

THE CITY OF ST. CATHARINES

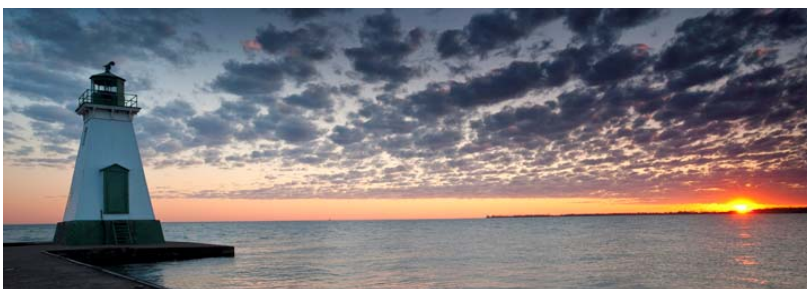
SUSTAINABLE MUNICIPAL WATER MANAGEMENT PROGRAM

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THE CITY OF ST. CATHARINES

Background

As a member of the Great Lakes and St. Lawrence Cities Initiative (GLSLCI) St. Catharines is participating in the Sustainable Municipal Water Management (SMWM) Program. The GLSLCI is a coalition of Canadian and American mayors working actively with federal, state, and provincial governments to advance the protection and restoration of the Great Lakes and the St. Lawrence River. The City of St. Catharines has been a member of the GLSLCI since its inception in 2004. In 2010, St. Catharines City Council endorsed the GLSLCI's Green CiTTS Program.



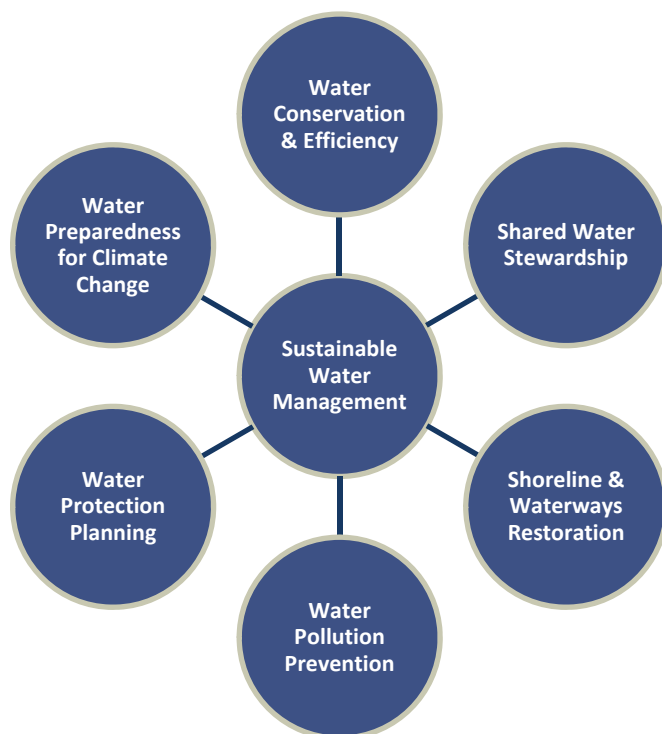
GREEN CiTTS PROGRAM

The Green CiTTS Program adopts a comprehensive approach to protecting our shared water resources, involving a broad range of municipal operations and responsibilities. The program showcases municipal leadership and provides support to municipalities to further expand these activities.

Through the promotion and expansion of best management practices municipalities are setting the course for a sustainable future. One component of the Green CiTTS Program is the Sustainable Municipal Water Management Framework.

Sustainable Municipal Water Management

To deal with the impacts to water resources, municipalities are increasingly embracing an integrated approach to water management which captures the full spectrum of a community's impact on water. The approach cuts across traditional municipal delivery areas, to include infrastructure, habitat restoration, land use planning, public education, emergency planning, pollution prevention and shoreline protection.



This shift in water management, from a narrower operational focus on water service delivery, to a broader notion of 'sustainable water management' marks a change for municipalities, which takes time to adopt and involves continuous improvement.

