

Great Lakes & St. Lawrence Cities Initiative

2014 Sustainable Municipal Water Management Public Evaluation Report

Evanston, Illinois
September, 2014



City of
Evanston™



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BACKGROUND

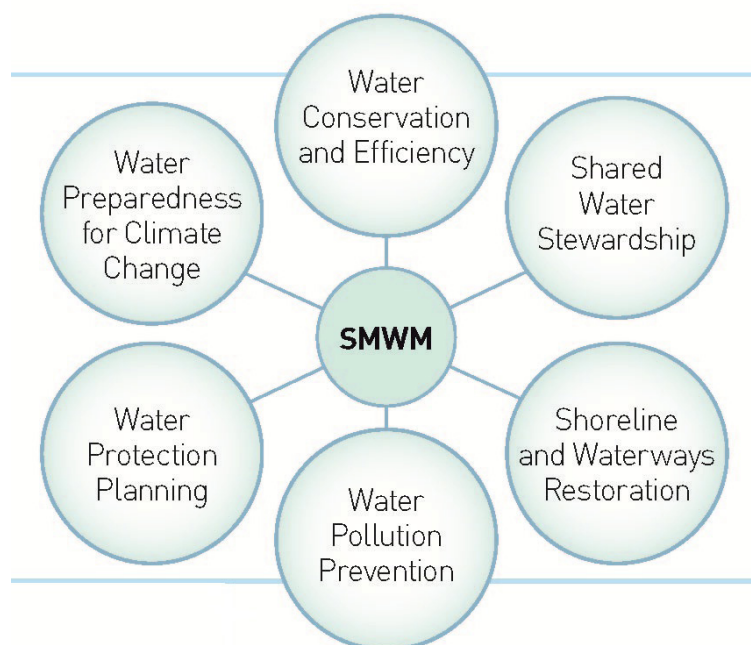
The Great Lakes and St. Lawrence Cities Initiative (GLSLCI) is a binational coalition of mayors and other local officials that works actively with federal, state, and provincial governments to advance the protection and restoration of the Great Lakes and St. Lawrence River. Evanston became a member of GLSLCI in 2007.

In 2012, the organizations and its members adopted a Declaration of Sustainable Municipal Water Management, providing a scorecard for members to report publicly on progress towards achieving effective management in six areas of performance related to water. The six principles of sustainable municipal water management are:











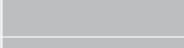
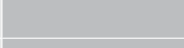













1. **WATER CONSERVATION AND EFFICIENCY**
2. **SHARED WATER STEWARDSHIP**
3. **SHORELINE AND WATERWAYS RESTORATION**
4. **WATER POLLUTION PREVENTION**
5. **WATER PROTECTION PLANNING**
6. **WATER PREPAREDNESS FOR CLIMATE CHANGE**

Within the six principles are 25 individual milestones that cut across traditional municipal delivery areas, from water and wastewater services, land use planning, parks and recreation, and financing. By evaluating best management practices in all of these areas, a municipality can report a complete picture of integrated sustainable water management.

Evanston is a community that has historically recognized the importance of all of these factors in protecting area waterways and in maintaining a good quality of life for the community. Not only do government services, such as recycling and stormwater management, provide a strong backbone of source water protection, but an engaged and active community also does its part to preserve and maintain the area's natural habitats and waterways. This partnership of community and government working together is critical in Evanston providing sustainable water management now and for the generations to come.







SUSTAINABLE WATER SCORECARD




Principles		Milestone	Rating
1. WATER CONSERVATION AND EFFICIENCY	1.1	Promote water conservation	
	1.2	Install water meters	
	1.3	Set the right price	
	1.4	Minimize water loss	
	1.5	Increase water reuse and recycling	
2. SHARED WATER STEWARDSHIP	2.1	Raise public awareness	
	2.2	Engage the public	
3. SHORELINE AND WATERWAYS RESTORATION	3.1	Protect and restore shorelines and riparian corridors, and control erosion	
	3.2	Increase public access to shorelines, riverbanks, and waterfronts	
	3.3	Protect habitats	
4. WATER POLLUTION PREVENTION	4.1	Prevent pollutants from entering the sewage collection system	
	4.2	Remove pollutants from wastewater treatment plant effluent	
	4.3	Reduce stormwater entering waterways	
	4.4	Monitor and respond to sources of pollution	
	4.5	Improve beach quality	
	4.6	Reduce sodium chloride entering waterways	
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	
	5.5	Value ecological functions	
6. WATER PREPAREDNESS FOR CLIMATE CHANGE	6.1	Conduct a vulnerability assessment	
	6.2	Address vulnerability	
	6.3	Adapt emergency response plan	
	6.4	Mitigate contribution to climate change	

