



Your Partner for
Clean Water 
The Credit Valley Conservation
Water Report



Credit Valley
Conservation

Welcome to the 2012 Credit Valley Conservation Water Report

Credit Valley Conservation (CVC) is dedicated to protecting, restoring and managing the water resources of the Credit River Watershed. Working hand in hand with our partners, members and donors, we are making significant progress towards a more sustainable future for our watershed.

The CVC vision is to “ensure abundant, safe, clean water for environmentally, socially and economically healthy communities within the Credit River Watershed”. In the last five years we have engaged partners and stakeholders around this vision and are working to address issues that matter most to the health of our watershed.

Guided by our strategic plan, we have demonstrated leadership in watershed protection and restoration through our Low Impact Development (LID) demonstration sites and “Making it Work” conferences and training workshops. We are in schools and on the streets, providing hands-on opportunities for all age groups to recognize the value of LID. We are in our rivers and in the lab, establishing Water Quality Monitoring and flood mitigation strategies to safeguard our communities against risk. We are working with municipalities to provide cost-effective stormwater solutions, and helping businesses showcase their sustainability commitments through leading edge site design.

The impact of our work has been acknowledged by a Showcasing Water Innovation grant, opening an exciting new chapter for our organization. Through provincial funding of \$1 million and private-public funding from 17 partners of \$900,000, CVC is committed to developing our storm water program and establishing Ontario as a water leader.

More than ever, strong partnerships are needed in the Credit River Watershed. The increase in extreme weather events has underscored the damaging and costly impacts of climate change. With population and urban intensification also growing in the watershed, action must be taken to build resilient communities in the face of changing environmental, demographic and economic conditions.

We will continue to expand our program delivery, particularly in the areas of water quality and flood risk management, and look for ways to develop our partnerships with businesses and communities across the jurisdiction.

On behalf of all of us at Credit Valley Conservation, I thank you for sharing in our progress.



Patricia Mullin, Chair of Credit Valley Conservation,
City of Mississauga Councillor



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Navigating This Report

This report describes the main initiatives and action areas of the Water Resources Management and Restoration of Credit Valley Conservation, highlights the impact of CVC activities and outlines the progress we have made towards meeting objectives set out in the 2007 Credit River Water Management Strategy Plan Update. The report is designed to allow partners and stakeholders to evaluate the success of programs and to encourage dialogue with new partners. It covers our activities and performance from 2008 to 2011.

The report is comprised of three sections: *Flood-Risk Mitigation and Education*, *Water Quality Monitoring*, and *Low-Impact Development*. Each section describes our program and activity areas, impact in the community, and our priorities for future action.

For more information about anything in this document, please visit www.BeALeader.ca, or email us at sustainability@creditvalleyca.ca.



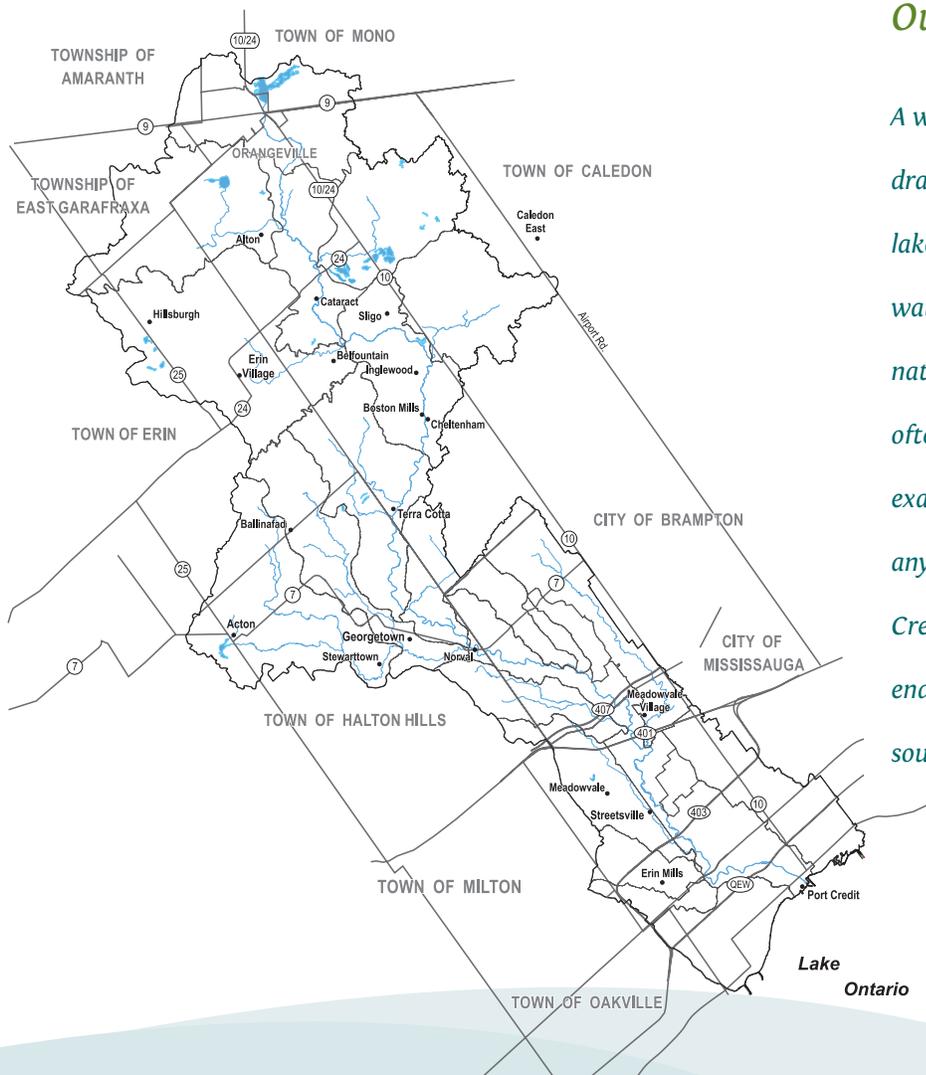
Credit Valley
Conservation

Your Partner for Clean Water

Our watershed is located within one of the most densely populated and fastest growing jurisdictions in Canada. Over 700 000 people live and work within the area that drains into the Credit River and Lake Ontario, the drinking water supply for millions of people.

