

# **Sustainable Municipal Water Management Public Reporting**

**Mayor Tom Barrett, City of Milwaukee**

Cities Initiative Annual Conference  
Thunder Bay, ON  
June 19, 2014



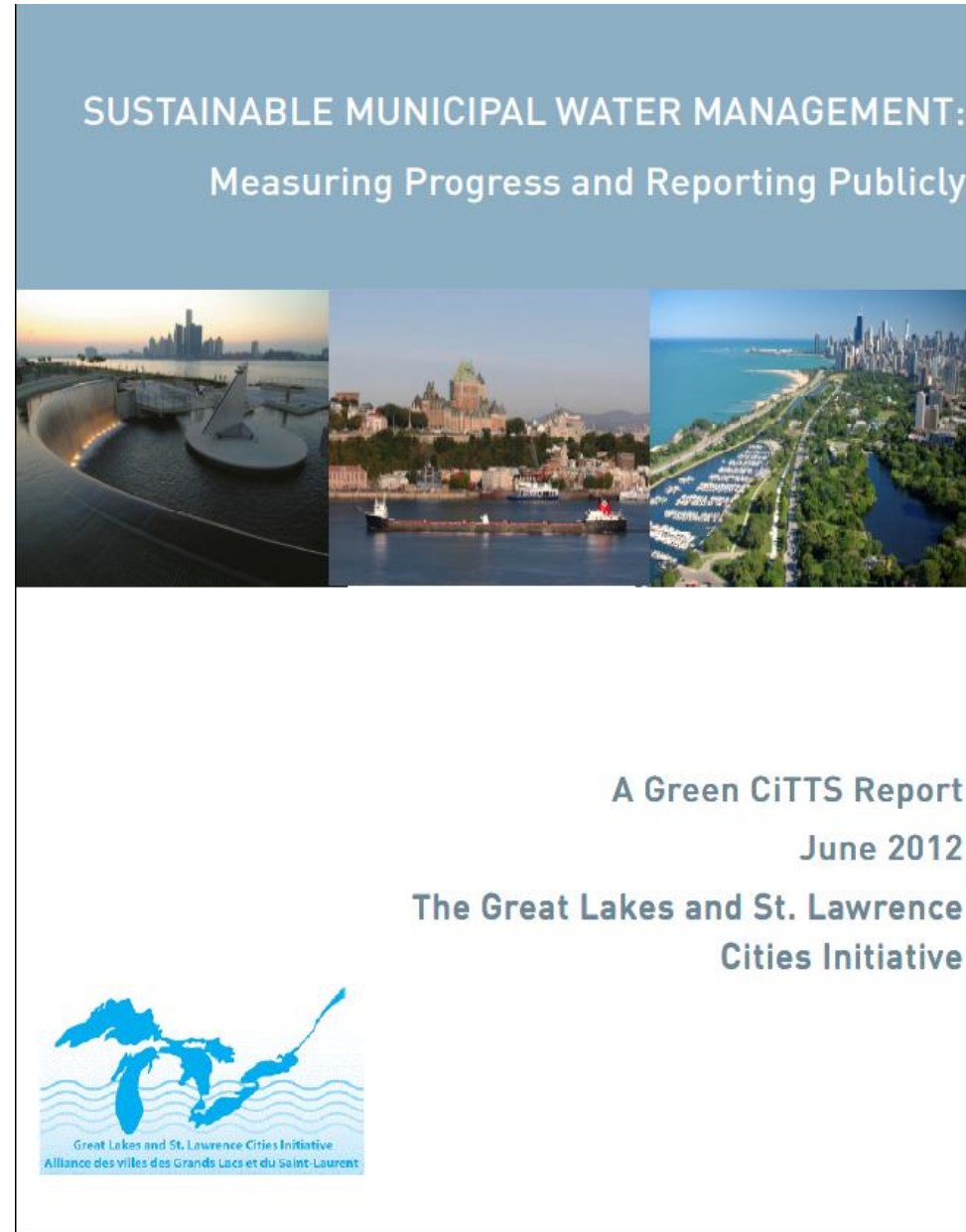
# Sustainable Municipal Water Management

- Like green house gases, public reporting on water management becoming more common, esp. amongst large water users in private sector, eg. Pepsi, Nestlé.
- As major water users, cities are moving from focus on water as purely operational issue, ie. delivery of drinking water, collection and treatment of sanitary and stormwater, towards integrated management capturing full spectrum of impacts on water.