LEGEND

Trend Indicators

	Significant progress
	Some progress/initiative started
	Not Started
	Not applicable

Status Indicators

	Milestone adopted or completed
	Milestone being adopted
	Milestone not started

PRINCIPLE 1: WATER CONSERVATION AND EFFICIENCY

Water conservation and efficiency is the cornerstone of sustainable water management. Municipalities can become powerful advocates for water stewardship by encouraging behaviors and promoting technologies that reduce water use. Accurate water metering and periodic leak monitoring help municipalities minimize unaccounted for and wasted water. Full-cost pricing for water in which rates include all operation, maintenance, and capital costs helps the public to value water appropriately and enables the municipality to collect revenue adequate to ensure sustainable operation and maintenance of the water system.

Milestone 1.1 Promote Water Conservation

Indicator: Volume of Water Consumed Per Person Per Day
 Status: **Substantial progress**
 Goal: Six percent reduction in water pumpage and per capita water consumption (5-year moving average) by 2020 from baseline year of 2010

2013 Metric: A 3% reduction in water pumpage and per capita water consumption from 2010 to 2013

COMMITMENT

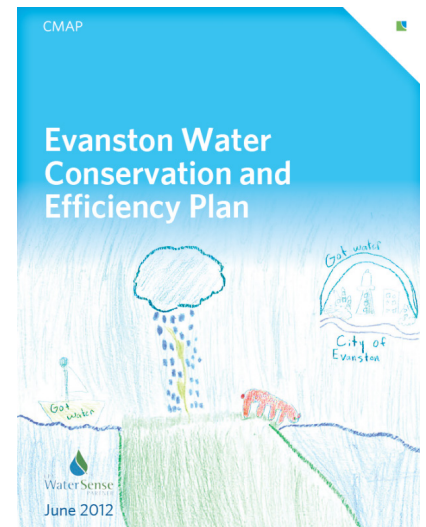
Evanston continues to promote decreases in water uses through public outreach programs and education of consumers.

HIGHLIGHTS

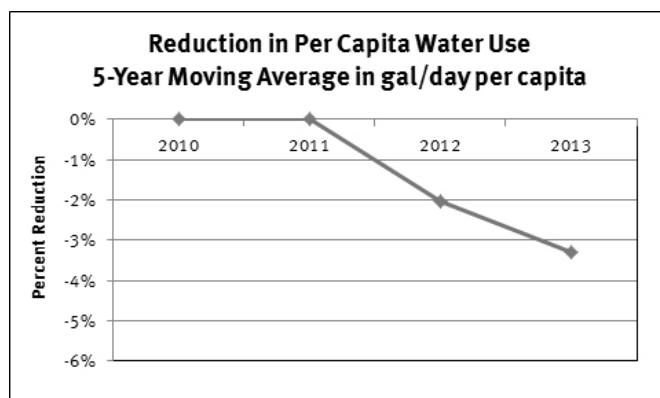
- In 2012, Evanston completed the Water Conservation and Efficiency Plan through a grant with Chicago Metropolitan Agency for Planning. Evanston continues to implement the recommendations outlined in the plan.
- In 2009, Evanston became a WaterSense partner. Since then, Evanston has helped residents reduce their water use and their utility bills by providing public education on the WaterSense certification, promoting the use of WaterSense fixtures, and encouraging residents to find and stop water leaks in their homes.
- Both indicators have decreased 3% since 2010, representing half of the City's 2020 goal of a 6% reduction.

OUTLOOK

- Evanston continues to reduce water consumption through public education on water conservation practices and the promotion of WaterSense fixtures.
- Evanston plans to implement a high efficiency toilet replacement program for low-income residents in 2015.



Evanston has worked continuously since 2012 to implement plan recommendations.



Evanston was already half way to the 2020 goal of 6% water use reduction by the end of 2013.