The jurisdiction contains some of the most unique landscapes in Southern Ontario and is home to over 1,600 species of plants and animals and 1,500 km of freshwater streams and rivers. The past century has brought unprecedented change to the Credit River Watershed, putting these resources at risk. Our watershed is under tremendous pressure from intensified urban land use and the increasing impacts of climate change. The economic, social and environmental outcomes of these pressures will greatly influence the way we live and interact with our surroundings in the future.

The work CVC does to lead, collaborate and innovate is helping municipalities and businesses reduce their footprint on the watershed and become resilient in the face of change. It is our hope that this report motivates discussion around shared challenges and inspires potential partners to get involved.



Our Watershed

A watershed is an area of land that drains to a low point such as a river, lake or ocean. The boundary of a watershed is based on the elevation and natural contours of a landscape, and often crosses municipal boundaries. For example, a drop of water that lands anywhere inside the boundary of the Credit River Watershed will eventually end up in the Credit River, which flows south into Lake Ontario.

Credit Valley Conservation

Our Mandate:

CVC is a community-based environmental organization that has been working for over 50 years to ensure a clean supply of water for human and environmental needs. Through partnerships with public and private organizations throughout the Credit River Watershed we provide a range of activities and services that help conserve, restore, develop and manage natural resources in the jurisdiction.

The Credit Valley Conservation mandate is to understand the natural character of the Credit River Watershed and embark on a program of conservation that includes:

- **Development** of regulations and permitting.
- **Oversight** of water resources and natural heritage.
- **Ownership** of sensitive land for protection, appreciation and recreation where compatible.
- **Stewardship** initiatives with residents and landowners.

Water Resources Management & Restoration

Our Approach:

Through a wide range of activities and programs, CVC's Water Resources Management and Restoration is working with partners "to ensure abundant, safe, clean water for environmentally, socially and economically healthy communities within the Credit River Watershed".

Our watershed management work focuses both on present and future issues and needs. The Water Resources Management Restoration works to:

- **Identify** innovative, cost-effective solutions for drinking water, sewage and stormwater system challenges.
- **Optimize** systems and improve water conservation.
- **Discover** opportunities to demonstrate and carry out Low-Impact Development demonstration sites.
- **Change** the way that people interact with the rivers, streams and lakes around them and raise awareness about potentially harmful activities.

The water-related priorities of our partners provide a strong grounding for the work we do and inform future programming. We will continue to help municipalities throughout our jurisdiction respond to requirements in the provincial Water Conservation Opportunities Act and other legislation.

We provide effective, cost efficient services that support local governments and businesses in their efforts to reduce environmental impacts and safeguard themselves against water related risks. It is only by working together on these complex challenges that we can keep our water resources safe, clean and abundant for future generations.

Your Feedback

This is CVC's first Water Report. We welcome your feedback.



Please contact us at:
sustainability@creditvalleyca.ca
to provide us with your thoughts and comments

Flood Risk Management & Education

Helping Communities Understand Flood Risk & Prepare for Climate Change

When extreme weather causes flooding, there can be damaging and costly impacts to public infrastructure, private property and the natural environment. Large storm events have been occurring at a greater frequency and will require focused action as the effects of climate change become more acute. CVC supports a proactive and preventative approach to flood risk management through programs that monitor, educate, and implement adaptive solutions to flooding.

Climate Change and the Credit River

Climate change has already had observable effects on the global environment. Water damage insurance claims have soared to \$1.7 billion annually in Canada, a national increase of 160%, surpassing fire as the leading cause of damage to homes.

CVC has provided leadership on climate change and is facilitating action by:

- **Identifying** vulnerabilities and developing strategies & measures for adaptation.
- **Engaging** Stakeholders.
- **Supporting** Education.
- **Tracking** Progress, Recognizing Leaders.
- **Celebrating** Successes.



Flooding is a Costly Issue That Requires Smart Investments

With three 100-year storms (storms that are expected to take place once every 100 years) and five 50-year storms (storms that are expected to take place once every 50 years) occurring in southern Ontario in the last eight years alone, understanding the risks and impacts of extreme weather events is essential to curbing financial loss and creating adaptable communities. Flooding events in Peterborough, Mississauga, and Toronto have caused over \$500 million in damages to public and private property. Nationally and locally, water damage is the largest single component of insured loss.

The best way to plan for the future is to learn from past events. We are working to create awareness around flooding issues and to provide information that municipalities, homeowners and professionals need to best respond to extreme weather events. With intense storms expected to occur more frequently in southern Ontario, we are helping community partners make smart investments to manage flood risks.

For more information on how CVC is addressing and responding to flooding, please visit our Flood and Flood Proofing Resources webpage at www.creditvalleyca.ca

Taking Action Across the Watershed

CVC works at a watershed level to manage flooding and educate communities about the necessity of climate change adaptation and mitigation. Flooding can occur slowly through long periods of snow melt, or very quickly through sudden storms. We offer the science and strategy our partners need to prepare for and protect themselves against varied weather conditions.

How Do We Monitor Water Flows ?

Since 2010, we have established three real time stream flow monitoring stations across the watershed. We work in partnership with the Toronto & Region Conservation Authority (TRCA) and other regional conservation authorities to maintain a flood monitoring network that spans the entire GTA.

The precipitation and water level data that are collected at three of our monitoring stations is available for public use on our website.

Water Level Monitoring

We continuously monitor precipitation and water levels in the Credit River Watershed. Real time data collection helps us understand water levels and the rate of increase at each site. During serious storms, CVC's monitoring activities help municipalities and the public make emergency management decisions, by forecasting flooding and issuing flood warning messages to municipalities and media.

Education & Outreach

Flooding can have severe negative impacts on both human and natural communities. Creating awareness around flooding is one of the most significant ways we can curb its impacts. CVC helps partners understand the risks through the following resources:

Flood Resource List provides a list of key organizations and information on provincial policies and emergency preparedness for homeowners.

Flood Proofing Guidelines outline technical guidance for designing and constructing buildings that are located in floodplain areas.

