

Memorandum

Date: Tuesday, April 30, 2019

To: Members of Council

From: Katelyn McFadyen, Manager, Energy & Environment,

Subject: Comments on the Environmental Bill Registry 013-5018 to Modernize the Conservation Authorities Act

The Province of Ontario recently released an Environmental Bill of Rights posting 013-5018, titled 'Modernizing conservation authority operations-Conservation Authorities Act'. The purpose of this Memo is to provide a summary of the key proposed changes and outline comments that the Town of Caledon will submit prior to the closing of the EBR on May 20th.

Modernizing Conservation Authority Operations-Conservation Authorities Act

The *Conservation Authorities Act* was introduced in 1946 to enable programs and services to further the conservation, restoration, development and management of natural resources in watersheds in Ontario. Under the Act, 36 Conservation Authorities were created at the request of municipalities and are governed by municipally appointed representatives. As extreme weather, caused by climate change becomes more predominant, the role that Conservation Authorities play in our communities is becoming increasingly important. In response, the Province is seeking to modernize the Conservation Authorities Act, specifically considering the following:

- Clearly define that the core mandatory programs and services provided by conservation authorities to be natural hazard protection and management, conservation and management of conservation authority lands, drinking water source protection and protection of the Lake Simcoe watershed;
- Increase transparency in how conservation authorities levy municipalities for mandatory and non-mandatory programs and services. This will be done by aligning with modern transparency standards and reviewing levy's for non-core programs after a certain period and establishing a process for entering agreements with municipalities for the delivery of these non-mandatory programs;
- Enable the Minister of Environment, Conservation and Parks to appoint an investigator to audit and report on a Conservation Authority, and;
- Clarify the duty of conservation authority board members to act in the best interest of a conservation authority, like not-for profit organizations.

Previous Updates to the Conservation Authorities Act

In 2017, the Ontario government updated the *Conservation Authority Act*. Through updates to legislation, regulations, policies and programs, the *Conservation Authority Act* was proposed to be modernized to address the following:



- strengthen oversight and accountability;
- increase clarity and consistency in Conservation Authority programs and services;
- increase clarity and consistency in regulatory requirements;
- improve collaboration and engagement; and
- modernize funding mechanisms.

Implementation of the proposed changes were planned to be phased-in over four-years to provide ministry, conservation authorities, participating municipalities, Indigenous communities and other interested parties the opportunity to participate, and to allow resources needed to operationalize changes.

Caledon’s Climate Change Plan Update

The Federal Government in their report “Canada’s Changing Climate” recently revealed that Canada is warming at twice the rate of the rest of the world, with many of the impacts already considered irreversible. To help understand the implications of a changing climate, the Town recently completed a Climate Change Risk and Vulnerability Assessment that served the purpose to (1) understand the future weather trends in Caledon to 2090 and (2) Identify the impacts related to the forecasted weather changes to natural, infrastructure, and social and economic systems. A summary of the climate change projections are outlined in Table 1 below:

Climate Indicators	Climate Change Projections
Temperature	<ul style="list-style-type: none"> • Warmer in every season • More extreme hot days • Fewer days below freezing • Average annual baseline temperature increases
Precipitation	<ul style="list-style-type: none"> • Increase in annual precipitation • Winter and spring getting wetter (snow & rain) • Precipitation events getting more frequent & intense • Decrease in summer precipitation
Freeze/Thaw Cycles	<ul style="list-style-type: none"> • Fewer freeze/thaw cycles, primarily in spring / fall
Growing Season Length	<ul style="list-style-type: none"> • Growing season beginning earlier, ending later
Average Wind	<ul style="list-style-type: none"> • Difficulty forecasting major trends
Freezing Rain	<ul style="list-style-type: none"> • Difficulty forecasting major trends

After extensive consultation with stakeholders including Town staff and Conservation Authority partners, a series of impacts resulting from the climate change projections were identified and evaluated. Examples of key impacts identified include:

- Drier summer conditions that lead to drier soils, wetlands and waterbodies negatively impacting agriculture, biodiversity and leading to the spread of invasive species;
- Increased precipitation leading to more flooding, creating emergency service challenges, damaging infrastructure, eroding natural areas and leading to the run off of important soil nutrients required for agriculture practices;
- Increase in precipitation that lead to more salting of roads during the winter season, and runoff from agricultural fields (during shoulder seasons) that may result in reduced water quality.