Milestone 1.2 Install Water Meters

Indicator: Percentage of Users on Water Meters

Status: **Substantial progress**

Goal: 100%

2013 Metric: 100%

COMMITMENT

Evanston requires water meters for all customers.

HIGHLIGHTS

- In addition to requiring water meters for all customers, Evanston collects water meter reads using a fixed network Advanced Meter Information (AMI) system. This system allows Evanston to avoid estimated water bills and more quickly identify potential leaks at customer properties. Installation of a new AMI system will be complete by the end of 2014 (replaces the original system installed in 2002).
- In conjunction with the AMI project, Evanston has replaced approximately 10% of the oldest existing water meters over the last two years.
- Large meters (3" and larger) are tested and repaired (if needed) every 1-2 years to maintain accuracy.

OUTLOOK

- Evanston will continue to require 100% water metering.
- A long-term water meter replacement program is under development, which will replace all water meters on a prescribed cycle to maximize accurate end-use metering.
- A customer portal that will allow residents to track their water use from home is currently under development and will be implemented by early 2015.



Use of an AMI system allows Evanston to collect daily water meter readings from every customer.

Milestone 1.3 Set the Right Price

Indicator: Total Costs ÷ Total Water Operating Revenues
 Status: **In progress**
 Goal: Target Value of 1.0
 2013 Metric: 1.23

COMMITMENT

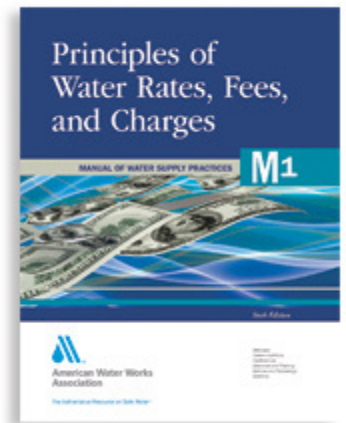
Evanston performs a cost-of-service water rate analysis each year in order to determine the true cost of providing water. The cost of service analysis uses the methodology outlined in the American Water Works Association Manual M1: Principles of Water Rates, Fees and Charges.

HIGHLIGHTS

- Evanston implemented water rate increases in 2011 (10%), 2012 (5%), 2013 (3%), and 2014 (10%) in order to approach true-cost pricing and reduce the bond issues necessary to implement the capital improvement program.
- Evanston publishes an annual report documenting the water and wastewater operation and maintenance activities and associated costs for each year.
- Indicator value was 1.38 for FY 2012 and 1.23 for FY 2013.
- While the FY 2013 metric value of 1.23 indicates that Evanston does rely on the sale of bonds to finance capital improvements, the reduction from FY 2012 to FY 2013 demonstrates a move toward full cost pricing.

OUTLOOK

- Evanston is proposing water rate increases of 10% in 2015 and 10% in 2016 in order to continue to approach true-cost pricing.



AWWA's M1 is the water industry standard for full cost pricing.

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Milestone 1.4 Minimize Water Loss

Indicator: Non-revenue Water ÷ Total Water Produced

Status: **Substantial progress**

Goal: Non-revenue water limited to 10% or less of total water produced

2013 Metric: 13%

COMMITMENT

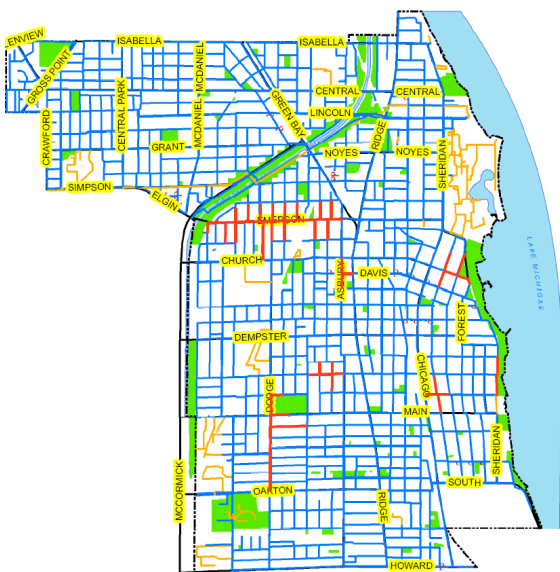
Evanston will reduce leaks and investigate other methods of reducing non-revenue water.

