 5***.

Table 5. Summary of Beach Protection Recommendations

Recommendation	Preliminary Estimate	Timing
Parking Lot Steel Sheet Pile Wall Protection	$ 367,000	1-3 years
Day-use Park Steel Sheet Pile Wall Protection	$ 1,290,000	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 19***. 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 19. 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 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.

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 20***. 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. 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, is estimated to be approximately $120,000. 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 20***. 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, tie rods and deadman anchors, as well as clear stone backfill for eroded area behind the wall, is estimated to be approximately $90,000.

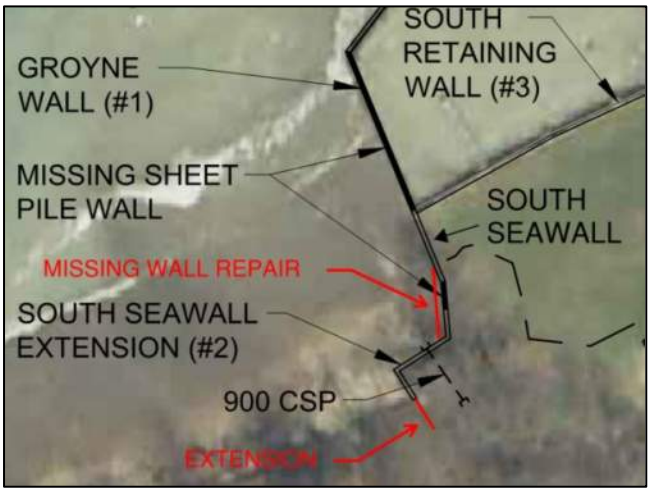


Figure 20. South Seawall Repairs

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. A sketch depicting the full replacement is provided in Figure 21. Preliminary costing figures for a 25 m long steel sheet pile wall complete with waler, pile cap, 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 $300,000.

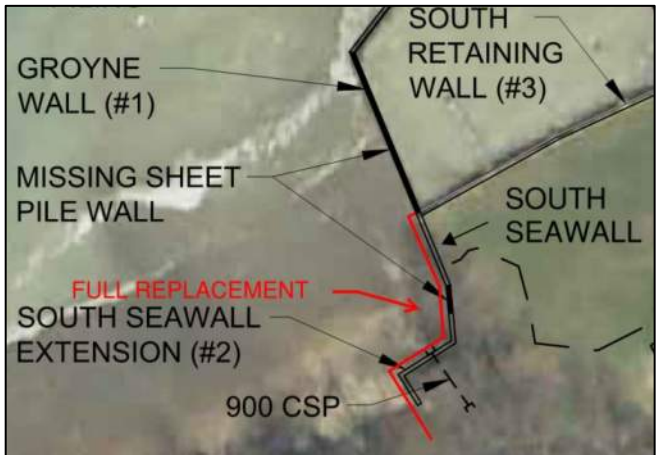


Figure 21. South Seawall Replacement and Extension

3.5.3 Recommendation

A summary of the South Seawall and Extension repair and replacement options is provided in ***Table 6***.

Table 6. Summary of South Seawall and Extension Repair and Replacement Options

Recommendation	Preliminary Estimate	Timing
South Seawall localized sheet pile repair	$ 210,000	1-3 years
South Seawall Extension	$ 90,000	1-3 years
South Seawall and South Seawall Extension Replacement	$ 300,000	1-3 years

The estimated cost of repair of a portion of the South Seawall and further extension of the South Seawall Extension at $120,000 and $90,000, respectively, for a combined cost of $210,000. 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 old wall. For an estimate $300,000, 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. It would also be prudent to add a railing system along the sheet pile wall for the safety of the public. These options have not been included in the costs 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 22***.