A full list of the impacts identified through our risk and vulnerability assessment, specifically related to the work completed by Conservation Authorities is available in Schedule A. The outcome of this

assessment is a significant pillar in the Town's Climate Change Action Plan Update. This Plan will contain actions to reduce climate change causing greenhouse gas emissions, and actions to adapt to the forecasted changes in climate to build a resilient Caledon.

Importance of Partnerships with Conservation Authorities on Climate Change Action

The Town has developed strong partnerships with Credit Valley Conservation (CVC) and Toronto and Region Conservation Authority (TRCA) to implement programs, projects and studies that protect, enhance and restore natural systems within the Town of Caledon. As the Town updates its Climate Change Action Plan, these partnerships will be crucial in affording the Town the capacity to address the wide ranging and complex systemic changes already taking place as a direct result of a changing climate. In addition, the Town currently has a Protocol / Memorandum of Understanding with the Conservation Authorities for them to act as our technical advisor regarding planning applications, with respect to the delineation and protection of natural environmental features and their functions. Conservation Authorities have the expertise and technical staff, including ecologists and biologists to provide this role for municipalities. This in turn enables the Town to leverage the expertise within Conservation Authorities to support climate change action and provide technical advice on planning applications without having to duplicate these efforts and resources within the municipality. The Town agrees with the actions outlined in the Provincial Environment Plan that recognizes the strength in relationships with Conservation Authorities for the protection and restoration of wetlands, natural ecosystems and resources, protection of people from flooding, and for the management of road salt, increasingly used in response to extreme weather. As the Province undertakes a review of the *Conservation Authority Act*, the Town would like to highlight the importance of the unique expertise and capacity within Conservation Authorities to deliver wide ranging actions to address and respond to the challenges of a changing climate.

Fundamental to their role and expertise is the ability of Conservation Authorities' to take a watershed perspective, providing holistic guidance on resource management. To date, CVC and TRCA has worked in partnership with the Town of Caledon to successfully develop and implemented mitigative and adaptive strategies that would not have been possible otherwise. Through continued efforts programs offered by CVC and TRCA have contributed to improving and building the Town of Caledon's resiliency in the following ways:

- Monitoring water level conditions in real-time and provide flood forecasting a warning services;
- Gather and use knowledge in support of informed decision making on the impacts of climate change on biodiversity, natural features and functions;
- Build partnerships and leverage capacity to ensure a coordinated agency response to climate change;
- Provide the capacity necessary for residents and the private sector to enhance climate change literacy to foster action that is supported through tailored programs and interventions;
- Incorporate current science on climate change into Natural Heritage Systems planning at multiple scales within CVC and TRCA including watershed, subwatershed, and site scale;
- Measure, monitor and report on indicators of climate change in our natural areas, apply adaptive environmental management, and enhance protection and stewardship efforts;
- Identify and enhance protection efforts for species or communities most at risk from climate change;
- Undertake innovative research leading to the development of processes and tools to evaluate flood risk mitigation investments and approaches;
- Conserve genetic diversity by protecting a variety of habitats and species;

- Increase wetland protection and restoration efforts and the quality and quantity of streamside plantings to moderate flooding events;
- Enhance urban natural spaces and plant more neighbourhood trees to moderate the effect of extreme heat days in urban settlement areas;

Further details on the programs offered by TRCA and CVC and their benefit to the Town of Caledon is provided in Schedule B: Inventory of Conservation Authority Partner Climate Change Related Projects and Programs in Caledon.

In addition to these, the Region of Peel, City of Brampton, City of Mississauga, the Town of Caledon, Credit Valley Conservation, and the Toronto and Region Conservation Authority have formed a Peel Climate Change Partnership. The Partnership was formed in response to ‘the urgent need to respond to climate change at the locale level’ guided by senior representatives from each of the partnering organizations. The Partnership focuses on three main strategies including (1) the transition to low carbon communities (2) addressing temperature increases using green infrastructure and (3) develop comprehensive and coordinated approaches to flood mitigation. The Partnerships mission is to work collaboratively with municipal partners, conservation authorities, residents and businesses to address climate change at the local level. CVC and TRCA have been important members of this collaborative, providing science and technical expertise, and assisting to execute key actions identified in these strategies.