HIGHLIGHTS

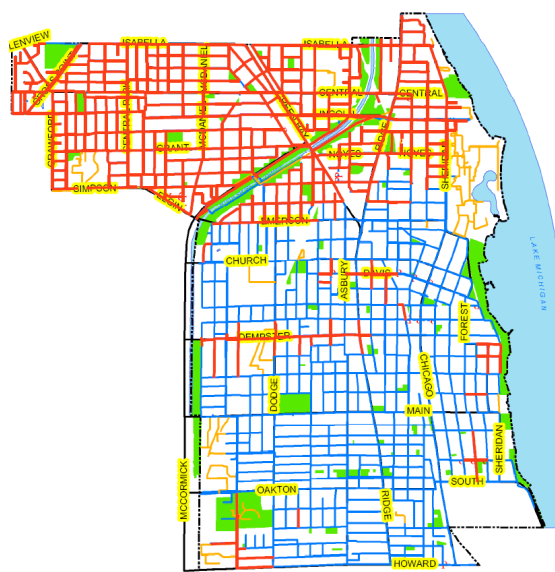
- In 2013, Evanston implemented a leak detection program, using leak loggers to evaluate each water main in Evanston over a 2-year period. Since beginning the enhanced leak detection program in mid-2013, a total of 3 main breaks and 5 service leaks were found. This eliminated an estimated of 18 MG/year in leaks.
- Evanston targets replacing 1% (approximately 1.5 miles) of older water main a year to improve the integrity of the system. In 2013, Evanston replaced 1.8 miles.

OUTLOOK

- Beginning in 2015, Evanston will survey 100% of the distribution system for leaks annually.
- Evanston will conduct an annual water loss audit in accordance with the American Water Works Association's Manual 36, to identify other focus areas for reducing non-revenue water.



Leak detection completed in 2012 (red) under previous (limited) leak detection program.



Leak detection completed in 2013 (red) using new leak detection equipment. Pipes shown in blue will all be surveyed for leaks by the end of 2014.

Milestone 1.5 Increase Water Reuse and Recycling

Indicator: Estimate of Total Reused or Recycled Water Through Municipal Initiatives

Status: **In progress**

Goal: Increase annual amount of stormwater used to replace potable water use

2013 Metric: Approximately 1 MG of potable water replaced with stored rainwater annually

COMMITMENT

Evanston uses public education to encourage the reuse of stored stormwater for irrigation.

HIGHLIGHTS

- The MWRD provides low-cost rain barrels to residents to store stormwater and utilize it for lawn and landscaping irrigation.
- Evanston promotes the use of rain barrels by providing them at cost to the residents and offering classes to the public on their effective use and maintenance.

OUTLOOK

- Evanston will continue to provide support and education on the use of residential rain barrels.
- In 2015, Evanston is investigating methods of using stored stormwater to provide irrigation at public facilities.



Rain barrels are in use at many residences in Evanston to reduce reliance on potable water for landscape irrigation.

PRINCIPLE 2: SHARED WATER STEWARDSHIP

Evanston is rich in water resources, but the quality and quantity of these resources cannot be maintained without shared water stewardship. Sustainable management depends on the actions of the entire community, not just the local government. Evanston is working to educate and engage citizens of all ages and socioeconomic status on water issues. This provides the residents not only with the tools needed to act as a steward of water resources, but also the information and the involvement opportunities needed to reduce utility bills and protect personal and community property from damage caused by stormwater.

Milestone 2.1 Raise Public Awareness

Indicator: Have a public outreach campaign
Status: **Milestone achieved**

COMMITMENT

Evanston continues to promote public awareness of water use and stormwater management issues.

HIGHLIGHTS

- In 2012, Evanston completed the Water Conservation and Efficiency Plan through a grant with Chicago Metropolitan Agency for Planning. Evanston continues to implement the recommendations outlined in the plan.
- In 2009, Evanston became a WaterSense partner. Since then, Evanston has helped residents reduce their water use and their utility bills by providing public education on the WaterSense brand, promoting the use of WaterSense fixtures, and encouraging residents to find and stop water leaks in their homes.
- In 2014, Evanston is rebranding a variety of drinking water and stormwater education initiatives into part of the global Evanston Livability Plan. Called Drinkability (for drinking water initiatives) and Habitability (for stormwater management initiatives), these initiatives focus on making the public aware of how their own water-related actions can have a direct impact on their personal quality of life and that of their community.