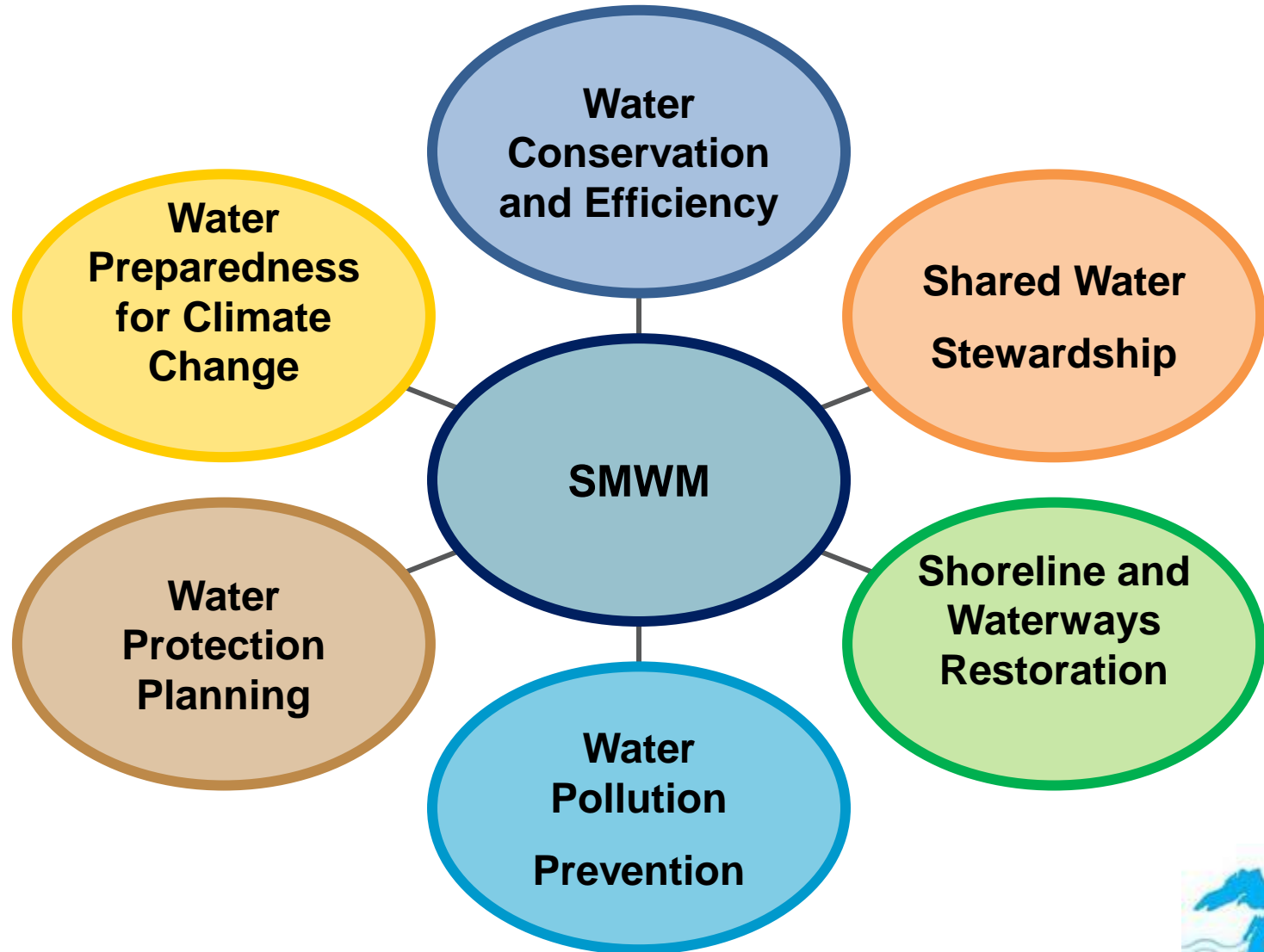


# Sustainable Municipal Water Management Framework

- Released in 2012 includes:
  - SMWM Framework, 6 principles and 20 milestones
  - One indicator for each milestone with which to measure progress
  - Monitoring and public reporting of progress towards sustainable water management



# Six Principles of Sustainable Municipal Water Management



# SMWM Public Evaluation Report

## At-A-Glance Table

- For each milestone, municipality measures progress, evaluates performance, reports publicly using colour coded symbol.
- not meant to compare one municipality against another, but rather to track change in own performance year over year.
- If indicators in report do not match municipal circumstances, municipality may choose own indicator to track progress towards milestone.