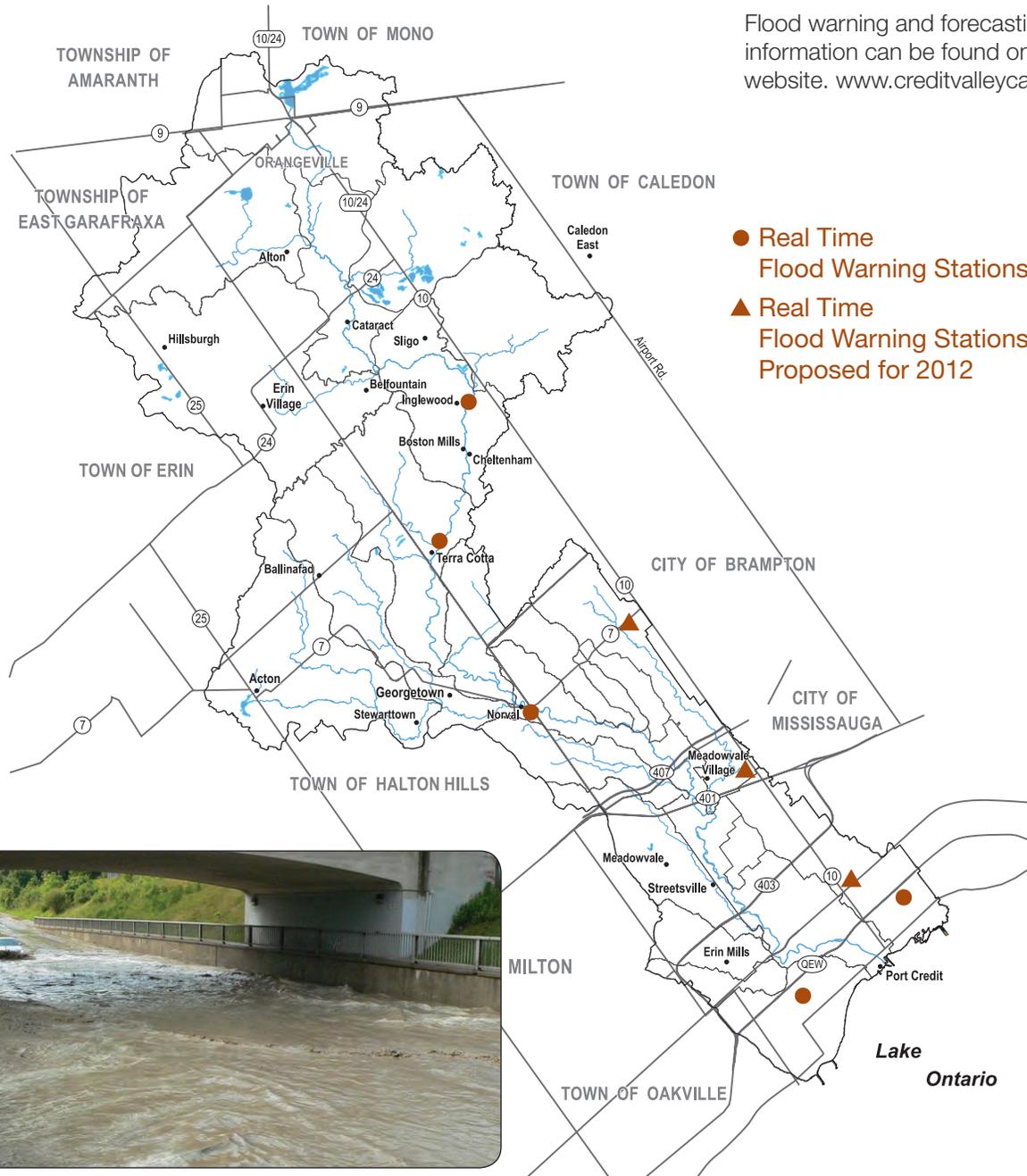
Low Impact Development (LID) Guidance informs developers and municipalities of LID techniques available to effectively manage storm water. LID is a new comprehensive storm water management and urban design approach that treats rain where it falls. More information about LID and the "Making it Work" LID engagement campaign can be found on page 15 and on our website, www.BeALeader.ca



Installation of real time monitoring equipment in Fletcher's Creek

Flood Warning & Forecasting

Through collection of real time stream flow and weather radar data, we forecast water levels and issue warnings to at risk communities throughout the Credit River Watershed. We use a colour-coded warning system to alert municipal flood coordinators, emergency services and the media when flooding is possible. Our warning and forecasting services are essential to coordinated emergency planning efforts across our jurisdiction.



2009 flooding in Mississauga, On.

CVC in Action: The Peel Climate Change Strategy

In September 2010, five organizations and CVC partnered to develop the Peel Region Climate Strategy. The strategy provides principles, goals, and actions that together outline how the partner municipalities will reduce local greenhouse gas (GHG) emissions and adapt for local impacts of climate change.

Project Partners

We will continue to assist our partners in focusing resources and coordinating joint implementation efforts. The Peel Region Climate Strategy targets action on GHG reduction; risk assessment; climate change adaptation and mitigation; public awareness campaigns; and policy regulation.



Planning and Regulatory Guidance

Proactively identifying floodplains and preventing new development from occurring in these risk-prone areas prevents unnecessary property damage and loss of life. Working with municipalities and the development community, we are committed to enforcing provincially approved watershed planning, regulation and policies that set out clear direction for current and future development. We help homeowners, developers and municipalities navigate the regulatory framework and ensure their projects are safe and in compliance with local policies.

Technical guidelines and watershed planning policies can be found on our website, www.creditvalleyca.ca

Climate Change Adaptation and Mitigation with Municipalities

CVC actively seeks to reduce vulnerabilities to climate change in the watershed through a variety of activities and programs. We provide a host of tools and education seminars through our “Making It Work” LID program. To further address climate change adaptation, we collaborate with Engineers Canada to conduct risk assessments of water resources and infrastructure in municipalities across our jurisdiction.



Streets Paved of Green – LID Site Tour from CVC’s 2011 “Making It Work” Conference

The Impact of Our Work

With the help of our partners we have made significant progress in managing extreme weather events and providing flood risk education across our jurisdiction. Our work has included:

Helping 100s of Stakeholders

Helping hundreds of homeowners & developers avoid the costs and damages associated with developing and living on floodplains by offering sound advice on building regulations.

Completing 18 Studies

Completing 18 Subwatershed & Restoration studies that identify opportunities and challenges with flood risk.