OUTLOOK

- While Evanston has a robust public education program in place, the City is expanding the program to target all socioeconomic groups.
- By incorporating water and stormwater management into the Evanston Livability Plan, Evanston is promoting the idea that water stewardship is a critical part of the community's quality of life.



The Evanston Tap Water Station is set up at community events to promote tap water and educate residents on water conservation practices.



The Utilities Dept. hosted an activity station at Evanston's 2013 Green Living Festival to educate residents about retrofitting toilets to dual flush, testing for leaks, and purchasing WaterSense bathroom fixtures.



Milestone 2.2 Engage the Public

Indicator: Number of citizens involved in municipally-supported events or activities related to water protection.

Status: **Substantial progress**

Goal: Increase the number of citizens engaged in municipally-supported water and stormwater management events or activities

2013 Metric: 1,700 number of citizens engaged in municipally-supported water and stormwater management events or activities



In July 2014, Evanston hosted a public open house at the water plant, attended by over 150 Evanston residents, to celebrate the 100-year anniversary of the City's original filtration plant and provide tours of the water plant.

COMMITMENT

Evanston will continue to engage the public as active partners in conserving water and managing stormwater quality and quantities.

HIGHLIGHTS

- Evanston residents actively participate in many organizations whose efforts directly impact the practice of water conservation and stormwater management among community members. In 2013, an estimated 850 people participated in groups such as the Utilities Commission, the Environment Board, the Evanston Environmental Association, the Citizens for Greener Evanston, TreeKeepers, Friends of the Chicago River, and others.
- Evanston residents regularly participate in habitat cleanups at area parks, along the Chicago River, and along the shoreline of Lake Michigan. In 2013, an estimated 350 people participated in cleanup events throughout the year.
- For the last several years, the Utilities Department has hosted public tours of the water treatment plant twice per year, as well as hosting tours for private groups on a periodic basis. In 2013, approximately 500 residents of all ages participated in tours.
- In 2014, Evanston hosted a community-wide cleanup event as part of the Earth Day/Arbor Day Festival.

OUTLOOK

- Utilities Department will continue to host public tours of the water treatment plant twice per year.
- In 2015, Evanston will be expanding the number community-wide cleanup events, hosting an event in spring, summer and fall.
- In 2014 - 2015, Evanston will partner with community groups and the school district to provide Pipes to Precipitation, an education program for elementary students on total water footprint.

PRINCIPLE 3: SHORELINE AND WATERWAYS RESTORATION

Evanston’s wealth of available shorelines along Lake Michigan and the North Branch of the Chicago River provide valuable natural habitat and recreational activities. In addition to providing critical space for local and migrating species, natural areas retain and filter stormwater, protect shorelines from erosion, reduce the risk of flooding, and enhance the urban environment.

Milestone 3.1 Protect and Restore Shorelines and Riparian Corridors, and Control Erosion

Indicator: Maintain length of shoreline as green space/natural habitat
Status: **Substantial progress**
Goal: Maintain 75% of shoreline as green space/natural habitat
2013 Metric: Maintain 77% of shoreline as green space/natural habitat

COMMITMENT

Evanston will continue to maintain 77% of shoreline as natural habitat, providing a riparian buffer zone.

HIGHLIGHTS

- Evanston has shoreline bordering several bodies of water. Much of this shoreline is preserved as natural habitat, green space, or beach. This provides a riparian buffer zone (an area of natural vegetation) along the waterways. Riparian buffer zones are important for good water quality. They prevent sediment, nitrogen, phosphorus, pesticides, and other pollutants from reaching the waterway, and provide valuable habitat for wildlife. They also reduce flooding, slowing stormwater runoff and allowing it to soak into the ground and recharge groundwater.

Body of Water	Total Miles of Shoreline	Miles of Shoreline as Natural Habitat
Lake Michigan	4.38	2.22
Chicago River	4.75	4.75
Lovelace Pond	0.16	0.16
Total	9.29	7.13

OUTLOOK

- Evanston is fortunate in the sheer amount of natural habitat bordering its waterways. Evanston remains committed to improving the quality of the habitat, particularly in the Ladd Arboretum, a City park bordering the Chicago River. Habitat improvement projects, including invasive species removal and establishment of habitat areas focused on specific species preservation continue to be implemented on an annual basis.