### Colour-Coded Symbols



Progress



No change



Needs  
improvement



Undetermined



# SMWM Reports from Four Cities

- In 2013, four member cities volunteered to test-run the framework and reporting template.

Durham Region

Montreal

Milwaukee

St. Catharines

- Yesterday, award was given to XXXXXX for the best report in this first round of measuring progress and reporting using the SMWM framework.
- See reports at booth in coffee break area.



# Durham Region SMWM Report

## DURHAM WORKS

### *Our water is worth it!*

We can't live without fresh, clean water, and Durham residents are fortunate to live next to the largest supply of fresh water in the world! About 95 per cent of Durham's municipal tap water comes from Lake Ontario. The rest comes from Lake Simcoe and underground sources. As the operator of Durham Region's municipal water supply and wastewater treatment systems, the Works Department plays a

key role in managing our water resources in a sustainable and responsible way. Working with local conservation authorities, residents and businesses, the Region of Durham places a priority on sustainable water management. Durham Region is part of a group of municipalities from Canada and the United States taking part in a pilot program organized by the Great Lakes and St. Lawrence Cities Initiative to improve and sustain our freshwater resources. Water stewardship is everyone's responsibility!

1

### Conserving water

- Durham residents are doing their part! In the past 10 years, household water use has declined by 20 per cent while the population grew by 16 per cent. Learn more about conserving water at home by visiting [www.durham.ca/waterefficiency](http://www.durham.ca/waterefficiency).
- The Region is improving water infrastructure so it is sustainable and efficient. Since 2005, 8,000 leak-prone polybutylene water service connections have been replaced.



2

### Working together

- Durham Region helps fund and works with five local conservation authorities to protect our 32 watersheds. Community members are also engaged in helping to protect our watersheds.
- The Durham Region Roundtable on Climate Change is working with local partners to develop a strategy to significantly increase tree cover.
- The Durham Environmental Advisory Committee annually recognizes individual efforts and group projects that protect and enhance our environment, such as stream bank and shoreline restoration projects.



3

### Enjoying our waterfronts

- 268 km of the 350 km Regional trail network provides access to Durham waterways and shorelines including the Lake Ontario Waterfront Trail, Rouge Valley National Urban Park, Darlington Provincial Park, conservation areas and municipal parks.



4

### Preventing pollution

- Durham's 11 water pollution control plants are designed to prevent human waste from entering our local bodies of water.
- The Region has identified protection areas around all 23 Regional wells and six lake-based water intakes to protect the water supply and continuously monitor for pollution.
- In 2013 the Region held 14 special waste collection events, attracting almost 1400 drop-offs, diverting 8 tonnes of hazardous household waste and 34 tonnes of e-waste, preventing it from potentially being poured down a drain or buried in landfill.



5

### Protecting our water's future

- 80 per cent of Durham's geographic area is in the Greenbelt and protected from development. The Regional Official Plan contains a forest cover target of 30 per cent. Over the past six years, woodlands have grown from 24 to 27 per cent of the Region's land, helping to slow run off and retain moisture in the soil.
- Durham's groundwater monitoring program tracks water quantity and quality in 115 observation wells across the region. The Region also has current watershed plans for most of Durham's 32 watersheds, including the 27 that flow off the Oak Ridges Moraine.



6

### Preparing for climate change

- Durham's Community Climate Change Local Action Plan is working towards reducing greenhouse gas emissions—a five per cent reduction by 2015, a 20 per cent reduction by 2020 and an 80 per cent reduction by 2050.
- The Region of Durham is committed to constructing new infrastructure with climate change in mind, while working to reduce energy consumption and our overall environmental footprint.
- In 2009, the Region began a corporate climate change program to identify and implement changes in Regional operations.



## What's your water footprint?

Find out using an on line water calculator such as the one at: [www.home-water-works.org](http://www.home-water-works.org).