Issuing 44 warnings

Issuing 44 flood warnings throughout the watershed since 2007 that allowed municipalities and emergency services to respond in a coordinated manner and protect vulnerable residents.

Installing 3 Stations

Installing three real time stream-flow stations to better protect residents and reduce municipal liability since their 2009 installation.

Completing Partnership Studies

Completing a flood evaluation study in partnership with the City of Mississauga and the Region of Peel that identifies flood mitigation measures for Cooksville Creek.

Developing Forecasting Models

Developing a real time flood forecasting model for the Cooksville Creek watershed.

Releasing Guidelines

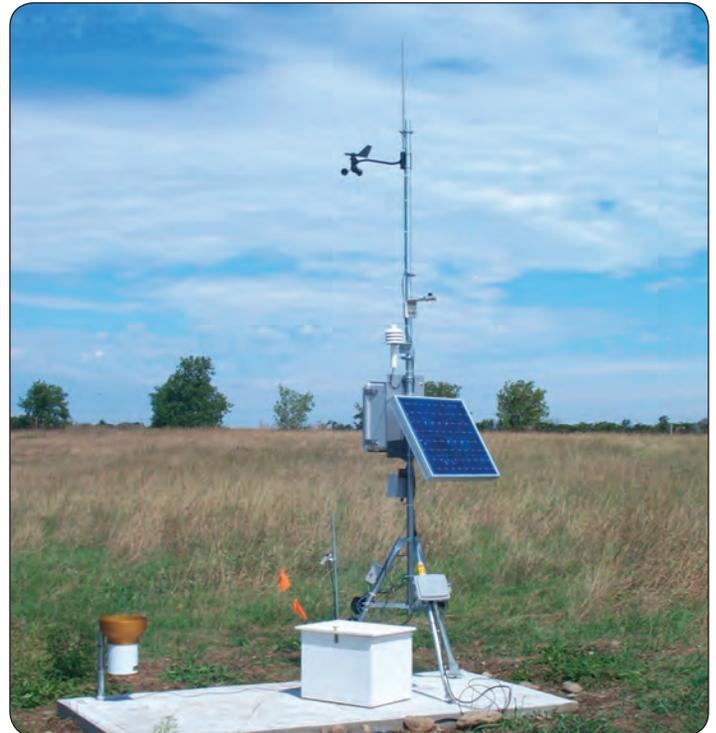
Releasing CVC's Stormwater Management Guidelines to provide municipalities and the development community with environmental targets to mitigate flood risks.

Future Priorities

The urgency of climate change and the need to develop adaptable communities have been recognized by partners across the public and private sectors. We are dedicated to expanding services to match the growing need for flood mitigation services and education throughout our jurisdiction.

Over the next three years we will:

- **Continue to educate and build capacity** around flood risk and climate change adaptation.
- **Enhance the rainfall and stream flow gauge network** in the watershed by initiating more than 20 stream flow and rainfall monitoring stations.
- **Assist our partners in the Peel Region Climate Strategy** through joint implementation efforts.
- **Continue to develop and use leading edge science** to monitor and study flooding through developing real time flood forecasting models and updating floodline mapping.
- **Continue to develop demonstration projects showcasing** LID practices and their ability to reduce the volume of stormwater and pollutants entering the Credit River Watershed.



Climate station used to monitor weather conditions in the Credit River Watershed

Working With Our Partners

CVC's municipal partners are working to reduce risk to people and property. The ongoing monitoring and planning required to adequately respond to flooding requires the coordinated efforts of many individuals and organizations. We would like to acknowledge the following partners:



Monitoring gauge equipment on the Credit River

Ensuring Safe and Clean Water

From Watershed Streams to your Kitchen Sink

Water quality touches every aspect of our lives, from the water we drink, the fish we eat, to the lakes we swim in and the businesses we operate. It is our role at CVC to continuously engage with our partners to monitor water quality in our rivers, streams and lakes. By undertaking pollution prevention activities and raising awareness, we are working to restore local waterways to clean and pollution-free environments, now and in the future.

Water Quality is Everyone's Concern

The waterways that make up the Credit River Watershed are vital resources that support local health, economy and livelihood. We are fortunate to have an abundance of freshwater sources that support various aspects of our lives and the unique natural ecosystems that thrive in these conditions. The most recent Report Card on Watershed Health found that while most Water Quality Monitoring stations were in stable condition, smaller urban tributaries ranked marginal to poor in water quality.

Through the Clean Water Act, CVC is mandated by the Province of Ontario to undertake Source Water Protection for the many watercourses in the watershed that flow into Lake Ontario. A central component of our activities is to ensure that pollutants stay out of the water system.

According to a recent CVC survey, only 33 per cent of businesses in Mississauga knew that their drinking water comes from Lake Ontario. In fact, water begins in our headwater areas, gradually seeps into the Credit River and discharges to Lake Ontario. We are working to ensure that pollutants stay out of the water system, as well as raising awareness about the sources of drinking water and the everyday activities that can put its quality at risk.



Through the award-winning

Community Engagement Program, we are raising awareness about the importance of biodiversity and how water pollutants are disturbing the Leopard Frog's natural habitat.

Why Biodiversity Matters

Biodiversity is the variability in living organisms in our ecosystem. It is a key element in measuring ecosystem health. Abundant watershed biodiversity in our watershed provides us with countless benefits including recycling of nutrients in soils, pest control and filtration of water and air.

Urban growth and human activities can affect biodiversity by polluting water with chemicals and potentially toxic materials. Through water quality management and pollution prevention activities, we work with our partners to learn about our jurisdiction's ecosystems and become informed of potentially harmful actions.

Taking Action Across the Watershed

Good water quality in the Credit River and its tributaries is important for drinking water, recreation, irrigation, industry and aquatic life. We offer fully developed monitoring and prevention activities to meet the needs of these varied areas.

Water Quality Monitoring:

The Credit River Watershed is identified as a Source Water Protection area in the province's Clean Water Act. Therefore, monitoring water quality in the Credit River is critical. CVC has enhanced its Water Quality Monitoring efforts using state-of-the-art water quality probes that measure six indicator parameters (water temperature, oxygen in water, pH, chlorides, turbidity and specific conductivity) at 15-minute intervals. This real time reporting network provides immediate alerts if an indicator is outside the allowable limits; this information is communicated to local, regional and provincial authorities. CVC's real time water quality network currently has four real time stations, and is targeted for expansion in the future.