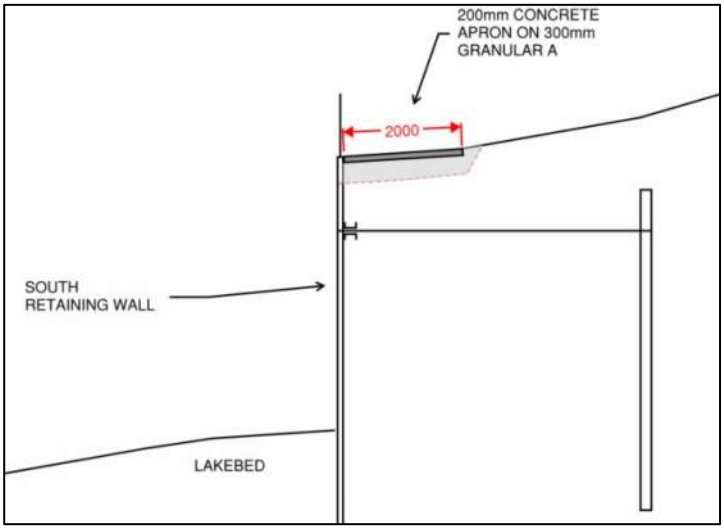


Figure 22. South Retaining Wall - Concrete Apron

To improve safety at the South Retaining Wall a permanent replacement of the railing system to a picketed railing 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 railing system is estimated to be approximately $22,000. A short-term measure for improved safety includes the installation of snow fencing or chain-link mesh attached to the existing railing 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 railing replace would provide some cost and general construction efficiencies.

A summary of the South Retaining Wall recommendations is provided in ***Table 7***.

Table 7. Summary of South Retaining Wall Recommendations

Recommendation	Preliminary Estimate	Timing
Concrete Splash Apron	$ 20,000	1-3 years
Railing Replacement	$ 22,000	1-3 years
Short-term Railing Safety Measure	$ 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 2.4.4**.

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 2.4.4**) 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 5**.

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 5**.

Table 8. 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 6**.

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 m^3/s and a standard 600 mm x 600 mm DICB will be sufficient to collect these flows.

Table 9. 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 7**.

Table 10. 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

Design Parameter		Park 1 Ditch	Outfall 1 (combined)	Outfall 1 (Park 2)	Outfall 2
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 23** 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).

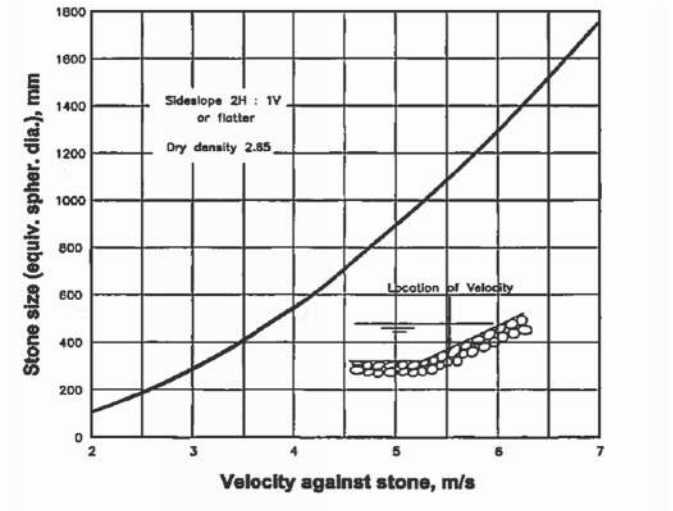


Figure 23: "Compromise" Riprap Sizing Curve.

Redirecting the Park 1 catchment area away from Outfall 1 only reduces peak flow velocities by approximaely 10%. Erosion protection sizing is not significantly reduced. Therefore redirecting flows from Park 1 may not 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.

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 11 and ***Table 12*** 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 11. Summary of Immediate Recommendations