# GREAT LAKES & ST. LAWRENCE CITIES INITIATIVE

## 2014 SUSTAINABLE MUNICIPAL WATER MANAGEMENT PUBLIC EVALUATION REPORT

Milwaukee, WI



## MILWAUKEE'S 2014 ASSESSMENT SCORECARD

PRINCIPLES	MILESTONES	PERFORMANCE
1. WATER CONSERVATION AND EFFICIENCY	1.1 Promote Water Conservation	■
	1.2 Set the Price Right	■
	1.3 Minimize Water Loss	■
	1.4 Increase Water Reuse and Recycling	■
2. SHARED WATER STEWARDSHIP	2.1 Raise Public Awareness and Engage the Public	■
	2.2 Report Publicly on Sustainable Municipal Water Performance	■
3. SHORELINE AND WATERWAYS RESTORATION	3.1 Protect and Restore Shorelines / Riparian Corridors and Control Erosion	■
	3.2 Increase Public Access to Shorelines, Riverbanks, and Waterfronts	■
	3.3 Protect Habitats and Biodiversity	■
4. WATER POLLUTION PREVENTION	4.1 Prevent Pollutants from Entering the Stormwater or Sewage Collection System	■
	4.2 Remove Pollutants from Wastewater Treatment Plant Effluent	■
	4.3 Reduce Stormwater from Entering Waterways	■
	4.4 Monitor and Control Sources of Pollution	■
	4.5 Improve Beach Quality	■
5. WATER PROTECTION PLANNING	5.1 Adopt Council-Endorsed Commitment to Sustainable Water Management	◆
	5.2 Integrate Water Policies into Land Use Plan	◆
	5.3 Collaborate on a Watershed-Scale	◆
	5.4 Adopt Green Infrastructure	◆
6. WATER PREPAREDNESS FOR CLIMATE CHANGE	6.1 Conduct a Vulnerability Assessment	◆
	6.2 Address Vulnerability	◆
	6.3 Mitigate Contribution to Climate Change Related to Water Operations	■

GUIDE TO PERFORMANCE INDICATORS		
Trend Indicators	Significant or Continued Progress	■
	Slight or Little Progress	■
	No Progress	■
Status Indicators	Milestone Achieved	◆
	Milestone in Process	◆
	Milestone Not Adopted/Planned	◆



# Montreal

## MILESTONE 1.1 PROMOTE WATER CONSERVATION

Indicator: Change In the Total Volume of Water Produced Annually

### COMMITMENT

- Reduce drinking water production 15% by 2015 compared with 2000 use under the CSSETC's Water Conservation Framework.
- Under the CSSEWC, reduce per-capita water consumption 30% by 2017 compared to 2001.

### HIGHLIGHTS

- Between 2001 and 2012, the Island of Montreal's annual drinking water consumption dropped 12%, from 730 million cubic metres to a bit more than 652 million cubic metres.

- Per-capita drinking water production accordingly fell from 1,120 litres to 834 litres per day. This is a significant 27% reduction, although the Island's population grew 4% over that period.

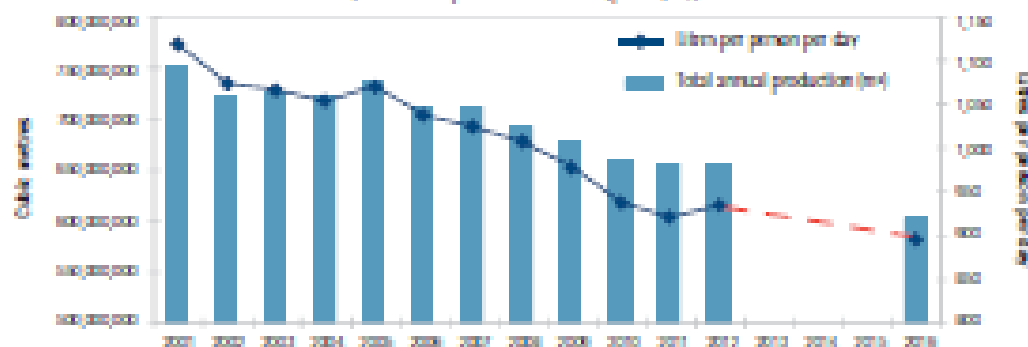
### OUTLOOK

The Montreal Water Strategy employs a variety of initiatives to maintain this downward trend in water production and consumption:

- Systemic detection and repair of leaks throughout the entire system.
- Paced replacement and rehabilitation of water mains to renew 1% of the system per year.