Overall, through partnerships with the Conservation Authorities, the Town is able to enhance its capacity to address the significant challenges posed by climate change and provide technical advice on planning applications without the duplication of resources at the municipal level. The Town encourages the Province to consider the value of this expertise as changes are considered in the modernization of the *Conservation Authorities Act*.

Attachments

Schedule A: Risk and Vulnerability Assessment Results Related to Work Completed by Conservation Authorities

Schedule B: Inventory of Conservation Authority Partner Climate Change Related Projects and Programs in Caledon

Schedule A: Risk and Vulnerability Assessment Results Related to Work Completed by Conservation Authorities

Subset of Climate Change Impacts Identified Related to Conservation Authority Expertise and Programs		
Impacts on Agriculture, Vegetation and Biodiversity	Flooding Impacts	Water Quality Impacts
<p>Warmer temperatures leading to:</p> <ul style="list-style-type: none"> • Dryness of soil affecting crops ability to gain nutrients for survival, leading to higher rates of crop mortality and failure; • Increased and potentially significant pressures on overall water supply and availability jeopardizing water availability for farming practices; • Drier summers, potentially leading to the loss of wetlands, waterbodies and sensitive species (i.e. lower summer water flows and decrease oxygen levels threatening survival of fish); • More evaporation, lowering the water table and reducing infiltration to recharge shallow aquifers (e.g. impacting groundwater and well recharge); • Higher rates of disease and spread of invasive species threatening the health of native plants (i.e. emerald ash borer) and humans (west nile, lyme disease); • Milder springs resulting in more algae blooms; <p>Increased precipitation leading to:</p> <ul style="list-style-type: none"> • Increase in erosion of natural areas causing damage to parks, trails, farm fields, riverbanks, hillsides and habitats; • Water logging of fields (especially lower lying areas), washing out of important soil nutrients, leading to delayed farming activities and lowering crop yields <p>Changing temperature and precipitation patterns leading to:</p> <ul style="list-style-type: none"> • Shifting ecological community's flora and fauna, leading to potential loss of native biodiversity. 	<p>Increase in precipitation and high intensity events leading to:</p> <ul style="list-style-type: none"> • Hazardous road conditions, closed businesses, blocked access for emergency vehicles, property damage and need for evacuation; • Increased stress on Town infrastructure including roads, bridges, facilities, stormsewer systems and culverts; • Increased runoff in urban areas where recharge areas have been paved over; • Flooding and water quality issues downstream of Caledon; • Increased pressure on basement sump pumps and shallow works (pipes) causing increased lot-level flood risk; • Increased risk of damage to and/or flooding of septic systems, resulting in localized contamination of wells and natural features. 	<p>Increase in precipitation leading to:</p> <ul style="list-style-type: none"> • Increased runoff from farm fields leading to more nitrates and fertilizers in groundwater sources; • Increased road salting (reaching levels close to an ocean) leading to contamination of agricultural land, drinking water, rivers and streams, and native vegetation and habitat. <p>Warmer temperatures leading to:</p> <ul style="list-style-type: none"> • Increase in algae blooms negatively impacting recreation and drinking water and Contamination of source water, potentially causing stress on water treatment processes; • Decreased water levels and stream flows, leading to reduced water quality and potential for contamination of streams and rivers.

