
CENTRAL LAKE ONTARIO CONSERVATION
AUTHORITY

2020
ANNUAL
REPORT

Healthy watersheds for today and tomorrow.

www.cloca.com | 905 579 0411 | info@cloca.com

MESSAGE FROM THE CHAIR AND CAO

The year 2020 will not soon be forgotten for both the challenges and opportunities presented to our Central Lake Ontario Conservation Authority (CLOCA) team. If we have learned anything from this experience is that we should never take for granted our health, our families, our colleagues. Other lessons that came home to roost, is that we are extremely resilient and adaptable qualities that bode well for our organization. And finally, when we work as a team, the outcome is better than had we done it alone.

In our 62 years, CLOCA has never shuttered our office doors or had to close our Conservation Areas to the public. It was not without a lot of effort behind the scenes by our Information Technology team to implement our digital transformation plan that allowed us to overcome this first challenge of the COVID 19 lockdown, working remotely. This plan gave staff, stakeholders and the community we service, a seamless transition; one that lasted 299 days and counting.

Despite delays to our field work season and the new safety requirements for working together, but apart, staff were able to collect the data necessary to continue our work in watershed management and flood forecasting and warning. Our Operations and Land Management staff were our front line workers, responding to the significant increase in visitors to our Conservation Areas once they were retooled and reopened.

Problem solving, communication and innovation became our 'new normal' as we strived to deliver on our commitment to connect people with nature – close to home.

Our review of planning files and issuing of permits was uninterrupted, using a variety of technology tools that allowed us to meet our timelines consistently. Our education programs transitioned to providing our teachers and in some cases parents and their students with a variety of online resources, suitable for in class and at home learning.

We completed our annual financial audit virtually and transitioned our purchasing program to a paperless model, something we were only able to accomplish with a dedicated team. It is this willingness to keep pace, moving projects forward across all departments, that you will see in the content of this annual report. We surpassed our own expectations, getting things done in a way that was perhaps more meaningful because we are leaders in conservation and collaboration. We are very proud of what we have accomplished in 2020 and thank you for being part of our journey.

INTRODUCTION

Central Lake Ontario Conservation Authority receives approximately 50 per cent of its annual operating budget from the Region of Durham and generates the balance from fees-for-service, financial and in-kind support from the private and public sector. In return, our responsibilities are to manage a 639 square-kilometre jurisdiction with 24 watersheds and 2,700 hectares of land to protect biodiversity, improve overall watershed health and provide public-use opportunities for the benefit of our watershed community. If we were to put a dollar value to the ecological services provided by our watershed, we have estimated the value to be \$130 million* annually, to support our local economy.

This annual report provides a summary of accomplishments specific to the five goals established in the *Central Lake Ontario Conservation Authority Strategic Plan 2016 to 2020*.



*Source: Ecological Services: Valuing Natural Areas within CLOCA
Action Plan 14, October 2017

LEADERS IN INTEGRATED WATERSHED MANAGEMENT

PLANNING AND REGULATION

Our Planning and Regulation responsibilities focus on protecting people and property from natural hazards. We direct new development away from natural hazards and protect wetlands, watercourses, woodlands, fish habitat, and other key features.

We provided environmental planning advice on numerous remote pre-application consultation meetings with landowners, developers, and municipal planning department staff in 2020. As well, we issued 218 permits for various development activities, under *Ontario Regulation 42/06*. We reviewed over 1,969 different technical submissions from municipalities, consultants and landowners and entered over 6,887 documents into our electronic records management system for efficient retrieval and archiving. We also managed multiple violations of the regulation through enforcement and compliance activity to maintain the integrity of the development regulation and address unsafe and unauthorized development activities. In addition, we provided technical data, advice and detailed design review and approvals for many municipal infrastructure environmental assessments across the watershed.

Central Lake Ontario Conservation Authority continued to play an important role in the development of municipal policy, zoning, studies, provincial legislation and guiding documents which focus on natural heritage, wetlands, Conservation Authority product and service delivery, agriculture land use and large-scale commercial fill operations. In 2020 we dedicated significant effort toward supporting the beginning of draft subdivision applications in the rapidly growing areas of Brooklin (Town of Whitby), Kedron (City of Oshawa) and finalizing the *Southeast Courtice Secondary Plan* (Municipality of Clarington).

218
permits
issued

1,969
submissions
reviewed

6,887
documents
entered

IRONWOOD DEVELOPMENT

Central Lake Ontario Conservation Authority staff across multiple departments were extremely effective in a collaboration with Podium Developments and Building Capital in creating Durham Region's 2020 Community of the Year with the Ironwood Development in North Oshawa. This freehold townhouse development was created with respect for the environment, ensuring the community was surrounded by hundreds of acres of protected conservation land, forests and parks, and is bisected by a section of Oshawa Creek. Several onsite remediations to various infrastructure features, improvements to fish spawning habitat and dedication of 1.4 hectares of ravine land to the City of Oshawa to support a natural wildlife corridor supports our conservation targets for the Oshawa Creek watershed. Additional features will include planting native trees and shrubs to restore an adjacent open field, monitoring and management of invasive species.