- The Network Optimization and Sectionization Project aimed at regulating pressure more effectively and measuring flow in different sections by 2022. This effort will increase water main service lives and reduce failures.
- Meter installation in industrial, commercial and institutional sectors (ICI) by 2018 to produce water budgets consistent with best practices of the American Water Works Association (AWWA).
- Application of two new water consumption by-laws that have been in effect since July 2012.

Change in Montréal's Drinking Water Production  
(Total annual production and litres/person/day)



### LINKS

2012 Report on Drinking Water Consumption (in French)  
[ville.montreal.qc.ca/pls/portals/4000/page.cas\\_f/mmedia/documents/bilan\\_usage\\_eau\\_potable%202012.pdf](http://ville.montreal.qc.ca/pls/portals/4000/page.cas_f/mmedia/documents/bilan_usage_eau_potable%202012.pdf)

By-Laws on Drinking Water use in Montreal  
[ville.montreal.qc.ca/portals/page?\\_pageid=65017\\_1120167620&\\_dtd=portals\\_schema=PORTAL](http://ville.montreal.qc.ca/portals/page?_pageid=65017_1120167620&_dtd=portals_schema=PORTAL)

# Montreal

#### MILESTONE 4.1 PREVENT POLLUTANTS FROM ENTERING THE SEWAGE COLLECTION SYSTEM

#### 4.1.3 CROSS-CONNECTION DETECTION PROGRAM

Indicator: Progress in Cross-Connection Detection Studies

## COMMITMENT

The city has set up cross-connection detection program to pinpoint sources of domestic sewage in the storm sewer system and make necessary repairs.

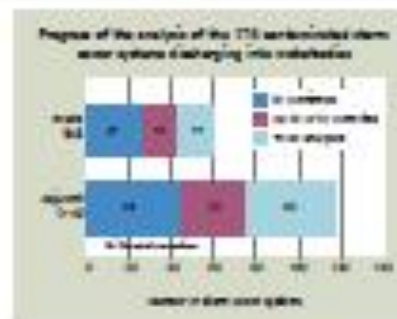
## HIGHLIGHTS

The presence of cross-connections has, to date, been confirmed on 159 storm sewer systems (including 33 in 2012) of a total 176 systems to be checked (among 530 existing systems on the island of Montreal).

This program helps Montreal's boroughs and municipalities to fix cross-connections.

[LINK](#)

Water Monitoring Network—ASMA (in French)  
[www.meridien.fr/23/1902](http://www.meridien.fr/23/1902)



[HARRY SMITH BEARS STRIKE ON THE  
CHURCH, LEAVES THE ROOM AT ONCE.]

[illegible]

The Yellow Fish local program, sponsored by local industrial Canada, is a noncommercial initiative that is freely entered by Citizens. Each spring, community groups come from all over the city to paint symbols on small yellow fish-shaped stone markers. This activity is intended to raise awareness among the population that the discharge of untreated



For more information, visit our website and contact us. For further information, please email: [info@hivinfo.org](mailto:info@hivinfo.org)



# THE CITY OF ST. CATHARINES

## SUSTAINABLE MUNICIPAL WATER MANAGEMENT REPORT



City of St. Catharines  
2013 Report  
Milestones and Indicators

Great Lakes & St. Lawrence Cities Initiative  
Cities Transforming Toward Sustainability (CITTS)  
Sustainable Municipal Water Management Framework (SMWM)