To learn more about CVC monitoring activities and responsibilities under the Clean Water Act, please visit www.creditvalleyca.ca

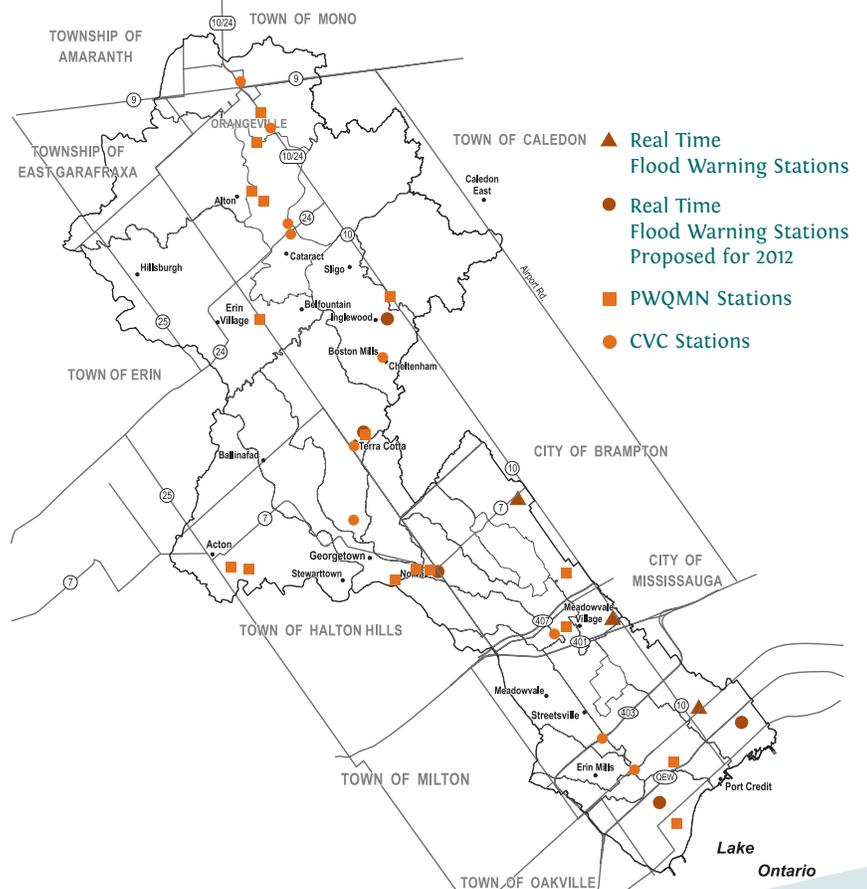
Research and Strategies:

CVC's team undertakes water quality research that provides information and promotes understanding of waterway health. For example, a series of spill studies were recently completed to evaluate the characteristics of hazardous spill events. The type of spilled materials, travel-times, source locations and vulnerable areas were assessed. Research also showed how spills travel through municipal stormwater systems and identified measures that must be taken in the event of a spill. This research has been an essential contribution to our jurisdiction Water Quality Monitoring networks and to the Ontario Ministry of Environment.

Pollution Prevention Program and Demonstration Sites:

We are a leader in promoting awareness and education around pollution prevention through the Low Impact Development program. The goal of this program is to reduce pollution entering storm sewers, creeks and Lake Ontario. Demonstration sites at local businesses showcase pollution prevention, including spill containment pads, natural clean water filters, and better outdoor material storage methods.

This program allows businesses to showcase green leadership and examine their ecological footprint on the watershed. CVC also works with municipalities to optimize winter maintenance practices through assessing salt application techniques and evaluating performance of winter salt alternatives.



CVC in Action:

Pollution Prevention Demonstration Sites

CVC, in partnership with the City of Mississauga, and with funding support from the Government of Ontario have been working with local businesses in south Mississauga to help reduce potential pollution threats to our creeks, streams, and rivers which flow into Lake Ontario. Pollution prevention (P2) is the act of eliminating or preventing pollution at the source. By reducing potential pollution threats to our local waterways, we inherently reduce impacts to one of our major drinking water sources, Lake Ontario.



David Armstrong showcasing his spill containment sumps at CVC's 2011 "Making It Work" Conference

“ We engaged CVC to assist us with greening our work in the sanitation supply and packaging industry. Our rewarding partnership with CVC through the Pollution Prevention (P2) Demonstration Project allowed us to showcase our business as a leader in clean water and has enabled us to evaluate our business operations from a sustainable perspective. ”

David Armstrong,
Armstrong Manufacturing Inc.



Three businesses partnered with CVC to be pollution prevention demonstration sites for businesses across the watershed. They included Armstrong Manufacturing - a chemical manufacturer; Bernardi Building Supply - a building supply company; and Unifay-Fedar Investments - a commercial rental property with multiple tenants. The pollution prevention demonstration sites looked at ways of improving product handling, waste material storage, shipping and receiving, service vehicle fueling stations, site drainage, and staff and customer education. Strategies implemented ranged from no dumping signage, to better dumpster management, to construction of clean water buffer strips to filter surface runoff.

The Impact of Our Work

Our program areas have expanded in the past five years to address the growing impacts of climate change and the watershed's rapidly expanding population.

We are pleased to highlight the following milestones.

Our work has included:

Partners in Implementation of 2 Studies

Working in partnership with member municipalities to complete two Servicing and Settlement master planning studies that provide municipalities and stakeholders with recommendations for sustainable planning.

Established 4 Real time Water Quality Stations

Established four real time Water Quality Monitoring stations that provide critical data to track the quality of drinking water sources. Over the past year we have taken over 1,400 water quality readings at these sites.

Established 3 P2 Sites

Established three pollution prevention (P2) demonstration sites to demonstrate how businesses can implement practical P2 strategies to reduce risk and various pollutants, cut costs, and improve their bottom line.

Created 2 Impact Studies

Provided two comprehensive studies on the environmental impact of winter salt use and salt alternatives within municipal roads and commercial parking lots.