Additional support was provided throughout the design process working with hydro-geomorphologists, ecologists, hydrologists, and a river restoration expert to ensure the environmental impact studies captured the significance of this site. These studies are a requirement of the development process and contributed to a better understanding of existing flora, fauna and, in this case, spawning salmon and further supported efforts to mitigate the potential impact, and enhance existing natural heritage features.

Before and after images provided by Podium Developments and Building Capital show Oshawa Creek rehabilitation work done at the site of their Ironwood development.



CONSERVATION & RESTORATION PLANNING FRAMEWORK

With the recent enhancement of our restoration program, it is important that CLOCA has an effective process to guide our restoration efforts. The ***Conservation and Restoration Planning Framework*** was completed in 2020 to improve successful implementation of conservation and restoration projects by providing a systematic, comprehensive, and consistent process that links actions to results and ultimate outcomes. The *Framework* will ensure that projects align with our strategic priorities, and that resources dedicated to conservation and restoration projects are used wisely and result in the biggest ecological return from the investment. There are eight steps within the framework to support project design and implementation. The application and use of the *Framework*, provides a consistent and effective approach to ecological conservation and restoration activities. Use of the framework supports CLOCA's *Strategic Plan* Goals and, therefore, helps to achieve natural heritage conservation targets.

WATERSHED PLAN UPDATES

In June 2020, the CLOCA Board of Directors approved updates to the following *Watershed Plans*:

- ***Lynde Creek Watershed Plan***
- ***Oshawa Creek Watershed Plan***
- ***Harmony/Farewell/Black Creek Watershed Plan***
- ***Bowmanville/Soper Creek Watershed Plan***

These *Watershed Plans* provide a framework and recommended actions to protect, restore and enhance our watersheds. Since the approval of the original watershed plans in 2013, there have been changes to provincial planning legislation and land-use that affect how we manage our watershed resources. The updated plans reflect those changes, update resource mapping, and provide new guidance for land-use management in our watersheds. The updated *Watershed Plans* do not replace previous *Watershed Plans*, but rather build on the foundations they have established, to ensure we continue to deliver on our mandate to create healthy and resilient watersheds. For each of the four plans, we conducted a series of consultation sessions with our municipal partners, stakeholders, and the public to help us evolve the vision, and update the goals and actions to maintain and improve watershed health. Over the next five years, we will use these updated plans to establish a framework for CLOCA to monitor and evaluate watershed health and move forward with the recommended actions. Staff developed new branding for these plans, created online tools to ensure we share this information in a more interactive and intuitive way to meet the needs of our many audiences.

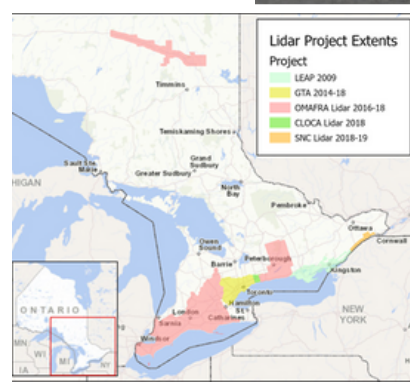
LIDAR PROJECT – MINISTRY OF NATURAL RESOURCES & FORESTRY

Central Lake Ontario Conservation Authority Light Detection and Ranging (LiDAR) mapping resources were recently incorporated into a new digital surface model by the Provincial Mapping Unit of the Ministry of Natural Resources and Forestry. This data has been released through the Ontario GeoHub as the Ontario Digital Surface Model (LiDAR-Derived).

With funding support from the National Disaster Mitigation Program (NDMP), CLOCA acquired elevation information required to update floodplain mapping for the Town of Whitby and City of Oshawa, as well as small portions of the City of Pickering, Town of Ajax, Townships of Uxbridge and Scugog, and the Municipality of Clarington. In partnership with Durham Region, the cities of Pickering and Oshawa, and the Town of Whitby, CLOCA used LiDAR to map a portion of the watershed, covering an area of 385 square kilometres. The use of LiDAR generated more detailed and accurate floodplain maps and improved flood models, providing a better understanding of flood risks, and allowing for more informed landuse planning decisions. It was these mapping resources that were shared with The Provincial Mapping Unit of the Ministry of Natural Resources and Forestry to create this comprehensive Ontario Digital Surface Model.

Airborne Topographic LiDAR projects have acquired classified LiDAR digital elevation data and derivative products for selected geographic areas in southern Ontario. This high-resolution elevation data is suitable for local and regional land resource, science, and planning applications. This new Digital Surface Model product can be used in combination with the existing Ontario Digital Terrain Model (LiDAR-Derived) data product to calculate the height of surface features. This data is intended for Geographic Information System and remote-sensing applications that require a high-resolution, high-accuracy elevation model. The surface models are valuable for:

- calculating heights for surface features such as buildings, infrastructure, or vegetation;
- infrastructure assessment and development;
- forest modelling and management,
- floodplain and hazard mapping, and modeling; and,
- viewshed analysis, among other applications.