Milestone 3.2 Increase Public Access to Shorelines, River Banks and Waterfronts

Indicator: Length of shoreline and/or river bank with public access

Status: **Substantial progress**

Goal: Maintain 75% of shoreline with public access

Metric: Maintain 77% of shoreline with public access

COMMITMENT

Evanston will continue to maintain a minimum of 77% of shoreline with public access.

HIGHLIGHTS

- Evanston provides public access to the shorelines of all of its bodies of water.
- In addition to making public access available, Evanston provides a number of programs to encourage public interaction with the waterways. These programs promote physical fitness, emotional well-being, and family bonding. They also encourage an appreciation of natural resources and a desire to protect the natural and historic heritage of the City. Programs include canoeing, catch-and-release fishing, environmental education, boating, and camping.

Body of Water	Total Miles of Shoreline	Miles of Shoreline with Public Access
Lake Michigan	4.38	2.22
Chicago River	4.75	4.75
Lovelace Pond	0.16	0.16
Total	9.29	7.13

OUTLOOK

- Evanston continues to maintain a commitment to public access of the waterways, through preservation of public beaches, environmental education programs and through programming targeted to physical activities located within the waterways and surrounding habitats.

Photos: "The Last Rowers" by Silvio Ribeiro (prev. page); Untitled by Samuel Gonzalez (this page)



Milestone 3.3 Protect Habitats

Indicator: Area of protected habitats

Status: **Substantial progress**

Goal: No decrease of land area in Evanston maintained as protected habitat and connected riparian corridors

2013 Metric: 9% of land area maintained as protected habitat and connected riparian corridors

COMMITMENT

Protected habitats, urban green space, natural areas adjacent to waterways, and connected riparian corridors play a vital role in providing local wildlife with the resources necessary to thrive in an urban environment, as well as supporting migration of non-local species. Evanston will maintain at least 9.4% of land area as protected habitat and connected riparian corridor.

HIGHLIGHTS

- Evanston maintains a connected riparian corridor along the Chicago River with areas of public park and natural habitat. This is coordinated with surrounding communities to create a larger natural corridor extending beyond the borders of the community. The Evanston portion of the corridor is 108.4 acres.
- Dwight Perkins Woods, located in northwest Evanston, provides 7.5 acres of natural habitat within the urban environment. Part of the Cook County Forest Preserve District, this original native wetland provides an important stopover for migrating birds as well as providing a local area for stormwater runoff to naturally infiltrate into the ground.
- An undisturbed natural beachfront area located in north Evanston provides 2.4 acres of habitat for migrating birds and local wildlife adjacent to Lake Michigan.
- A corridor of green space and beaches along Lake Michigan provide 62.1 acres of valuable connected space for migrating birds.
- Evanston maintains two large parks and 87 smaller parks that provide critical urban habitats for local wildlife species and migrating birds. This includes an additional 297.8 acres.

OUTLOOK

- Recognizing the importance of protected habitats and riparian corridors, Evanston will continue to maintain protected natural space, including areas along waterways that provide critical natural connected areas for local and migrating species.

Photo: "Perkins Woods Forest Preserve in Evanston" by Angela Valavanis



PRINCIPLE 4: WATER POLLUTION PREVENTION

Lake Michigan and the Chicago River provide many benefits to Evanston – recreation, natural habitat and, in the case of Lake Michigan, drinking water. However, protecting these assets from pollution is far from simple. Both single-point and non-point pollution sources can have big impacts, and it takes stewardship by Evanston, its partner organizations, and the residents of the City to maintain these assets for the benefit of our community. In this effort, Evanston’s partner, the Metropolitan Water Reclamation District of Greater Chicago (MWRD), provides all wastewater treatment and manages combined sewer overflows for the region.

Milestone 4.1 Prevent Pollutants from Entering the Sewage Collection System

Indicator: Change in concentration of contaminants in wastewater
Status: **Not applicable**
Metric: This indicator is addressed by Evanston’s partner agency, MWRD.