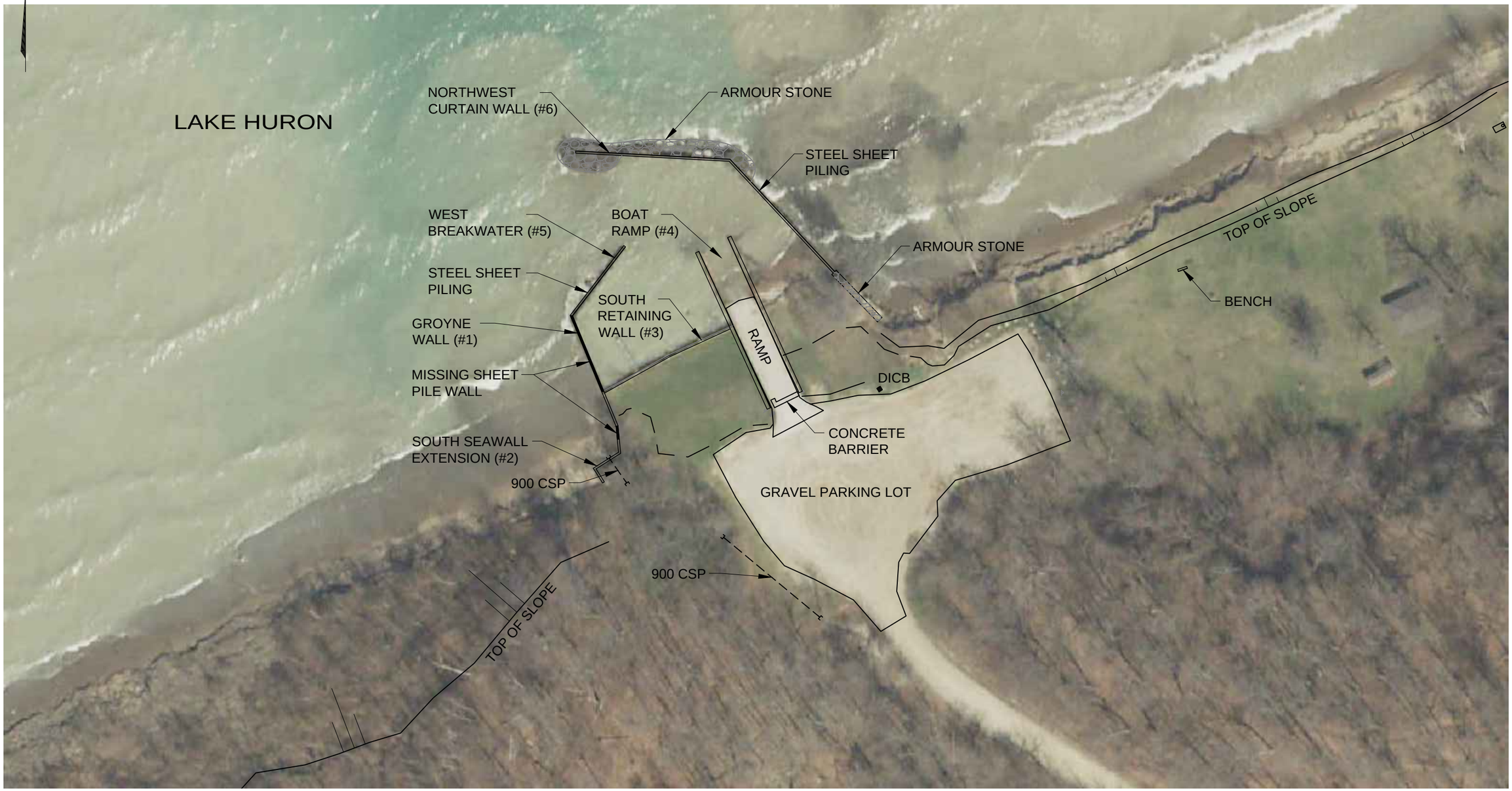
Description of Work	Preliminary Cost Estimate	Proposed Timing
Boat Launch		
Modular Floating Platform	$10,000	< 1 year
Erosion Protection of Shore East of Ramp	$15,000	< 1 year
Site Protection		
Groyne Wall - Floating Breakwater	$50,000	< 1 year
Groyne Wall - Rock Fill Breakwater	$450,000	3-5 years
East Beach Protection		
Parking Lot Steel Sheet Pile Wall Protection	$367,000	1-3 years
Beach Access		
Aluminum Stairway	$10,000	< 1 year
South Retaining Wall		
Short-term Railing Safety Measure	$500	< 1 year

Table 12. 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	$260,000	5 years
South Seawall		
Steel Sheet Pile Replacement	$300,000	1-3 years
South Retaining Wall		
Concrete Splash Apron	$20,000	1-3 years
Railing Replacement	$22,000	1-3 years

Appendix A

Site Plan Drawing



DRAWING FILE: P:\60644837 St Clair RCA -Highland Glen Boat Launch\900_CAD_GIS\910_CAD\20-SHEETS\S\60644837-FIG-30-S-A1

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AECOM	**HIGHLAND GLEN BOAT LAUNCH**	**GENERAL ARRANGEMENT** **Existing Conditions**	FIGURE No. **FIGURE A1** Date: JANUARY 2021