Engaged More Than 200 Leaders

Engaged MORE THAN 200 municipal and business leaders through workshops and seminars as part of our Pollution Prevention Program. A total of three businesses have showcased their leadership with cutting-edge pollution prevention technologies on site.

Showcased Floating Islands

Launched the floating islands demonstration project with the City of Brampton in September 2010, and received recognition along with our partners in the Globe and Mail.

Launched High-Impact Programs

Launched the International Award Winning Save the Leopard Frog School tours program and education campaign, engaging over 4,000 school students in an interactive field tour that enhances curriculum. This program continues to gain momentum since its development and we will continue to work with schools for the 2012-2013 year.

Future Priorities

CVC recognizes the importance of water quality management throughout the Credit River Watershed. Our work as a source water protector is constantly evolving. We have outlined the following priorities to build and improve on our substantial work in this area. Over the next three years we will:

- **Expand the real time Water Quality Monitoring network.**
- **Through the Integrated Watershed Monitoring Program,** we will publish *Watershed Report Cards* every five years that evaluate the health of the Credit River Watershed. The most recent Report Card found that while most monitoring stations were in stable condition, smaller urban tributaries ranked marginal to poor in quality. We will work with stakeholders to raise awareness and promote pollution prevention and LID to improve water quality in local watercourses.
- **Undertake six pollution prevention projects** with municipal and public sector partners throughout our jurisdiction.
- **Carry out new water quality sampling initiatives** along the Lake Ontario shoreline in collaboration with the Region of Peel, member municipalities and stakeholders.
- **Install two additional floating island projects** and release a Floating Islands Performance Report to provide design guidance to consultants and approval agencies.
- **Continue working with municipalities** to optimize road and parking lot winter maintenance practices to reduce impact on the natural environment.



Mississauga students planting newly restored floodplain



Floating Island Pilot Project in Brampton, ON

Working With Our Partners

Monitoring and managing water quality on a jurisdictional scale requires cross-sectoral collaboration and the ongoing efforts of many dedicated groups.

The following organizations are working to monitor and manage water quality in the Credit Valley Watershed:



Green Glade P.S. Rain Garden – Receives runoff from roof top and parking lot



“Throughout the design, construction and public outreach process, CVC has skillfully facilitated the eco-projects at Green Glade P.S.”

Wendy Dowling,
Superintendent of Education,
Peel District School Board



Green Glade P.S. students planting a water efficient garden at their school

Stay Ahead of the Storm

Optimize Municipality and Business Performance with Low Impact Development

With the increasing pace of development, aging infrastructure and the threat of climate change, Credit Valley Conservation and its watershed stakeholders recognize that action is needed to maintain community health. We are leading by example across the jurisdiction. We work with partners to promote Low Impact Development (LID) through community engagement hands-on professional training; support of smart development and facility upgrades; and performance monitoring.

Low Impact Development can help – here's how:

- **Manage Rain Where It Falls** by using a suite of LID options such as green roofs, rainwater harvesting, rain gardens, permeable pavements, perforated piping and bioswales.
- **Enhance the Bottom Line** and reduce building costs. Development with LID has had an average reported savings of 24% compared with buildings that utilize conventional infrastructure (US EPA, 2007 Report - Reducing Stormwater Costs through LID Strategies and Practices).
- **Provide Engineers and Planners with Stormwater Management Options** that optimize urban form to allow greater developable space and added value for customers.
- **Increase Infrastructure Resilience** and build flexibility within municipal and corporate infrastructure.
- **Simplify Long-term Maintenance and Operations** through in-house repairs and upgrades without the cost of hiring skilled contractors.



of Financial Times TOP 500 survey respondents have developed specific water policies and strategies



of surveyed businesses have identified improved water management as a means of reducing operating costs



of survey respondents have set water related performance targets

~ 2010 CDP Water Disclosure Report

Want to Learn More? Ask Credit Valley Conservation

CVC has developed a comprehensive suite of tools to help municipalities and businesses design and implement LID strategies that work for them. This work helps partners reduce environmental impacts and costs while improving liveability, including new development, urban retrofits, and revitalization. From students to corporate leaders, we have the tools you need to undertake high-impact and leading edge projects on your property or in your community.

Our Programs

a Leader for CleanWater

Leaders for Clean Water

We offer LID and Pollution Prevention services for Residential Development Community and Municipalities

Services Offered

- Guidance to consultants and municipal staff on LID site design and pollution prevention measures, including first-hand experience through LID demonstrations sites
- Peer review of engineering designs and tender documents
- Support for grant applications to enable the implementation of innovative technologies
- Onsite construction assistance
- Assistance to develop and administer focused performance monitoring of LID, spill prevention measures and winter maintenance practices
- Profile to developers and municipalities through outreach to residents through signage, web resources and literature, opening ceremonies and special events



Partners in Project Green

We offer LID and Pollution Prevention services to Industrial, Commercial, and Institutional clients for new construction, redevelopment, and retrofits

- Guidance to engineers, landscape architects, and contractors on design and construction of LID sites and pollution prevention measures, including first-hand experience through LID demonstrations sites
- Peer review of engineering designs and tender documents
- Support for grant applications to enable implementation of innovative technologies
- Onsite construction assistance
- Assistance to develop and administer focused performance monitoring of LID features, spill prevention measures, and winter maintenance practices
- Profile to companies through signage, web resources and literature, opening ceremonies and special events



Making It Work: Professional Training

We provide municipal staff, the development community, and planning professionals the training they need to promote and deliver LID

We help professionals learn about and use LID techniques by:

- Hosting a variety of workshops, conferences and training sessions designed to educate professionals about LID techniques and their value
- Delivering industry approved training nationwide through our partnership with the Canadian Standards Association
- Producing LID guidance documents, fact sheets and presentations from past workshops, available through www.BeALeader.ca



Community Engagement Program

We help watershed residents and community based organizations understand and use LID techniques through demonstration projects, Pollution Prevention programs and our “Making It Work” website

We bring hands-on experience and learning to all ages through our:

- Engaging environmental curriculum and school field trips to the Credit River and its tributaries
- Interactive educational signage at project sites
- LID demonstration sites on school grounds