Schedule B: Inventory of Conservation Authority Partner Climate Change Related Projects and Programs in Caledon

TRCA Programs and Projects

Description	Project Metrics	Caledon Climate Change Connection
<p>Community Based Restoration Events and Services: In collaboration with local municipalities, TRCA works throughout its jurisdiction to engage residents, corporate and community groups, and students in Community-Based Restoration Events, Watershed Clean-Ups, and citizen science activities. These events include native tree and shrub plantings, pollinator habitat implementation and maintenance, invasive vegetation control, clean-up efforts to remove waste and litter, and monitoring and maintenance of newly restored areas through TRCA’s citizen science Young Tree and Shrub Monitoring and Maintenance Program (YTMP).</p>	<p>2018 projects undertaken in Caledon include:</p> <ul style="list-style-type: none"> - 10 events that involved local schools, residents and community organization groups - 2.5 ha of wetland restoration - 5 ha of forest restoration - 2 ha of riparian restoration - 200 m of stream restoration - 0.5 ha of enhancement plantings - 103,514 total trees and shrubs planted - 1 in-stream barrier removed 	<p>Natural habitats and ecosystems in Caledon are challenged by an increase in temperature and changing precipitation patterns. This work leads to the improvement of water quality, controlling invasive vegetation, protecting and providing habitat for wildlife and enhancing recreational areas.</p>
<p>Forest Management on Public and Private Lands TRCA is actively involved in forest management projects by helping private landowners in Caledon restore and improve their properties through tree planting. This is done by providing free technical advice, as well as cost-effective tree and shrub planting services, ranging from the provision of appropriate native vegetation to developing a planting plan and installing the plant materials on site. TRCA staff also help eligible property owners prepare and implement Forest Management and Stewardship Plans for their forested properties to access the Managed Forest Tax Incentive Program (MFTIP).</p>	<p>2018 projects completed in Caledon include:</p> <ul style="list-style-type: none"> - Removal of 1,650 Emerald Ash Borer hazard trees and injected 104 high value ash trees to for protection; - Addressed 234 non-ash hazard trees - Managed 115.5 ha of forest, including both TRCA properties and private land programs management for biodiversity and for the Managed Forest Tax Incentive Program (MFTIP) 	<p>Invasive species and the spread of pests are likely to increase because of forecasted changes in temperature and precipitation. These programs help ensure diversity in tree planting programs and the management of pests in Caledon to protect and enhance natural systems.</p>
<p>Peel Rural Water Quality Program TRCA works closely with Credit Valley Conservation to develop and deliver the Peel Rural Water Quality Program, which provides technical assistance and funding incentives for agricultural landowners in the Region of Peel to voluntarily implement agricultural best management practices on their land. TRCA staff undertake outreach to eligible property to promote the program and provide technical assistance and support in applying for funding for a variety of initiative including planting cover</p>	<p>Between 2004 and 2018, 91 projects were. Project outcomes include 7,827 meters of livestock restriction fencing installed, 14,009 m³ of manure safely stored within manure storage facilities, and +/-34 hectares of land protected or restored. In 2018, the program also engaged approximately 250 people through attending and hosting various agriculture-</p>	<p>Water quality is identified to worsen resulting from drier summers and increases in precipitation events leading to agricultural and roadway runoff into river systems. Programs like this help to improve the adaptive capacity of Caledon’s water systems by addressing and</p>