INVASIVE SPECIES MANAGEMENT

Our Conservation Area lands are challenged by several terrestrial invasive plant species and we continue to implement our Invasive Species Management Strategy. In 2020, we removed 80 kilograms of Garlic Mustard and treated Dog Strangling vine at Purple Woods Conservation Area. Ongoing management of Phragmites at Heber Down Conservation Area has decreased the population significantly and monitoring the site for recovery continues.

A partnership with the Municipality of Clarington to manage Phragmites in a stormwater retention site in the Farewell Creek continued, with minor management activities. This site and Heber Down Conservation Area are monitored as part of the Phragmites Adaptive Management Framework to create a North American-wide initiative to determine the effect of different treatment strategies. Dog Strangling Vine was again managed on the Carruthers and Roswell Tract to support tending practices for newly established reforestation sites. We also managed this species on the Rogers Tract and are encouraged that this could be a potential release location for biological control in 2021.

Staff continued to participate in online training and education workshops to better support current and future invasive species management. Two species we anticipate seeing in the CLOCA watershed are Gypsy Moth and Hemlock Woolly Adelgid and a noted site for Water Chestnut in one of the wetlands we monitor through the Durham Region Coastal Wetlands Program.

Anticipated species



Gypsy Moth



Hemlock Woolly Adelgid



Water Chestnut

**1.48
tonnes**

Removal of 1.48 tonnes of
Garlic Mustard since 2014

CONSERVATION AREA IMPROVEMENTS

Each year, CLOCA land management and field operations staff implement several projects at various CLOCA Conservation Areas to update and replace aging public use infrastructure, facilitate day use bookings, deliver enforcement services, make trail improvements, and enhance or manage natural heritage features. In 2020, we accomplished the following:

- As a result of a flood event on January 12, repairs to trail and parking infrastructure at the main entrance were completed quickly at Lynde Shores Conservation Area with minimal disruption to service.
- Regular activities associated with the preparation of operations associated with maple syrup production were implemented in 2020 with **1,400 taps** and **1,026 litres** produced. Closure of the Conservation Area and cancellation of the 45th annual Maple Syrup Festival did not impact this aspect of our workplan.
- We monitored, observed, serviced, engaged, and managed our eight Conservation Areas as normal, from March 16 until March 23, at which time we made the difficult decision to close our Conservation Areas officially on Wednesday, March 25 and reopened on May 20.
- Closure and reopening expectations around COVID-19 were communicated with signage, social media, and staff presence at our busier Conservation Areas.
- Removal of some amenities like access to public washrooms and picnic tables, directional signage on trails and in parking areas were implemented to ensure safety of our staff and our visitors.
- Extensive garbage removal and maintenance activities were carried out during the closure and CLOCA enforcement staff worked closely with officers from neighbouring Conservation Authorities, municipalities, conservation officers (MNR) and Durham Regional Police Services to ensure that lands and infrastructure owned by CLOCA were secure and closures respected.
- Revenue collection at our Conservation Areas as part of the pay-and-display system switched predominantly to card only in an effort to address the safety issues associated with staff having to handle coin collections. A new pay-and-display parking meter was installed at Lynde Shores Conservation Area (our busiest Conservation Area), to create a more streamlined service. Parking revenues exceeded our expectations due to COVID-19 as many people sought natural areas for recreational and mental health benefits. Parking revenues assist with the cost of maintaining our eight Conservation Areas.
- With the increased visitors came an increase in compliance-related initiatives, such as enforcement of parking, litter, vandalism, and theft. Staff responded with seven-days-per-week staffing plan to ensure an increased presence.
- Improvements to the entrance at Long Sault Conservation Area included fencing around the parking lot and relocation of the existing information kiosk. It should be noted that Long Sault Conservation Area was the recipient of the *Clarington This Week Readers Choice Award for Best Outdoor Tourist Attraction* in 2020.
- Staff continue to maintain two licensed small drinking water systems to ensure we operate in accordance with *Ontario Regulation 319/08 (Small Drinking Water Systems Regulation)*.
- Hazard tree removal, as a result of staff and public reports and regularly scheduled Conservation Area inspections, included **529 trees**. Since 2017, more than **2,000 hazard trees** have been removed along our 45-kilometre trail system.

HABITAT & PUBLIC USE IMPROVEMENTS AT LYNDE SHORES CONSERVATION AREA

Improvements to our most popular Conservation Area are underway as we prepare to construct a wetland, new trails, entrance, parking lot and washroom facilities on the east side of Halls Road, south of Victoria Street in the Town of Whitby. This proposed project is a partnership between CLOCA and the Region of Durham as part of the road widening and bridge construction for Victoria Street from Halls Road to Seaboard Gate. Trail closures are not anticipated, but grading and construction activities will be ongoing from fall 2020 to summer 2021, under contract with COCO Paving.



STEWARDSHIP & RESTORATION



In 2020, we redeveloped our private land stewardship and restoration program to include a range of incentives to help landowners implement projects aimed at improving watershed health.