Appendix B

Photographs

Photo 1- Boat Ramp

Photo 2- Top of Boat Ramp

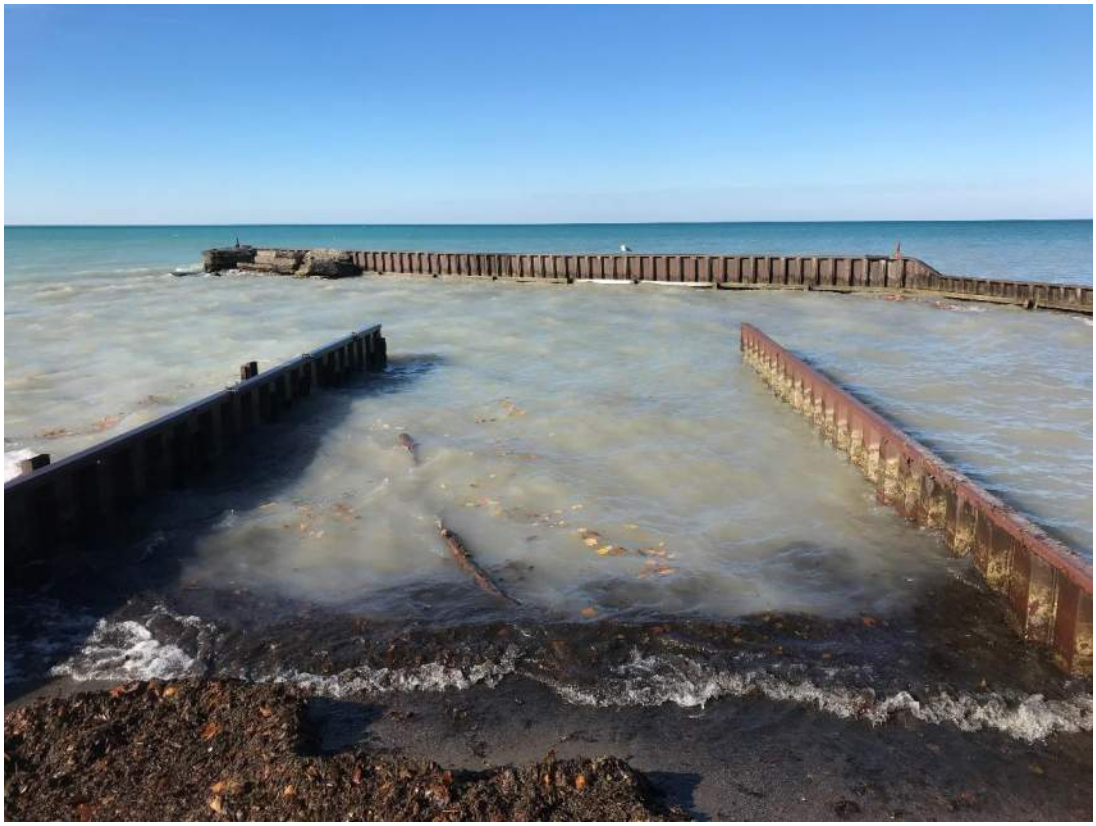

Photo 3- End of Boat Ramp at Water

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

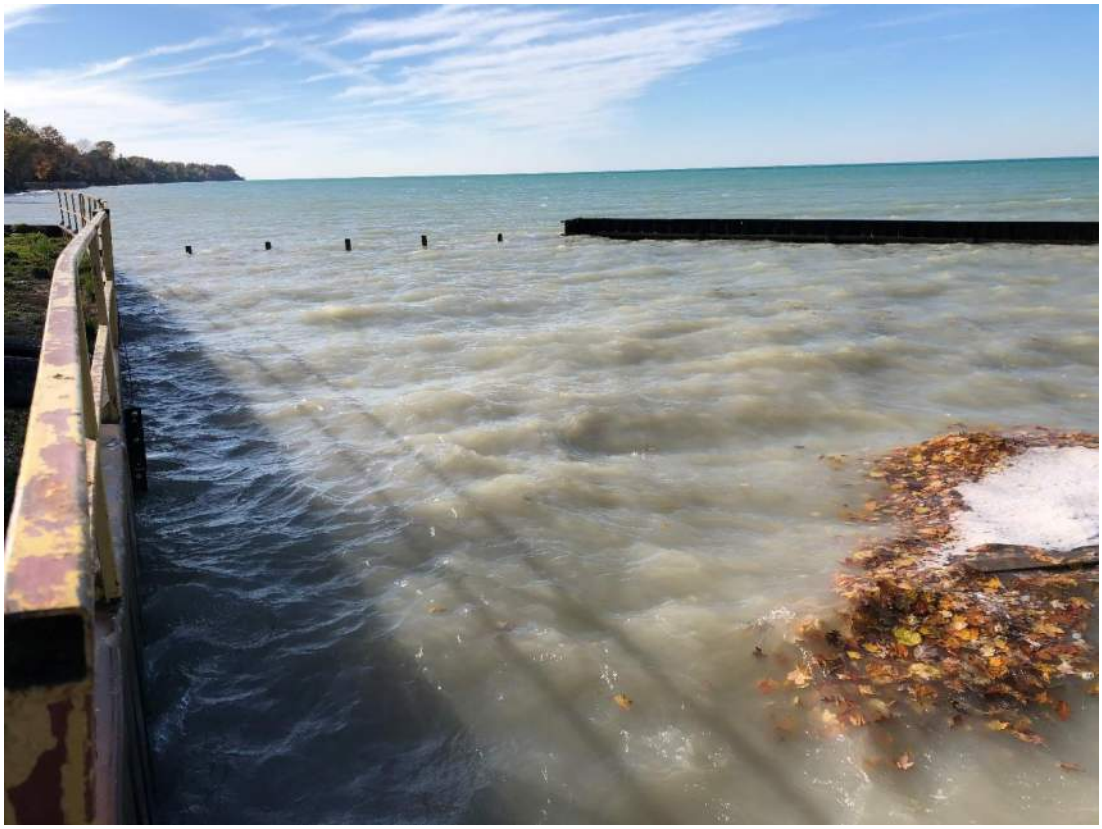

Photo 11- Missing Groyne Wall, Looking from Boat Ramp

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

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**

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	Closure Piles	each	2	$2,500	$5,000
	Subtotal				**$175,850**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$26,400
	Preliminary Estimating Contingency (20%)				$35,200
	Engineering Allowance (15%)				$26,400
	TOTAL WORK PLAN COST (rounded up to nearest hundred)				**$260,000**

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**

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**

HIGHLAND GLEN CONSERVATION AREA AND BOAT LAUNCH
Appendix C
REPAIR COST ESTIMATES (2021 dollars)

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	Clear Stone Backfill	T	17	$80	$1,376
	Subtotal				**$7,000**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$1,050
	Preliminary Estimating Contingency (20%)				$1,400
	Engineering Allowance (15%)				$1,050
	TOTAL WORK PLAN COST (rounded up to nearest hundred)				**$10,500**

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	Clear Stone Backfill	T	520	$80	$41,600
	Subtotal				**$244,000**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$37,000
	Preliminary Estimating Contingency (20%)				$49,000
	Engineering Allowance (15%)				$37,000
	TOTAL WORK PLAN COST (rounded up to nearest thousand)				**$367,000**

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	Clear Stone Backfill	T	2100	$80	$168,000
	Subtotal				**$860,000**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$129,000
	Preliminary Estimating Contingency (20%)				$172,000
	Engineering Allowance (15%)				$129,000
	TOTAL WORK PLAN COST (rounded up to nearest thousand)				**$1,290,000**

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	Closure Piles	each	2	$2,500	$5,000
	Subtotal				**$78,500**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$11,800
	Preliminary Estimating Contingency (20%)				$15,700
	Engineering Allowance (15%)				$11,800
	TOTAL WORK PLAN COST (rounded up to nearest ten thousand)				**$120,000**