<p>crops, livestock fencing from environmentally sensitive features, natural area enhancement, nutrient management, private well upgrades, and tree planting.</p>	<p>related events.</p>	<p>improving water quality.</p>
<p>Erosion Control: TRCA actively monitors and manages erosion control structures. For unprotected sites, TRCA monitors erosion activity and prioritizes sites for assessment and remedial intervention. TRCA also conducts field inspections based on inquiries from the public and stakeholders regarding erosion control issues.</p>	<ul style="list-style-type: none"> - Management of 10 erosion control structures within Caledon - Completed remedial projects include: McFall Dam and Fishway Channel Bank Maintenance (2015), Humber Station Road interim stabilization (2016). - Future remedial projects include Bolton Sanitary Infrastructure Protection Project (2020), Humber Valley Minor Maintenance Works (2020) and four riverbank and slope stabilization projects, funded through the Disaster Mitigation and Adaptation Fund from 2019-2028. 	<p>Erosion is expected to increase because due to a rise in annual precipitation and high intensity short duration events. Erosion control projects will become increasingly important to maintain and stabilize riverine banks, wetlands and agricultural fields, and protect infrastructure within high risk areas.</p>
<p>Environmental Monitoring TRCA monitors the health and condition of area watersheds, including the Humber River and Etobicoke Creek watersheds within the Town of Caledon, through a Regional Watershed Monitoring Program (RWMP). This includes 13 aquatic habitat and community sites, 36 terrestrial fixed plots, 3 water quality stations, 4 groundwater wells and 6 West Nile virus indicator sites. Data from this monitoring supports watershed planning and development permit review.</p>	<p>Since 2013, TRCA has been working directly with the Town on the implementation of monitoring activities related to the Mayfield West Phase 1 Comprehensive Adaptive Management Plan (CAMP). Through this work, data on aquatic and terrestrial habitat and communities, water quality, hydrology and ground water have been collected to assess the development's effects on downstream watershed conditions. Information collected at this site, along with other RWMP data, has been used to inform future phases of this development</p>	<p>Due to the forecasted increases in precipitation that lead to flooding; embedding strong stormwater management strategies in how Caledon develops is becoming increasingly important. To achieve this, programs that actively monitor water quality and quantity to manage the protection of natural systems and inform development considerations will become increasingly important.</p>
<p>West Bolton SNAP TRCA is working with the Town of Caledon and the Region of Peel to bring TRCA's successful neighbourhood-scale Sustainable Neighbourhood Action Program (SNAP) to the West Bolton community. The West Bolton SNAP has worked with residents, community groups, the Region and the Municipality to identify and address neighbourhood needs and interests, as well as watershed and regional objectives, including: lot-level stormwater management; home energy and water conservation; regeneration of local streams;</p>	<p>TRCA will be seeking Council approval of the West Bolton SNAP Action Plan in April and is currently scoping out a multi-partner revitalization project at a Peel Living building, as well as a refined Residential Retrofit Program targeting homeowner uptake in stormwater management, green infrastructure and energy retrofits.</p>	<p>Resident engagement on the importance of issues such as climate change mitigation and adaptation are important to ensure awareness and lot level action to address climate risk.</p>

community cohesion; health and well-being, improvement of urban forest, natural areas and parks; and active transportation, such as walking and cycling.		
<p>Partners in Project Green Partners in Project Green (PPG) supports and facilitates environmental best practices and economic efficiencies for member municipalities, businesses and organizations. PPG has led a variety of initiatives to support the Town of Caledon, the Region of Peel and Caledon businesses.</p>	<ul style="list-style-type: none"> - Held a business forum in partnership with the Caledon Economic Development Office in early 2019 - Management of an Energy Leaders Consortium, with Caledon as one of 9 participating municipalities - As part of the Peel Climate Change Partnership, leading the development of a low emission vehicle strategy 	Engagement of businesses and enhancing capacity to understand their role in climate mitigation and adaptation is central to the achievement of community climate action goals and targets.
<p>Ontario Climate Consortium The Ontario Climate Consortium (OCC) is supporting the Town with climate change mitigation and adaptation actions. Drawing on the expertise of its collaborators and partners, as well as its own in-house team, OCC develops projects that connect public and private sector end-users with researchers capable of delivering results on time and on budget. OCC's team also has the know-how to access sources of funding when additional resources are needed to help push a project across the finish line.</p>	<ul style="list-style-type: none"> - OCC led the development of a climate vulnerability assessment of Peel Region's agricultural sector, which focused on the Town of Caledon. - OCC is facilitating the development of a GIS-based renewable energy resource assessment in the Town of Caledon, an innovative participatory mapping approach to engage key stakeholders from across the region to provide input on preferred locations for project development. 	The ability to access innovative resources from third party agencies such as academic institutions to undertake climate action is necessary to achieve climate action goals and targets.