THE SIX PRINCIPALS

1

Water Conservation
and Efficiency

2

Shared Water
Stewardship

3

Shoreline and
Waterways
Restoration

4

Water Pollution
Prevention

5

Water Protection
Planning

6

Water Preparedness
for Climate Change

PRINCIPAL 1

WATER CONSERVATION AND EFFICIENCY

GLSLCI Water Conservation Framework

In 2007, St. Catharines City Council approved participating in the GLSLCI's Water Conservation Framework. This is a voluntary program in which cities commit to reducing water usage within their jurisdictions. Participating cities are working towards a 15 percent reduction in total water usage below 2000 water consumption levels by 2015.

Analysis of water use over the last 15 years has shown conservation efforts by St. Catharines water customers have resulted in a significant reduction in water demand.



Since 1999 annual water use has decreased by 42% from 27,600 cubic metres to 15,900 cubic metres in 2013.

Paying for what we use encourages households and businesses to reduce their water consumption. The City aims for full cost recovery in its rates including:

- *Maintaining and rehabilitating infrastructure;*
- *Having qualified staff operate the system according to provincial regulations;*
- *Testing and monitoring water quality to ensure it always meets or exceeds provincial and federal standards;*
- *Ensuring water is available for firefighting when required.*

Measuring water use is an important part of ensuring people pay for what they use. St. Catharines was one of the first municipalities in Ontario to fully meter all of its customers, and now it is taking the next step with new radio-read meters.



PRINCIPAL 2

SHARED WATER STEWARDSHIP

Public Education

For more than 20 years St. Catharines has been talking to students about water conservation and the importance of our water resources. In 2013, the City performed 60 interactive presentations in local schools reaching over 2,000 students.

Rain Barrel Sale

St. Catharines hosts a very popular rain barrel sale each year. This is an opportunity for residents to do their part to conserve water and reduce stormwater runoff.



World Water Day

St. Catharines hosts a number of water conservation information displays each year at local shopping malls, libraries, home renovations shows and the local farmer's market.

Niagara Children's Water Festival

St. Catharines has been a strong partner in the Niagara Children's Water Festival, which hosts 5,000 elementary students each year and conveys a powerful message about protecting our water for the future.



Volunteer Opportunities

Residents of St. Catharines can participate on a number of Committees of Council to make the City more sustainable including the Green Committee, the Clean City Committee and the Integrated Community Strategic Plan's Community Advisory Committee.

PRINCIPAL 3

SHORELINE AND WATERWAYS RESTORATION

Lake Ontario Shoreline

In urban St. Catharines over 80% of the Lake Ontario shoreline is publicly accessible. This includes three public beaches, 10 waterfront parks, Port Dalhousie Harbour and the Waterfront trail.

Protected Areas

St. Catharines is home to a large number of important wildlife habitats including 275 hectares of Areas of Natural and Scientific Interest which are protected through the City's Official Plan.



Parks, Trails and Greenspace

The George Nicholson Trail, a 3 km looped trail on the east side of the Welland Canal opened in 2011, makes the Lake Ontario waterfront even more accessible. This is part of the City's 90 km trail network which allows people to enjoy Lake Ontario, the Welland Canal, Twelve Mile Creek, Burgoyne Woods, the Niagara Escarpment and many other local parks and valleys.



Lakefront Enhancement Strategy

St. Catharines is also working with the Niagara Region through its Lakefront Enhancement Strategy toward providing improved opportunities for the public to experience the lakefront in meaningful ways. When the public feels connected to Lake Ontario, they are more likely to value it and support efforts to protect it.

PRINCIPAL 4

WATER POLLUTION PREVENTION

Water & Sewers

Water and wastewater services are provided through split jurisdiction with the City of St. Catharines operating the watermains and sewers and the Niagara Region operating the water treatment and wastewater plants.

Combined Sewers

Combined sewers transport both sanitary sewage and stormwater in the same pipes and were generally installed prior to the mid 1900's. During dry weather these sewers transport all of the flow to a wastewater treatment plant. However, during large rainstorms, the volume of flow can exceed the capacity of the sewer system. When this happens, a portion of the flow is diverted away from the wastewater treatment plant and untreated sewage mixed with stormwater is released directly into local water bodies and ultimately Lake Ontario. The outfalls where this discharge happens are called Combined Sewer Overflows (CSOs). St. Catharines was the first municipality in Ontario to prepare a comprehensive Pollution Control Plan to reduce the impact from CSO's. Projects include source controls which keep stormwater out of the system, replacing aging sewers, installing new separate storm sewers and constructing CSO storage tanks.