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	Closure Piles	each	2	$2,500	$5,000
	Subtotal				**$53,350**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$8,100
	Preliminary Estimating Contingency (20%)				$10,700
	Engineering Allowance (15%)				$8,100
	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	Closure Piles	each	2	$2,500	$5,000
	Subtotal				**$194,750**
	Contractor Overhead, Profit, Bonds and Insurance (15%)				$29,300
	Preliminary Estimating Contingency (20%)				$39,000
	Engineering Allowance (15%)				$29,300
	TOTAL WORK PLAN COST (rounded up to nearest hundred)				**$300,000**

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	Railing	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**

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	COVERAGE[3]		
	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)
	Ground Moraine	
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
	End or Interlobate Moraine	
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
	Kames & Eskers	
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
	Lacustrine	
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
	Outwash	
5	Sand, some gravel, deep.	A
	Aeolian	
6	Very fine sand & silt, shallow. (Loess)	B
	Bedrock	
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 $V = \left(\frac{1.00}{n}\right) R^{\frac{2}{3}} \sqrt{S}$

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)	Rail ROW Length (m)	Rail ROW Up Elevation (m)	Rail ROW Down Elevation (m)	Rail ROW Slope (%)	Rail ROW C	Ditch Length (m)	Ditch Velocity (m/s)	Ditch Up Elevation (m)	Ditch Down Elevation (m)	Ditch Slope (%)	Tc (min)
Highland Culvert 1	24.0	500	195.7	194.0	0.3%	0.55	380	0.82	194.0	182.2	3.1%	72
Highland Culvert 2 (Independent)	0.2	200	194.0	182.0	6.0%	0.55	20	1.64	182.0	179.5	12.5%	24
Highland Culvert (Combined)	25.7	500	195.7	194.0	0.3%	0.55	400	0.88	194.0	179.5	3.6%	72
Park 1	0.8	40	194.8	183.0	29.5%	1.55	200	0.46	183.0	181.0	1.0%	10
Park 2	1.0	135	194.8	181.0	10.2%	2.55	25	1.31	181.0	179.0	8.0%	12
Park (Combined)	1.8	175	194.8	181.0	7.9%	3.55	25	1.31	181.0	179.0	8.0%	16
Laneway 1	2.1	225	192.7	183.0	4.3%	4.55	50	0.80	183.0	181.5	3.0%	23
Highland Culvert With Park 1	26.5	500	195.7	194.0	0.3%	4.55	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