CVC Programs and Projects

Program Description	Projects in Caledon	Caledon Climate Change Connection
<p>Real-time Monitoring CVC uses real-time stream flow, water level and precipitation information to determine potential flood conditions and to issue warnings for the Credit River Watershed. CVC works in partnership with the TRCA to maintain a flood monitoring gauge network that spans Peel, continually monitoring in-stream water levels at dams and river stations.</p>	<p>Within Caledon, CVC operates a total of 12 Real-time monitoring stations:</p> <ul style="list-style-type: none"> - 1 Real-time Climate Station - 3 Real-time Rainfall Stations - 5 Real-time Streamflow Stations - 3 Real-time Water Quality Stations 	Increases in precipitation quantity and intensity are likely to cause increased flooding and stormwater management issues. The ability to monitor and predict these events will be crucial for adaptation planning and emergency management.
Flood Line Mapping Updates	CVC is updating the Flood Line Mapping	Increases in precipitation quantity

<p>Knowing the extent of the flood plain is an important tool for land use planning and emergency management. This knowledge helps guide sensitive land use away from high-risk areas, and, for areas where historical development has already occurred, helps to identify ways to mitigate flood risk, all with the aim of better protecting people, property, and the resilience of our urban areas.</p>	<p>of two subwatersheds in the Caledon area, these include:</p> <ul style="list-style-type: none"> - Caledon Creek Subwatershed - East Credit River Subwatershed 	<p>and intensity combined with development, increases flood risk. Flood Line mapping is an important tool in climate change adaptation for the purposes of emergency management and development considerations.</p>
<p>Conservation Area and Land Acquisition In the heart of Caledon, 5 minutes south of Alton, along the upper stretches of the Credit River, there is a 44-acre property that if successfully acquired would allow access to Charles Sauriol Conservation Area and would provide a means to protecting a critical brook trout habitat. Credit Valley Conservation is actively working with partners to raise funds to secure the acquisition of the property.</p>	<p>Along with Terra Cotta, Belfountain, and Ken Whillans Conservation Area, and the Cheltenham Badlands, the opening of Charles Sauriol Conservation Area would be the 5th property in Caledon within the Credit River Watershed that actively engages residents in outdoor experiences and educational opportunities.</p>	<p>Sensitive species such as the Brook Trout have been specifically identified as at risk due to climate change. Programs to protect sensitive species, such as the Brooke Trout will become increasingly important in ensuring biodiversity and natural system resiliency.</p>
<p>Environmental Monitoring CVC monitors climate, groundwater, forest, wetlands and stream systems throughout the watershed to provide a full picture of the ecosystem health. The results are used to establish thresholds, measure change, guide management practices and inform long range planning for the watershed and municipal partners.</p>	<p>The following monitoring activities have been undertaken on various timescales:</p> <ul style="list-style-type: none"> - 3 Real-time Water Quality Stations - 12 Forest Stations that are used to monitor plants, birds, salamanders, soil conditions and tree health - 4 Groundwater Stations used to monitor groundwater levels and chemistry - 29 Stream Stations used to monitor fish, and water temperature, chemistry and quantity, stream stability, and vegetation - 9 Wetland Stations used to monitor plants, frogs and vegetation health 	<p>Understanding changes in natural systems overtime will help inform adaptive management strategies and interventions necessary to ensure long-term health under changing climate conditions.</p>
<p>Rural Landowner Program Hundreds of private landowners have partnered with CVC to carry out stewardship projects on their lands. CVC works collaboratively with landowners to determine the environmental improvement opportunities that exist on a property based on the landowner's needs and interests. Examples of projects include: tree planting projects, pond and dam mitigation, wetland and stream improvements,</p>	<p>Within the Credit River Watershed there are:</p> <ul style="list-style-type: none"> - Hosted 15 educational events engaging 238 landowners - Implemented 29 educational communications campaigns - Implemented targeted outreach campaigns to promote reforestation 	<p>Enhancing capacity within landowners to protect, conserve and enhance natural systems within their properties are crucial to help manage the long-term health of wetlands, streams and habitat, likely to face stress due to a changing climate conditions.</p>