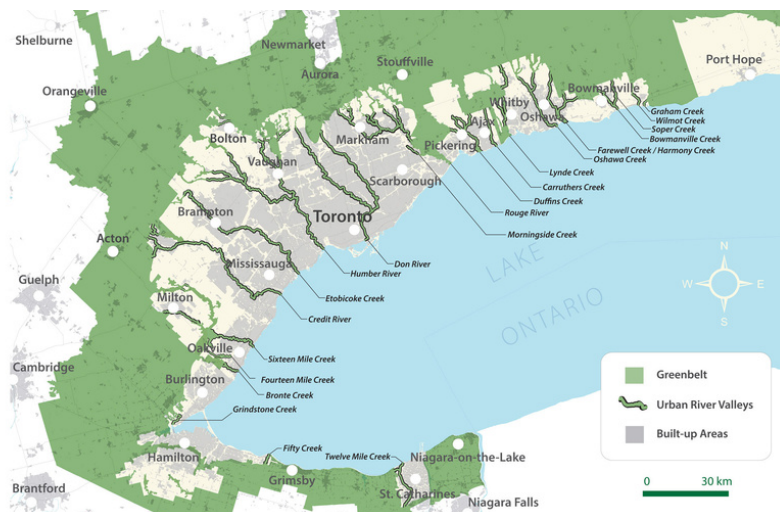
Natural Heritage staff met with several landowners and established agreements to plant over 25,000 trees on private lands in 2021. We have secured financial support for the tree planting from Forests Ontario and Highway of Heroes. Central Lake Ontario Conservation Authority also partnered with the Region of Durham and four surrounding Conservation Authorities to develop a Durham Region-wide Tree-Planting initiative. We anticipate additional tree planting opportunities to evolve in 2021 for tree planting projects in 2022, as we continue to contact and engage landowners in our watershed.

ADVANCE WATERSHED SCIENCE AND KNOWLEDGE

CLIMATE MODELING

Central Lake Ontario Conservation Authority, along with partner Conservation Authorities and municipalities, assisted the Region of Durham with the development of an updated climate change model that was completed in 2020.

Using an ensemble of global and regional climate models, this project provides realistic climate projections for weather averages and extremes, helping the Region to get 'climate ready'. Data taken from this project will inform everything from the Region's climate adaptation planning efforts, to its watershed planning documents and municipal planning review, to its *Official Plans*, policies, and programs. It will also help identify potential sites where natural solutions to climate change can be developed. This new data is already being used by a range of Durham Climate Change working groups to evaluate risks, from increased natural hazards, impacts to roads and infrastructure, and implications on natural features and watershed health as examples. These working groups include a diverse range of municipal and Conservation Authority staff with diverse technical backgrounds.



The Greenbelt's 21 Urban River Valleys, which run along major urban rivers are particularly important to urban residents because of the proximate cooling opportunity they provide in dense urban areas.