The Benefits

- Creates resilient infrastructure and improvements to watershed health
- Protects and extends the life of existing drainage infrastructure
- Provides enhanced water quality and erosion protection and new capacity within existing urban form (i.e. road right of ways, under roadways, within public spaces)
- Monitoring informs future policy and decision-making, helps ensure appropriate management practices are employed at LID sites, and builds momentum and consensus around LID demonstration projects

- Reduces the risk of slips and falls
- Improves aesthetics
- Prepares for future stormwater regulations
- Raises company profile, increases corporate environmental accountability, and helps satisfy growing consumer expectations of sustainable solutions
- Prevents the risk of spills
- Reduces stormwater runoff and the impact of pollution on the Credit River Watershed

Our LID training helps:

- Evaluate the benefits, costs and efficacy of LID for projects
- Implement LID practices
- Maintain LID projects
- Stay on top of industry and government best practices and standards

Through our education and engagement, residents, schools and community organizations are able to:

- Connect to the Credit River ecosystem
- Understand urban impacts on our rivers, creeks, and Lake Ontario
- Actively participate in greening our communities and protecting water resources



The Programs in Action

"We were pleased to work with the Credit Valley Conversation Authority to implement LID practices at our latest community, Walnut Grove. LID has allowed us to avoid the need for a stormwater pond, increasing the number of developable lots, and has provided homeowners with unique landscaped features."

~ Giulio Bianchi, Principal,
Sequoia Grove Homes

"Through our partnership with CVC, we have been able to achieve the goals and objectives of Mississauga's Strategic Plan, Our Future Mississauga, by ensuring that the health of Mississauga's communities, natural environments and drinking water supply are protected and restored through LID strategies."

~ Steve Barrett, Manager,
Transportation Asset Management,
City of Mississauga

"I personally am very happy with how the project has turned out, and I am looking forward to continue working with CVC to find other ways in which we can better protect Mississauga's water supply."

~ David Armstrong, President,
Armstrong Manufacturing



"Making It Work" LID conferences

With the help of more than 10 partners, we have hosted nine "Making It Work" LID conferences since 2007 and reached over 2000 participants.

CVC produced guidance includes:

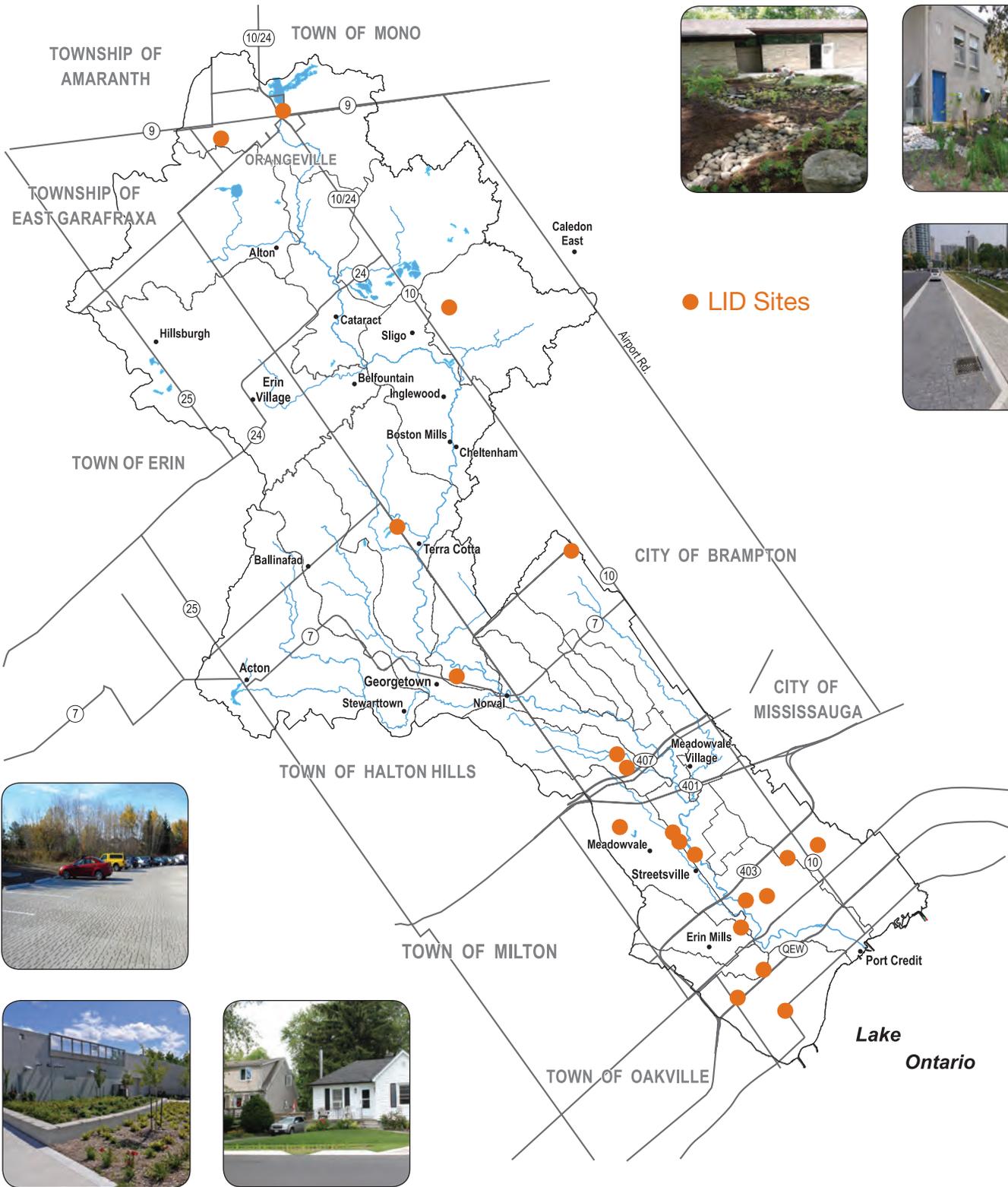
- LID Construction Guide
- LID Landscape Design Guide
- Pollution prevention fact sheets for industrial sites

Save the Leopard Frog School Tours

The Save the Leopard Frog School Tours have engaged more than 4000 student participants through interactive field tours that educate participants on how they can help to improve their creeks, streams, fields, forests and rivers. School tours have led to the installation of living classrooms and LID retrofits in several schools.