<p>wildlife habitat enhancements, well decommissions and upgrades, buffer and windbreak plantings and agri-environmental projects. The projects are completed through one of three CVC programs:</p> <ol style="list-style-type: none"> 1. Countryside Stewardship Program: educate and influence behaviours to promote private land stewardship and the implementation of priority actions for improved watershed health. 2. Landowner Action Fund: provide technical support and cost-share funding to <u>rural non-farm landowners</u> for implementation of private land stewardship projects that improve water quality, enhance habitat and biodiversity and build resilience to climate change. 3. Peel Rural Water Quality Program: provide technical advise and cost-share funding to <u>farmers</u> for implementation of agri-environmental projects that improve water quality, enhance habitat and biodiversity, and build resilience to climate change. 	<p>and other actions that build resilience to climate change</p> <ul style="list-style-type: none"> - Enrolled 41 participants and 388 acres in Bird Friendly Certified Hay program - Maintained 4 active partnerships; attended 3 partnership meetings - Provided 75 technical consultations to rural non-farm landowners - Contributed \$36,972 to support completion of 19 private land stewardship projects - Provided 42 technical consultations to farmers - Implemented 3 educational communications campaigns - Contributed \$12,287 to support completion of 3 agri-environmental projects - Committed \$34,445 toward 7 future agri-environmental projects - 7.2 hectares enhanced and restored - 29,595 trees and shrubs planted - 25 invasive species removal projects - 620 Emerald Ash Borer Trees removed 	
<p>Source Water Protection In the Credit Valley Source Protection Area (CVSPA) we partner with municipalities, neighbouring conservation authorities, businesses and communities to analyze and develop plans that manage risks from drinking water issues in vulnerable areas of our watershed. The Credit Valley – Toronto & Region – Central Lake Ontario (CTC) Source Protection Plan is progressing well and is on target to full implementation.</p>	<p>In the Credit Valley Source Protection Area, implementation includes:</p> <ul style="list-style-type: none"> - 44 of 77 existing significant drinking water threats have been managed - 14 existing significant drinking water threats have been prohibited - Municipalities have implemented land use planning and education & outreach policies to address significant drinking water threats. 	<p>Source Water protection has been an identified risk under climate change scenarios due to water quality challenges resulting from a rise in temperature (resulting in algae growth). Programs to monitor and address water quality issues are important for ensuring the long-term health of vulnerable areas.</p>
<p>Risk and Return on Investment Tool: CVC is developing a</p>	<p>In partnership with the Town of Caledon,</p>	<p>Due to forecasted increases in</p>

<p>tool that identifies optimal flood management options to enhance flood resiliency considering climate change. This tool will support municipalities and conversation authorities in making evidence based, cost effective decisions to reduce flood risk.</p>	<p>CVC was successful in a large grant from the National Disaster Mitigation Program to run the risk tool within the settlement areas of Bolton and Alton. Both areas have recently been faced with flooding and drainage challenges.</p>	<p>precipitation quantity and intensity, flooding is expected to increase under climate change scenarios. Participating in innovative approaches to understand and plan for flood mitigation investments will significantly contribute to the Town's ability to reduce risk.</p>
<p>Risk Management Framework for Stormwater: CVC in partnership with the Standards Council of Canada and Mantle 314, to determine whether a stormwater quality management standard would help to address gaps, barriers and risks associated with stormwater. Based on the findings, three key challenges were revealed including lack of guidance on how to incorporate stormwater management into design standards, inconsistent levels of service across municipal jurisdictions, and lack of funding to maintain, inspect stormwater systems.</p>	<p>In Partnership with the Town of Caledon and Mantle 314, CVC worked on the development of a stormwater quality management standard to address process gaps and barriers to address risks containing 20 key components.</p>	<p>Developing processes, for the management of stormwater to ensure considerations are embedded throughout development process for water quality and quantity will contribute to reducing legal risk of the municipality and supports management of stormwater under climate change scenarios.</p>
<p>Municipal Natural Asset Initiative: CVC is undertaking an initiative to build evidence and guidance for effectively identifying, measuring and managing the contribution of natural assets to municipal service delivery and community wellbeing to reduce vulnerability to climate change impacts.</p>	<p>CVC is currently inventorying all-natural assets within the Region of Peel to assess the level and value of services provided, assess impacts to these services arising from climate change and produce a priority map to advise on restoration efforts. The second phase of this project will be to build a business case for restoring key natural assets in two neighbourhoods, one of which will be in Caledon.</p>	<p>The value and health of natural assets in their contribution to climate change adaptation will be increasingly important as these systems become stressed resulting from changing weather patterns. Developing a methodology for the protection and enhancement of these assets in addition to understanding their contribution to climate change adaptation will support enhancing community resiliency.</p>