Existing Highland Glen Culverts Minor and Major Deign Flow Hydraulics

City	Name	Water-course	Drainage System	Recom-mendation	Type	Mat'l	Diameter (Span) (mm)	Rise (mm)	Cover (m)	Length (m)	Opening Area (m^2)	Qdesign/B	(m^3/s)	Critical Depth[1] (m)	TW Depth[2] (m)	alpha (-)	Flow Area (m^2)	Velocity (m/s)	WP (m)	R (m)	Kc[3] (friction) (-)	Depth after outlet loss (m)	Fall in culvert[4] (m)	Depth at US side (m)	Average Depth (m)	d/D	Head Loss[5] (m)	Depth US of Inlet under OUTLET control[6] (m)	Clearance under OUTLET control (m)	INLET control full capacity (m^3/s)	INLET HW/D from Chart[7] (m / m)	Depth US of Inlet under INLET control (m)	Clearance under INLET control (m)	Governing Control	HW / D (m/m)	HW (m)	Clearance (m)	Flood Depth Criteria[8]	OVER-TOP ROAD?	Free-board to Road (m)	Freeboard Condition[9]	EXISTING CONDITIONS - DESIGN FLOW HYDRAULIC ASSESSMENT
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 Dc < 0.75D, Tw=Dc
If Dc > 0.75 D, TW = (dc + 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 = $(V^2/2g)*(K_{entrance} + K_{expansion} + K_c*L)$

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	Recom-mendation	Type	Mat'l	Diameter (Span) (mm)	Rise (mm)	Cover (m)	Length (m)	Opening Area (m^2)	Qdesign/B	(m^3/s)	Critical Depth[1] (m)	TW Depth[2] (m)	alpha (-)	Flow Area (m^2)	Velocity (m/s)	WP (m)	R (m)	Kc[3] (friction) (-)	Depth after outlet loss (m)	Fall in culvert[4] (m)	Depth at US side (m)	Average Depth (m)	d/D	Head Loss[5] (m)	Depth US of Inlet under OUTLET control[6] (m)	Clearance under OUTLET control (m)	INLET control full capacity (m^3/s)	INLET HW/D from Chart[7] (m / m)	Depth US of Inlet under INLET control (m)	Clearance under INLET control (m)	Governing Control	HW / D (m/m)	HW (m)	Clearance (m)	Flood Depth Criteria[8]	OVER-TOP ROAD?	Free-board to Road (m)	Freeboard Condition[9]	EXISTING CONDITIONS - DESIGN FLOW HYDRAULIC ASSESSMENT
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:

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6) Outlet Control
= Tailwater (TW) + Head Loss (HL) - Fall in Culvert (assumed 0.2 m if no invert detail available)

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Determined by Design Charts 2.31 and 2.32 (MTO Drainage Management Manual) (Not applied to flow < 25% full capacity)

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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

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	m3/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	m2	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	m3/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.

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ST. CLAIR REGION CONSERVATION AUTHORITY
Cheques January to March 2021

CHQ. #	DATE	VENDOR	DESCRIPTION	AMOUNT
121622	1/7/2021	CONSERVATION ONTARIO	2021 Levy	$ 14,962.00
121644	1/20/2021	Facca Incorporated	Old Lakeshore Rd E Project	$ 206,660.72
121654	1/20/2021	SHOREPLAN ENGINEERING LTD.	Helen to Kenwick - Phase 3	$ 10,939.99
121662	2/10/2021	Facca Incorporated	Old Lakeshore Rd E Project	$ 80,371.07
121670	2/10/2021	Parsons Inc.	Sediment Project	$ 20,697.93
121676	2/10/2021	SHOREPLAN ENGINEERING LTD.	Brightsgrove - Old Lakeshore Rd	$ 26,710.07
121679	2/10/2021	Tim L. Dobbie Consulting Ltd	Planning Review	$ 21,018.00
121687	2/23/2021	SOMERVILLE NURSERIES INC.	Seedling Deposit	$ 17,300.00
121689	3/17/2021	AECOM Canada Ltd	Highland Glen Project	$ 11,617.03
121698	3/17/2021	Konica Minolta Business Solutions (Canada) Ltd.	Document Management	$ 15,000.00
121700	3/17/2021	LAKESIDE GRAIN & FEED LTD.	Herbicide	$ 5,659.20
121706	3/17/2021	MUNICIPALITY OF CHATHAM KENT	Green Infrastructure Promotion in Rural Drainage	$ 8,750.00
121707	3/17/2021	Parsons Inc.	Sediment Project	$ 41,257.88
121714	3/17/2021	Rural Lambton Stewardship Network	Wetland Creation	$ 5,000.00