Storm Sewers

In neighborhoods without combined sewers, stormwater is still an issue. When rainwater flows over roads and parking lots it can pick up oil, grit, pesticides and other pollutants and flow untreated into local creeks and ultimately Lake Ontario. St. Catharines has installed a constructed wetland and several underground oil and grit separators to remove pollutants from stormwater and help improve water quality.



Road Salt Management Plan

In 2008, Council approved a road salt management plan to reduce the amount of salt used on the roads and ensure it is applied effectively.

PRINCIPAL 5

WATER POLLUTION PLANNING

Official Plan

When the City's Official Plan was updated, it recognized that in order to be sustainable, St. Catharines must protect its water resources. One of the unique features of *the Garden City Plan* is that when new developments require a Stormwater Management Plan, the plan needs to consider alternative approaches to traditional stormwater management such as low impact development.



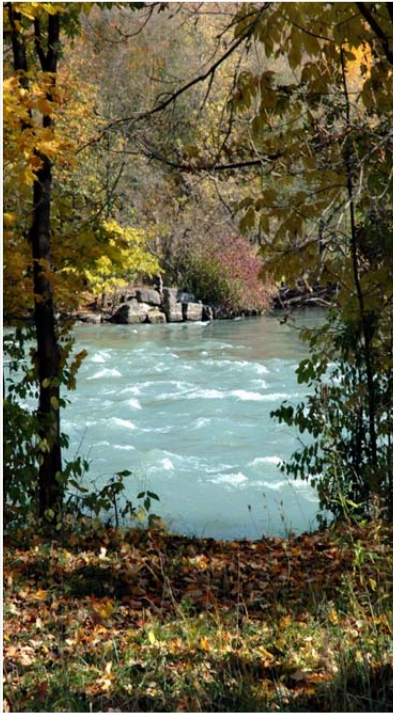
*Permeable Pavement Types
City of St. Catharines*

Low Impact Development Pilot Project

An example of Low Impact Development is the permeable pavement which was installed at the City's Lake Street Service Centre property as a pilot project. Permeable pavement allows rainwater to infiltrate through it and replicate the natural water cycle. This project is designed to measure the operations and maintenance requirements in a real world setting.

PRINCIPAL 5

WATER POLLUTION PLANNING



WaterSmart

WaterSmart Niagara is a strategy that works towards the common goals of protection, restoration and management of water resources across the Niagara watershed. Niagara Region coordinates this partnership between local municipalities, Niagara Peninsula Conservation Authority, Ontario Ministry of Environment and the Ontario Ministry of Agriculture, Food and Rural Affairs to develop and oversee the strategy and its objectives. The strategy guides users on how to best manage activities that affect our ground and surface water resources. It is intended to build on past successes, current initiatives, and future plans of stakeholders and area municipalities.

Twelve Mile Creek Watershed Plan

St. Catharines was among a number of partners who worked with the Niagara Peninsula Conservation Authority as part of the Twelve Mile Creek Watershed Management Plan. Twelve Mile Creek is an important watershed and contains the only cold water stream in the region that supports naturally occurring Brook Trout. The Plan helps to aid in protecting and enhancing the biological, cultural, agricultural, economic and recreational resources of the Twelve Mile Creek Watershed.



PRINCIPAL 6

WATER PREPAREDNESS FOR CLIMATE CHANGE

The Garden City Plan

The Integrated Community Strategic Plan (ICSP) identified climate change as one of six challenges that have the greatest potential to threaten St. Catharines' sustainability in the future. The ICSP is designed to factor climate change into the corporate decision making process.

Emergency Plan

The St. Catharines Emergency Plan considered the impacts of climate change when it was designed. For example it covers natural disasters such as flooding and public health emergencies such as heat waves.

Green Energy Act

St. Catharines has prepared an annual electricity and greenhouse gas emission report and is currently developing a 5 year energy conservation and demand management plan, which will set targets and reduce greenhouse gas emissions.

Green Roof, Lock 3 Museum, St. Catharines