"As a result of this partnership between the PDSB and CVC, we have been able to add value to the school through improved environmental sustainability as well as provide hands-on learning opportunities for our students."

~ Wendy Dowling, Superintendent of Education,
Peel District School Board



● LID Sites

Use of sustainable stormwater planning and practices will help ensure the continued health of streams, rivers, lakes, fisheries and terrestrial habitats in our watershed.

The Impact of Our Work

We have made significant progress in the last four years in facilitating LID in the Credit River Watershed. Our work has included:

Completing 6 Guidance Documents

Completing six Guidance Documents that assist municipalities and professionals with LID planning, design, construction, maintenance and inspection.

Reviewing 30 LID Plans

Reviewing the plans for 30 LID sites and providing guidance around the proper application of LID.

Supporting 20 New LID Sites

Supporting 20 new demonstration projects for LID, pollution prevention and special stormwater management.

Engaging Over 2000 Participants

Providing nine workshops with 2,000 workshop participants from the development community, consulting professionals and government.

Raising \$3.8 Million for LID

Raising nearly \$3.8 million for implementation of LID demonstration sites, performance monitoring and technical guidance documents.

Saving \$1.6 Million

Saving our partners \$1.6 million by undertaking LID instead of conventional stormwater management.

82,000 m³ of Runoff Cleaned

82,000 m³ of runoff once untreated (equivalent to 33 Olympic-size swimming pools) is now being cleaned through LID practices each year.

Working with Our Partners

From Credit Valley's schools to our city streets, we are creating on the ground change through collaboration with 68 diverse partners, including:



“ We are thrilled to be working with Credit Valley Conservation and their partners to implement a green “low impact development” parking lot at our corporate headquarters in Mississauga, Ontario. The CVC has taken the lead role in implementing all aspects of this project from securing funding and partners, to implementing the innovative LID design. It’s our hope that this demonstration project will inspire other business leaders in the community to pursue similar sustainable water management practices. ”

Nancy Cole, IMAX Corporation

Future Priorities

While strides have been made with LID in the Credit River Watershed, there is significant work to be done to ensure LID practices are used at the scale needed to protect the watershed as the pace of development continues. Over the next three years we will:

- Release five new LID planning and design guidance documents to support infrastructure retrofitting in private and public lands to reduce risk and costs.
- Continue efforts to increase the uptake of LID practices through education and capacity building, including an LID construction training program that we will pilot in 2012 and formally offer in 2013.
- Support implementation of further LID demonstration projects in both private and public lands to build LID experience and its profile in our community.
- Provide support and incentives for developers and land-owners to apply LID practices through the Partners in Project Green and Leaders for Clean Water programmes.
- Continue to engage all stakeholders in addressing barriers to wider adoption of LID across Ontario.
- Achieve the goal of treating 810,000 m³ of water per year (equivalent to 326 Olympic sized swimming pools) through the construction of planned LID sites.



CVC awarded \$1 Million grant from the Showcasing Water Innovation Fund

Working With Our Partners

The work that we do at Credit Valley Conservation would not be possible without our many donors, volunteers, members, and community partners. We are committed to finding new and better ways of working together to make proven and positive contributions to watershed health. We work with our partners to advance the science of watershed restoration using best practice approaches and tools such as *Water Quality Monitoring, Flood Risk Mitigation and Education, and Low Impact Development*.

Collaborating for Change: Who is CVC Working With?

Municipalities - A watershed is based around the natural landscape, and its borders fall across many municipal boundaries. Managing the natural resources in our watershed requires the collaboration and dedication of many local governments. We provide opportunities for member municipalities to showcase their water leadership, learn from each other and support strategic planning for adaptation and restoration.

Our Partners include: The Region of Peel, Region of Halton, County of Dufferin, City of Mississauga, Town of Oakville, City of Brampton, Town of Caledon, Town of Erin, Town of Halton Hills, Town of Orangeville, Town of Mono, Townships of Amaranth and East Garafraxa.

Businesses - Water issues naturally have an effect on the way we do business. Many private organizations across our jurisdiction have recognized the importance of clean water and engage with CVC to help them green their operations and demonstrate innovations in stormwater management. CVC believes in ‘**conservation through collaboration**’ - we work in partnership with local industry, the development community, non-profit organizations and other commercial businesses large and small to effect change across our watershed.

Volunteers & Our Credit Members - Each year, volunteers with CVC contribute over 12,500 hours of service and their passion helps fuel many successful programs and activities. ‘Our Credit’ members help fund the maintenance of our conservation areas as natural spaces for healthy recreation and environmental learning.

To learn more about volunteering & membership with CVC, visit our website.

Donors - Through the CVC Foundation we raise funds and awareness in support of the many conservation projects we undertake on an annual basis. Last year we accepted generous contributions from more than 489 donors, totaling \$644,560.

To learn more or make a donation, visit the website at www.landscapesforlife.ca



Private and Public Partners Panel Discussion at the 2011 “Making It Work” Conference

Why Work With Us ?

Getting involved with CVC is not just the right thing to do, it is the smart thing to do.

We regularly and publicly communicate the important commitments of our partners. We celebrate and recognize their work through outreach events, publications and social media.

Looking for exposure? CVC's award-winning partnering programs have been recognized in national media and together have engaged over 6,000 residents and professionals who bring their talent and energy to the task of creating a healthier local environment.

How You Can Get Involved

People who get involved with CVC play a powerful role in enhancing the well-being of their communities. Whether as a funder, volunteer, member or program partner, you can contribute to the health and sustainability of our watershed. We are always looking for new and innovative ways to partner with organizations across our jurisdiction to bring more awareness to watershed issues and to demonstrate techniques that reduce environmental impact. Examples of our successful partnerships are highlighted throughout this report.



Partnership with Visual Arts Brampton to develop outdoor artwork



Planting of Portico Church's Rain Garden

Find Out More & Get Involved



Contact CVC's Water Resources Management and Restoration Group if you have any questions about anything in this report, or how to find out how to get involved.

☎ Phone: 905-670-1615

✉ Email: sustainability@creditvalleyca.ca



Mississauga students at Lushes Ave. learning about watershed health and restoration



Our Partners

From Credit Valley's schools to our city streets, we are creating on the ground change through collaboration with **68 diverse partners.**