TOTAL CHEQUE DISBURSEMENTS - BANK #1 - $ 485,943.89

INTERNET BANKING January to March 2021

TRANS #	DATE	VENDOR	DESCRIPTION	AMOUNT
9701	1/20/2021	MNP LLP	2020 Audit	$ 5,339.25
9715	1/31/2021	OMERS	Pension	$ 32,302.60
9717	1/31/2021	RECEIVER GENERAL	Source Deduction	$ 52,088.86
9719	1/31/2021	RWAM Insurance Administrators Inc	Group Benefits	$ 13,865.95
9735	2/28/2021	Municipality of Chatham-Kent - Property Taxes	Property Taxes	$ 5,459.11
9740	2/28/2021	OMERS	Pension	$ 31,830.82
9743	2/28/2021	RECEIVER GENERAL	Source Deduction	$ 51,610.32
9744	2/28/2021	RWAM Insurance Administrators Inc	Group Benefits	$ 13,244.60
9747	2/28/2021	Township of St. Clair - Property Taxes	Property Taxes	$ 18,928.13
9762	3/31/2021	Kisters North America	WISKI Annual Support	$ 5,086.95
9765	3/31/2021	OMERS	Pension	$ 33,662.52
9768	3/31/2021	RECEIVER GENERAL	Source Deduction	$ 54,999.52
9769	3/31/2021	RWAM Insurance Administrators Inc	Group Benefits	$ 12,341.65
9772	3/31/2021	WORKPLACE SAFETY & INS. BOARD	WSIB	$ 5,850.09

TOTAL INTERNET DISBURSEMENTS - BANK NO. 1 - $ 336,610.37

Notes:

PAYROLL RUNS

PAYROLL NO. 1	$	57,751.68
PAYROLL NO. 2	$	57,893.95
PAYROLL NO. 3	$	58,031.26
PAYROLL NO. 4	$	56,861.77
PAYROLL NO. 5	$	55,789.36
PAYROLL NO. 6	$	65,063.86
PAYROLL NO.		

TOTAL PAYROLL RUNS - $ 351,391.88

TOTAL DISBURSEMENTS - $1,173,946.14

Staff Report

Meeting Date: April 15, 2021 **Item New Business (11.1)**
Report Date: April 14, 2021
Submitted by: Brian McDougall

Subject: Confirmation of Current Municipal Member Composition

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Recommendation:

- That the Board of Directors support the current membership of the St. Clair Region Conservation Authority allocating one (1) member each to the Adelaide-Metcalfe, Brooke-Alvinston, Dawn-Euphemia, Lambton Shores, Middlesex Centre, Petrolia, Plympton-Wyoming, Point Edward, Warwick; two (2) members to the Chatham-Kent, St. Clair, Strathroy-Caradoc; three (3) members to the City of Sarnia; one (1) member to Enniskillen which will also represent Oil Springs and one (1) member rotating between Southwest Middlesex (first 3 years of each municipal term) and Newbury (final year of each municipal term) be maintained; and further that each member municipality of the St. Clair Region Conservation Authority support the current membership plan with a resolution of Council to be copied to the Conservation Authority and subsequently to the Minister of Environment, Conservation and Parks

Background

- As previously reported, documentation confirming the acceptance of the current membership formula by the Authority Board and all member municipalities has not been located within the reporting timeline requested by the Minister
- It has been recommended to all those Authorities in a similar situation to request that the Board of Directors and all member municipalities confirm their support for the current membership formula and that these be provide to the Minister and posted to the Authority's website upon receipt