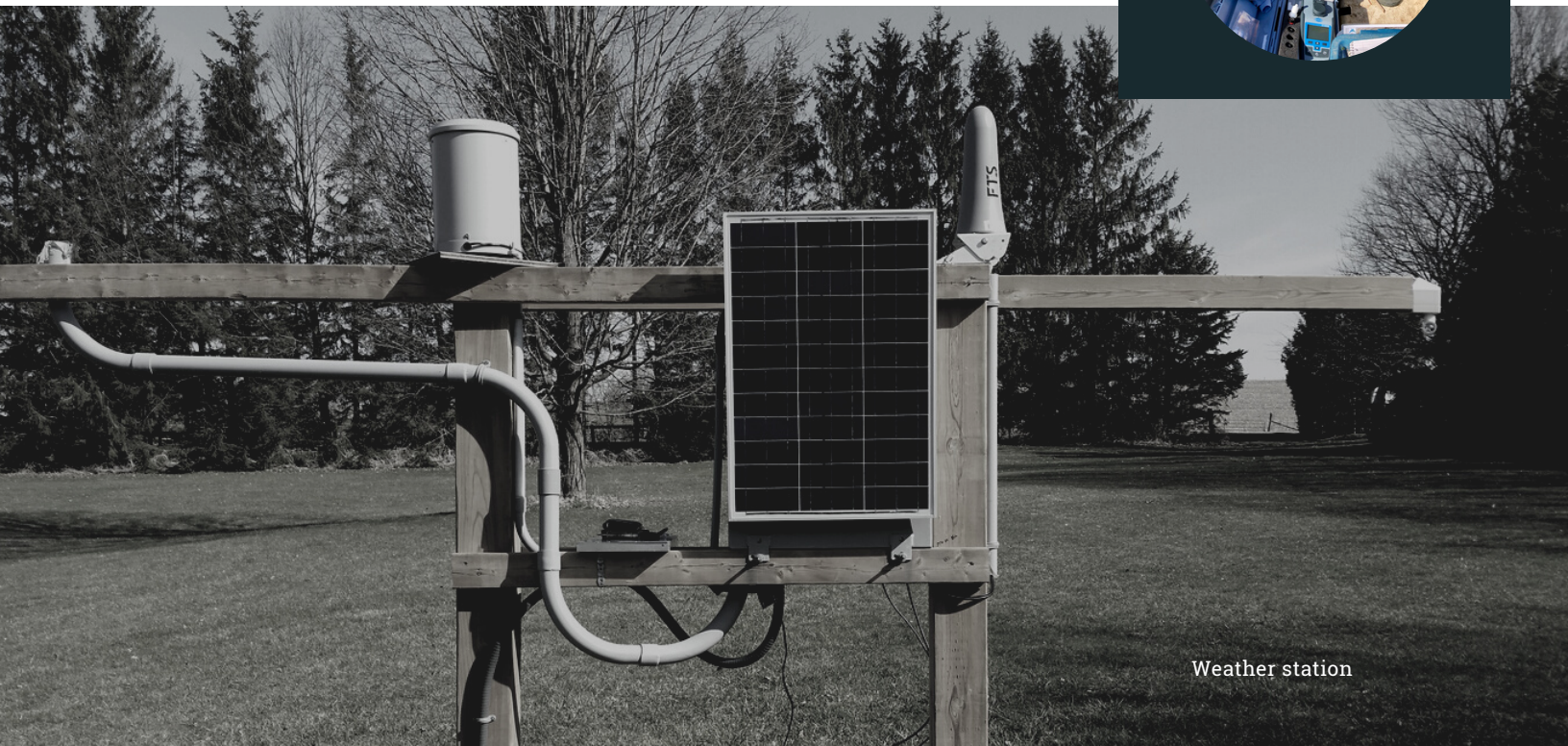
INTEGRATED WATERSHED MONITORING PROGRAM

Since 2017, we have been collecting data on 16 indicators for forest, wetland, and streams to understand current conditions that contribute to overall watershed function and health. An example of an indicator for the forest ecosystem is breeding birds, while an indicator for the stream ecosystem is water quality. These indicators, collectively, provide us with the science to better understand overall health. We also have permanent weather stations established throughout the watershed which collect data on rainfall, windspeed and direction, soil moisture, humidity, barometric pressure, and air temperature. This data is important for modelling future flooding events to better respond to climate change and support CLOCA's responsibilities for their watershed Flood Forecast and Warning program.

This year, our in-field programs and services normally carried out as part of the *Integrated Watershed Monitoring Program (IWMP)* were modified. These modifications included cancelling our summer student program, and reassigning and training staff from other departments. In addition, we experienced a delayed field season start and were challenged by additional health and safety requirements in response to the COVID-19 Pandemic.

We were able to complete the majority of our annual field work either in full or partially. The monitoring activities most impacted were our stream and Lake Ontario work which will show a gap in our data collection for fish spawning, stream invertebrate and electrofishing sampling, and Lake Ontario seine netting. We will continue to update our online StoryMap page available on our website with 2020 data and showcase the overall program in 2021.

Monitoring efforts



Weather station



OAK RIDGES WATER RESOURCES COALITION

Our Oak Ridges Moraine Groundwater Program (ORMGP) continues to improve our understanding of groundwater resources on and around the Oak Ridges Moraine, a regional glacial feature and source of drinking water for over 200,000 people in the Greater Toronto Area.

Across south-central Ontario, a coalition of 13 government agencies, and 20 local consulting companies, are working collaboratively to better understand and manage water resources. With the Oak Ridges Moraine as a central landscape feature, the program's database and interpretations stretch from the Credit and Nottawasaga Watersheds in the west to the Trent River in the east, and reach from the shores of Lake Ontario northwards to beyond Lake Simcoe and the Kawartha Lakes.

With rigorous data management as a core foundation, the program provides a multi-agency, collaborative approach to collecting, analyzing, and disseminating water resource knowledge as a basis for effective decision-making and stewardship of water resources in this part of Ontario. At CLOCA, like other agencies, we look to the program to provide the regional geological and hydrogeological context for our ongoing technical studies and management initiatives.

In 2020, work continued on the following deliverables related to database, geology, modelling, and the program website. Some highlights of 2020 include:

- During the month of July, a four-session, on-line training session was hosted for technical staff from government and consulting partner agencies; the sessions proved to be successful in that a minimum of 100 individuals attended each of the four sessions.
- The Municipality of Clarington agreed to direct remaining funds from the Ontario Hydro Transformer Station construction monitoring work to the ORMGP for longer-term monitoring.
- The ORMGP continued to assist with the regional comprehensive modelling studies in both Peel and Durham Regions. The models, which were delayed to some extent, are now to be completed in 2021. These models will prove to be important long-term tools used to better understand and manage water resources across these two regions.
- The ORMGP continued to update the website and with additional data and interpretive products (e.g., some 12,000 new wells have been added to the database and a new "potential Discharge Area Map" has been added).
- Work continued to finalize and circulate an updated Memorandum of Understanding (MOU) which will commit partner agencies to the program, and guide ORMGP procedures into the future.