Principle	Milestone	Trends	Comments
WATER CONSERVATION AND EFFICIENCY	1.1: Promote Water Conservation	■	Total water consumption has decreased by 27% since 2003 (10-year period).
	1.2: Install Water Meters	■	St. Catharines is fully metered and has been since the 1980's.
	1.3a: Set the Right Price	■	The Water System Financial Plan's objective when setting the water rates is to be self-sustaining.
	1.4b: Minimize Water Loss	■	None-revenue water is 11% of total consumption (10-year period).
	1.5: Increase Water Reuse and Recycling	■	Not measured.
SHARED WATER STEWARDSHIP	2.1: Raise Public Awareness and Engage the Public	■	The City completed 80 interactive presentations at local schools and reached 2,048 students (2013).
	2.2: Public Reporting on Municipal Water Performance	■	In 2013 reports include the Annual Drinking Water Report, Annual Infrastructure Reports and Asset Management Report.
SHORELINE AND WATERWAYS RESTORATION SHORELINES, WATERWAYS	3.1: Protect and Restore Shorelines/Riparian Corridors and Control Erosion	■	Approximately 75% of the Lake Ontario shoreline is protected, this includes the urban and rural areas.
	3.2: Increase Public Access to Shorelines, Riverbanks and Waterfronts	■	Over 81% of the Lake Ontario shoreline has public access, this does not include the rural areas (urban only).
	3.3: Protect Habitats and Biodiversity	■	More than 275 hectares of Areas of Natural and Scientific Interest (ANSI) are protected in the Official Plan
WATER POLLUTION PREVENTION	4.1: Prevent Pollutants from Entering the Sewage Collection System	■	Not applicable. Wastewater treatment is performed by the Region of Niagara.
	4.2: Reduce Pollutants from Wastewater Treatment Plant Effluent	■	Not applicable. Wastewater treatment is performed by the Region of Niagara.
	4.3: Reduce Stormwater Entering Waterways	■	Recent improvements include the installation of oil/grit separators, a permeable pavement pilot site and better use of road salt.
	4.4: Monitor Waterways and Sources of Pollution	■	St. Catharines has an extensive monitoring program which includes a rain gauge network, sewer flow monitors and staff who collect samples from Lake Ontario, local watercourses and sewers. Through the Niagara Water Strategy St. Catharines also shares data and information with its partners including the Region of Niagara, Ministry of the Environment, University researchers and the Niagara Peninsula Conservation Authority.
	4.5: Improve Beach Quality	■	Not applicable. Beach monitoring is performed by the Region of Niagara
	4.6: Reduce Sodium Chloride Entering Waterways	■	A Road Salt Management Plan was approved by Council in 2008.
WATER PROTECTION PLANNING	5.1: Adopt Council-endorsed Commitment to Sustainable Water Management	■	The Integrated Community Strategic Plan (ICSP) identified Water Protection and Conservation as important objectives that must be met in order for St. Catharines to be sustainable. Also Council approved participating in the GLSLCI Green CITTS Program.
	5.2: Integrate Water Policies into Land Use Plan	■	The Garden City Plan (Official Plan) has a strong emphasis on protecting water resources.
	5.3: Collaborate on a Watershed-Scale	■	A watershed plan is in place already for the 12 Mile Creek Watershed (encompassing the majority of St. Catharines).
	5.4: Adopt Green Infrastructure	■	Several Pilot projects including a permeable pavement pilot site, green roof at the Museum and LEEDS designs at new City buildings. As well the Official Plan specifically requires Stormwater Management Plans to consider alternative approaches to traditional stormwater management such as Low Impact Development (i.e. Green Infrastructure) practices.
WATER PREPAREDNESS FOR CLIMATE CHANGE	6.1: Conduct a Vulnerability Assessment	■	The ICSP identified Climate Change as one of the major challenges the City will face in the future.
	6.2: Address Vulnerability	■	The Emergency Plan covers natural disasters and public health emergencies.
	6.3: Reduce Greenhouse Gas Emissions	■	St. Catharines has prepared an annual electricity and greenhouse gas emission report and is developing a five-year energy conservation and demand management plan. Some of the actions are not applicable (e.g. co-generation) as wastewater treatment is performed by the Region of Niagara.

# Spreading SMWM reporting across the Basin

- SMWM Framework is the only municipal water management framework of its kind in North America
- Interest in SMWM Framework from other water-based organisations, e.g. California Utilities Association.
- Encourage more members to undertake tracking and reporting on SMWM progress, every 1-2 years.
- Help make the SMWM Framework the standard for municipal reporting on water management



# Report, Guide and Best Practices

To see samples of the reports, please visit the booth during the coffee break after this session.

To view the SMWM guide and city reports, please visit:

[www.glslcities.org/initiatives/greencities/smwm.cfm](http://www.glslcities.org/initiatives/greencities/smwm.cfm)