Municipal Assessment Apportionment and Apportioned Population Municipality	2021 Budget Total CVA 2020 Apport.%	2021 Budget CVA 2020 Apport.%	2021 CVA Population 2020 Apport.	2021 Budget CVA 2020 Apport.%
Adelaide Metcalfe Tp	1.9190%	1.9190%	1,817	1.2283%
Brooke-Alvinston Tp	1.7871%	1.7871%	2,219	1.5001%
Chatham-Kent M		6.5222%		
Chatham-Kent M	13.0443%	6.5222%	24,240	16.3865%
Dawn-Euphemia Tp	2.6508%	2.6508%	1,731	1.1702%
Enniskillen Tp	1.9973%	1.9973%	2,653	1.7935%
Lambton Shores M	4.9903%	4.9903%	4,511	3.0495%
Middlesex Centre M	2.2426%	2.2426%	2,429	1.6420%
Newbury V	0.1528%	0.1528%	388	0.2623%
Oil Springs V	0.1986%	0.1986%	575	0.3887%
Petrolia T	2.5364%	2.5364%	4,917	3.3239%
Plympton-Wyoming T	5.4734%	5.4734%	7,445	5.0329%
Point Edward V	2.2156%	2.2156%	1,818	1.2290%
Sarnia C		12.4891%		
Sarnia C		12.4891%		
Sarnia C	37.4674%	12.4891%	62,480	42.2370%
Southwest Middlesex M	1.1705%	1.1705%	2,000	1.3520%
St. Clair Tp		5.6011%		
St. Clair Tp	11.2021%	5.6011%	12,717	8.5968%
Strathroy - Caradoc Tp		4.3240%		
Strathroy - Caradoc Tp	8.6479%	4.3240%	12,891	8.7144%
Warwick Tp	2.3039%	2.3039%	3,096	2.0929%
	100%	100%	147,927	100%

EXCERPTS FROM

Conservation Authorities Act

R.S.O. 1990, CHAPTER C.27

Consolidation Period: From February 2, 2021 to the e-Laws currency date.
Last amendment: 2020, c. 36, Sched. 6, s. 1-25.

PART II
ESTABLISHMENT OF CONSERVATION AUTHORITIES

Representatives at meeting

2 (2) The council of each municipality may appoint representatives to attend the meeting in the following numbers:

1. Where the population is 1,000,000 or more, seven representatives.
1.1 Where the population is 500,000 or more but less than 1,000,000, six representatives.
1.2 Where the population is 250,000 or more but less than 500,000, five representatives.
2. Where the population is 100,000 or more but less than 250,000, four representatives.
3. Where the population is 50,000 or more but less than 100,000, three representatives.
4. Where the population is 10,000 or more but less than 50,000, two representatives.
5. Where the population is less than 10,000, one representative. R.S.O. 1990, c. C.27, s. 2 (2); 2001, c. 9, Sched. K, s. 1 (1).

Grouping of Municipalities

8 The participating municipalities may designate any group of municipalities that shall be considered as one municipality for the purpose of appointing a member or members to a conservation authority and provide for the appointment of the member or members to be appointed by a group of municipalities. R.S.O. 1990, c. C.27, s. 8; 1998, c. 18, Sched. I, s.

SCRCA 2021

Population is 50,000 or more but less than 100,000, three representatives	Sarnia
Population is 10,000 or more but less than 50,000, two representatives	Chatham-Kent, St. Clair, Strathroy-Caradoc
Population is less than 10,000, one representative	Adelaide-Metcalfe, Brooke-Alvinston, Dawn-Euphemia, Lambton Shores, Middlesex Centre, Petrolia, Plympton-Wyoming, Point Edward, Warwick
Combined representation	Enniskillen (Oil Springs confers its membership to the appointed member from Enniskillen)*
Combined representation	Southwest Middlesex 3 years of each 4 year term of Council / Newbury 1 year of each 4 year term of Council (each municipality confers its membership to the other when not appointing)*

*During normal business, the members of combined representation have one vote per motion. At the annual approval of the budget, specifically regarding the non-matching budget portion of the budget, the appointed member of the combined representation votes for each of the municipalities carrying the weight of each municipalities percentage of the overall cumulative value assessment.

BRIAN J. MCDOUGALL

94 EMERALD ROAD · LONDON, ONTARIO · N6M 1H9 · (519) 680 - 3793

March 19, 2021

St. Clair Region Conservation Authority
205 Millpond Crescent
Strathroy ON N7G 3P9

Attention: Joe Faas, Chair & Larry Gordon, Vice Chair

Gentlemen;

I would like to inform you that I am retiring from my position with St. Clair Conservation, effective November 6, 2021.

I have spent almost my entire working life with St. Clair. I am thankful to the organization and the Board of Directors for the numerous opportunities for professional and personal development that have been provided to me over the past 30 plus years. I have enjoyed working for the Authority and I appreciate the support provided to me during my tenure with the organization.

While I look forward to enjoying my retirement, I will miss the work and my colleagues at St. Clair.

As discussed, I am prepared to provide any assistance during this transition to ensure that the Authority Board and staff are fully support in the transition to my successor.

Thank you.

Sincerely,

Brian McDougall