For more information on the ORMGP, a full report will be accessible on the website in early February 2021 at www.oakridgeswater.ca

PROFESSIONAL GEOSCIENTISTS OF ONTARIO ANNUAL AWARD

The Professional Geoscientists of Ontario's (PGO's) Award of Merit is presented annually to an individual member who, during the course of their career, has made significant contributions to the geoscience profession. The PGO Award of Merit is presented annually at PGO's Annual General Meeting and in 2020 it was awarded to Steve Holysh, a hydrogeologist with CLOCA.

Since 2001, Steve has been the lead of the Oak Ridges Moraine Groundwater Program (ORMGP), a 13-agency partnership groundwater management strategy that stretches over the broad part of Southern Ontario. The program is recognized well beyond Ontario's borders as a leading-edge hydrogeological centre of excellence. It is focused on careful, comprehensive, and active data management and making this data, along with interpretations, knowledge, and insights, available to practitioners via the ORMGP web portal at www.oakridgeswater.ca

LAND ACQUISITION – ENNISKILLEN CONSERVATION AREA

Central Lake Ontario Conservation Authority worked closely with a family whose property bordered a portion of Enniskillen Conservation Area to prepare for and execute a donation of 6.2 acres of land to CLOCA in 2020.

These newly donated lands include headwater tributaries of the Bowmanville Creek; small wetland pockets and groundwater seeps within the heart of the Oak Ridges Moraine, and will be incorporated into the long-term management of Enniskillen Conservation Area.



TECHNICAL GUIDELINES FOR STORMWATER MANAGEMENT

Central Lake Ontario Conservation Authority (CLOCA) has developed significant expertise in the design and application of traditional and more sustainable technologies for stormwater management, as part of their mandate to guide responsible environmental planning. Applying this knowledge supports a more integrated approach to new development, which is desirable and vital to reducing the environmental, social, and economic impacts of urbanization and climate change.

In 2020 we completed the *Technical Guidelines for Stormwater Management Submissions* to provide practitioners within the CLOCA watershed, with stormwater management criteria and submission requirements in support of a more sustainable approach to stormwater management practices in new development. It is also designed to assist with streamlining the submission and review process.

CORBETT CREEK FLOOD PLAIN MAPPING UPDATE

Corbett Creek Floodplain Mapping has been completed in association with the the *Town of Whitby's Corbett Creek Master Drainage Plan Update Study (TMIG 2020)*. Central Lake Ontario Conservation Authority provided LiDAR topographic base mapping for the project, and provided background Geographic Information System analysis, and hydrologic and hydraulic modelling. The project was funded by the Town of Whitby and National Disaster Mitigation Program grant.

The floodplain mapping will support the administration of *Ontario Regulation 42/06*, support plan review activities, assist with the Flood Forecasting and Warning Program, and replace the 2005 study and floodplain mapping with more accurate information and improved visual presentation for users.

Bioswale
(in parking lot)

GOODMAN AND OSHAWA CREEKS TWO-ZONE FLOOD MANAGEMENT STUDY

The largest flood damage centre in CLOCA is located in central Oshawa, and is within the floodplain of the Oshawa and Goodman Creeks. An update to the *Two-Zone Flood Management Study* was completed under a partnership of the City of Oshawa and CLOCA, and with the consulting engineering expertise of Greck Associates. The Study defines the flood fringe and floodway through the damage centre, and recommends management approaches to limit flood risk, but allow for continued urban vitality for the developed community.

The report and mapping will be provided to the CLOCA Board of Directors for endorsement early in 2021.



LAKE ONTARIO SHORELINE HAZARD MANAGEMENT PLAN

Central Lake Ontario Conservation Authority in partnership with the Ganaraska and Lower Trent Conservation Authorities, commissioned a coastal engineering study to update shoreline management direction for their respective reaches of the Lake Ontario shoreline. The consulting firm of Zuzek Inc. was retained in 2018 and completed a final draft report and hazard mapping in December 2020. The Report provides shoreline inventories of existing structures; reviews of shoreline coastal processes; calculated and mapped flood and erosion limits for the study area; and approaches for managing coastal damage centres.

The report and mapping will be provided to the CLOCA Board of Directors for endorsement early in 2021.





COLLABORATE AND PARTNER

DEVELOPING SCIENTIFIC RESEARCH THROUGH COLLABORATION

We continue to maintain our reputation as the respected and trusted source of environmental knowledge within the watershed. The development of applicable local scientific information allows for more informed land-use management and helps ensure a healthy and resilient ecosystem.

In 2020 we assessed five years of data since the 2014 Lynde Creek Fish Spill Event with the Ministry of Natural Resources and Forestry to complete a report outlining the impact and recovery of Lynde Creek. The report will be published by the Department of Fisheries and Oceans and demonstrates the resilience of Lynde Creek in its ability to recover both its fish abundance and richness. Unfortunately, a number of rare species within this creek system have not been detected, supporting the theory that they are more vulnerable to a catastrophic event as there are not enough individuals to repopulate the system which was demonstrated in this five-year study.

Work continued on the McLaughlin Bay Coastal Wetland Restoration Project in partnership with Ontario Tech University for the collection of data on zooplankton conditions in this Provincially Significant Wetland. The report outlines the type of zooplankton species and what this means for current conditions and potential restoration options. One concerning finding was the number of Blue-Green

Algae present, which is indicative of degraded systems with high nutrient levels. It can be dangerous for people and pets and is another good reason for moving forward with restoration in this area. This report highlights the importance of connectivity with Lake Ontario to restore conditions within McLaughlin Bay. This research work also provides important insight for future restoration planning in CLOCA's other coastal wetlands.





RBC SMART WATERSHEDS

Central Lake Ontario Conservation Authority initiated year one of a three-year project in partnership with the RBC Tech for Nature program for the *Smart Watersheds Project*.

The *Smart Watersheds Project* has created a technology ecosystem, enhanced environmental monitoring activities with more frequent data collection, analysis, and advanced data management. In addition to the technology, the *Smart Watersheds Project* will engage community volunteers, elementary and high school students in using this new technology to better understand their local watershed. Participants will receive training and access to data collection technology to add to CLOCA's *Smart Watersheds Project* database. This additional support will help create an engaged constituency that understands and contributes to improving watershed knowledge.

We are responsible for capturing information on a variety of environmental health indicators, across land and water resources; further analysis of this data informs our understanding of overall ecosystem health and watershed function and identifies areas of concern including poor water quality or flood-vulnerable communities. This ability to collect additional data with this state of the art monitoring equipment, will position us to better respond to issues and opportunities, improve modeling and prediction efforts now and in the future as wetter, wilder, and warmer weather is anticipated with climate change. This data will help contribute to climate change adaptation and mitigation efforts, provide effective flood warning and forecasting information to the community, and ensure CLOCA's *Integrated Watershed Monitoring Program* guides the implementation of our watershed management plans.

To-date, CLOCA has procured and installed a variety of real-time and hands-on monitoring equipment for deployment in local watershed schools and libraries. The combination of this data will help us better understand weather, water quality, and quantity in local creek systems. Some of the data is transmitted wirelessly, as often as every 60 seconds. Live-streaming cameras have provided us and our partners with imagery of two creek locations, 24 hours a day, seven days a week. Some monitoring efforts will require hands-on efforts, including water quality sampling (performed by volunteers of the *Smart Watersheds Project*).

All the data input automatically or manually will be entered into an accessible *Smart Watersheds Project Portal*, providing CLOCA staff, participating students and community volunteers, partners, and stakeholders with an interactive database to support inquiries on a watershed scale. Users will be able to utilize this data to facilitate visualization of future scenarios, create mapping and allow manipulation to answer specific inquiries, as well as help with more accurate modeling, statistical reporting, and analysis.



COMMUNICATE, EDUCATE AND INSPIRE

EDUCATION PROGRAM 'PIVOT'

At the beginning of the COVID-19 lock-down, Education staff developed a working document called *Outdoor Environmental Education Pandemic Delivery Model*, to address the limitations of engaging students in the 2019/2020 and 2020/2021 school year. What we have learned during this pandemic, is that it has become even more important for our students, teachers, and families to connect with the natural environment for physical and mental health benefits. To support that finding, we developed some new content for our website and created a database of teachers we have delivered programs to in the past. In that regard we developed the following new products and programs:

- **Kids Conservation page**, complete with activities, stories and science for kids to assist parents and teachers with home and online schooling resources.
- **In Your Watershed Online Home-School and Classroom Resources** – We have been creating a series of online resources to support environmental learning curriculum requirements for Grades 1 through 8. These are sent to our teacher contacts full of program ideas, videos of us in our Conservation Areas, and resources for lessons and projects for students, either in the classroom or at home.
- **Take it Outside in the School Yard** – We bring equipment, lesson plans, and health and safety guidelines for the program.
- **Take it Outside in the Conservation Area** – *Signs of the Season* Family Field Trip program is a half-day hike program at Enniskillen Conservation Area, Tuesdays to Fridays, January to June.

Uptake in 2020 was very modest, but efforts to connect to our four school boards and their teachers with our online resources will continue in 2021.





OPERATE RESPONSIBLY

STRATEGIC PLAN

Following a comprehensive consultation process, in 2016 CLOCA approved a new *Strategic Plan 2016-2020*, establishing a new vision and mission for CLOCA. The *Strategic Plan 2016-2020* served CLOCA well and guided our commitment to watershed management action. At the January 21, 2020 CLOCA Board meeting, the Board was informed that the process of reviewing and updating the *Strategic Plan 2016-2020* will begin with the objective of presenting an updated *Strategic Plan 2021-2025* for Board approval in late 2020. Since that time, staff conducted a variety of consultation sessions through online meetings and surveys to solicit insight and feedback. Through our review and feedback received, we found that the *Strategic Plan 2016-2020* vision, mission and strategic goals and objectives remain largely relevant. As a result, the updated *Strategic Plan* is more of a 'refresh' and builds on the existing *Strategic Plan*. At their December 2020 meeting, the CLOCA Board of Directors approved an updated *Strategic Plan*.

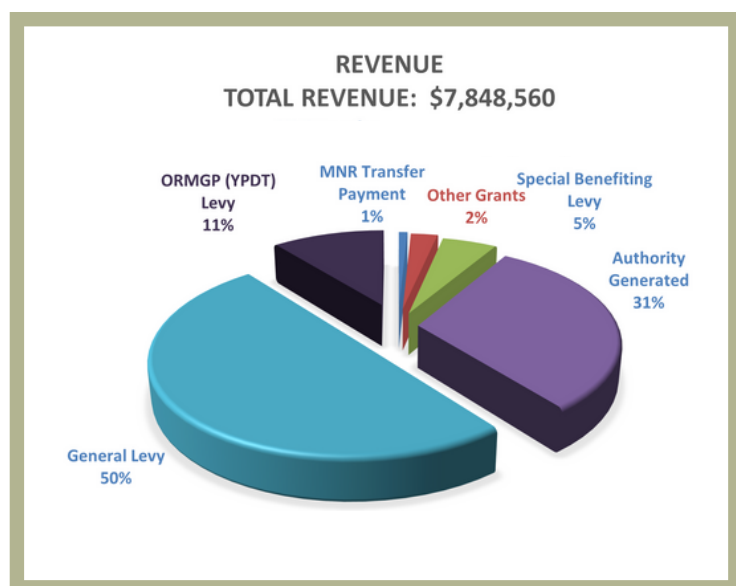
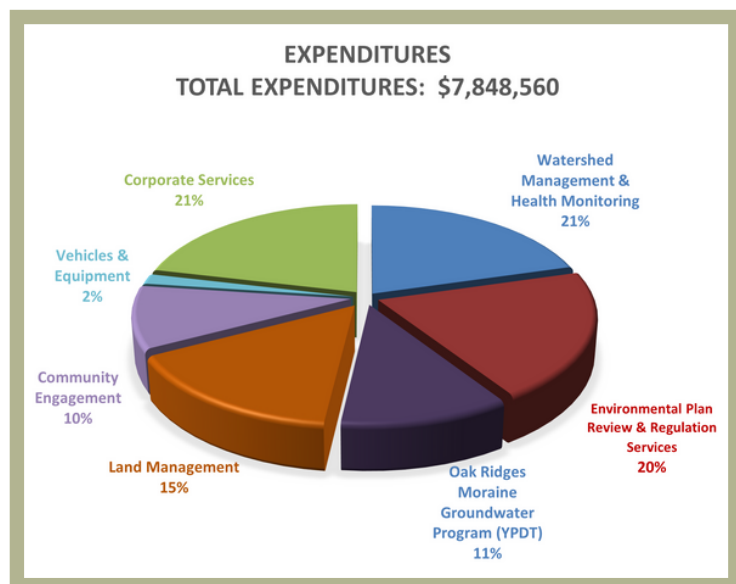
The updated *Strategic Plan 2021-2025* includes the following goals to better align with our core corporate programs, services, and legislative direction:

1. **Conserve, Restore and Enhance Natural Resources Through Integrated Watershed Management**
2. **Support Healthy Communities and the Protection of People and Property from Flooding and Erosion**
3. **Remain Dedicated to the Protection, Management, and Safety of Conservation Areas**
4. **Create a More Knowledgeable and Connected Watershed Community through Engagement and Education**
5. **Demonstrate Business Excellence through Effective Customer Service, Engaged Employees, and Innovation**

The updated *Strategic Plan 2021-2025* provides a broad framework with less detail on individual tasks or projects when compared to the previous *Strategic Plan 2016-2020*. This approach will allow us to be flexible and adaptable to address emerging issues through the development of annual work plans, supporting the broader strategic goals.

BUDGET

The approved 2020 budget reflects an allocation of resources to support CLOCA's planned programs and services. The budget allowed us to continue our efforts in support of our mission to advance watershed health through engagement, science and conservation.



BOARD OF DIRECTORS

TOWN OF AJAX

Councillor Sterling Lee

CITY OF PICKERING

Councillor David Pickles

TOWN OF WHITBY

Mayor Don Mitchell

Councillor Chris Leahy

Councillor Steve Yamada

Councillor Rhonda Mulcahy

MUNICIPALITY OF CLARINGTON

Councillor Ron Hooper (Vice Chair)

Councillor Corinna Traill

Councillor Janice Jones

TOWNSHIP OF SCUGOG

Councillor Ian McDougall

TOWNSHIP OF UXBRIDGE

Mayor Dave Barton

CITY OF OSHAWA

Councillor Bob Chapman (Chair)

Councillor John Neal

Councillor Tito Dante Marimpietri

Councillor Brian Nicholson



Central Lake Ontario Conservation Authority's watersheds/jurisdiction

notes...

[illegible]

Healthy watersheds for today and tomorrow.