Milestone 4.2 Remove Pollutants from Wastewater Treatment Plant Effluent

Indicator: Improvements to the quality of treated wastewater effluent, including contaminants of emerging concern
Status: **Not applicable**
Metric: This indicator is addressed by Evanston’s partner agency, MWRD.

Milestone 4.3 Reduce Stormwater Entering Waterways

Indicator: Reduction in the number of combined sewer overflows entering receiving waters
Status: **Not applicable**
Metric: This indicator is addressed by Evanston’s partner agency, MWRD.

Milestone 4.4 Monitor and Respond to Sources of Pollution

Indicator: Adoption of a regular monitoring system for common water quality parameters in sources of drinking water and/or surface waterways, and a response protocol in the event of a detected pollution event.

Status: **Milestone achieved**

COMMITMENT

Evanston performs comprehensive testing of water at its source, throughout the treatment process and at the point of delivery to verify that clean, safe and reliable water is continuously delivered to all residents and customers.

Evanston tests for numerous contaminants, over and above what is required by regulatory agencies.

Evanston monitors for pollution events and adjusts water treatment accordingly.

HIGHLIGHTS

- In 2013, Evanston tested for the presence of 80 contaminants in the Lake Michigan source water. This list includes not only testing required by federal and state regulations, but also included testing for contaminants such as those found in personal care products (PCPs) as well as known endocrine disrupting compounds (EDCs).
- At the water treatment plant, Evanston utilizes both continuous online monitoring and grab samples to determine that each step of the treatment process is working effectively.
- Each month, Evanston tests 80 point-of-delivery locations throughout the 157 miles of water mains within the city to ensure that water is being delivered safely throughout the entire system.
- In 2013, the Evanston water quality laboratory received its biannual certification from the Illinois Department of Public Health with zero deviations in quality – the fourth time in a row the laboratory has achieved this distinction.
- Evanston works with partner agencies, such as U.S. Coast Guard, to monitor for pollution events. When events occur, the water treatment plant increases water quality monitoring and adjusts the treatment process in response to the specific hazard.

OUTLOOK

- Evanston is committed to providing clean, safe, and reliable drinking water in compliance with state and federal regulations through the use of water quality monitoring and effective treatment.



Evanston tested for the presence of 80 contaminants in our source water in 2013.

Milestone 4.5 Improve Beach Quality

Indicator:	Maximize the number of days municipal beaches are open or declared safe for swimming during the summer season
Status:	Substantial progress
Goal:	Evanston public beaches swimmable 85% of beach season (Memorial Day Weekend – Labor Day Weekend)
2014 Metric:	Evanston public beaches were swimmable 87% of beach season (Memorial Day Weekend – Labor Day Weekend) in 2014

COMMITMENT

Evanston monitors Lake Michigan water quality daily during the swimming season for and uses documented guidelines to determine if lake water is swimmable. Information is posted daily during the summer swimming season and is also communicated electronically via the City's web site and social media.

HIGHLIGHTS

- Litter pickup is completed daily during summer when the beaches are open to the public.
- Evanston regrades public beaches and replenishes the sand annually. This redistributes sand that has naturally drifted and provides each beach a downward slope into the water. This prevents water from stagnating and assists in keeping the beaches clean of natural debris. Beaches are groomed daily during the swimming season to collect garbage and debris.
- Evanston hosts an annual volunteer beach cleanup each September.
- In 2013, Evanston began using a new testing protocol to determine the real-time swimmability of beaches. Water quality is tested daily and input into a predictive model utilizing real-time weather information and past history to determine if beach is swimmable.

OUTLOOK

- Evanston continues to implement green infrastructure and other improvements to reduce stormwater runoff and improve the quality of the water near the beaches.

Photo: "Dog Day Afternoon" by Louis Perlia



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Milestone 4.6 Reduce Sodium Chloride Entering Waterways

Indicator: Adoption of a road salt management plan that protects soil and waterways

Status: **Milestone achieved**

COMMITMENT

Evanston will manage salt use to minimize the amount of salt used for snow and ice management.

HIGHLIGHTS

- Evanston tailors salt use to individual snow events, making sure that salt is only applied in the locations needed, depending on the amount and type of snow and ice received.
- A brine solution is used as an anti-icing agent to increase the effectiveness of the salt. Brine is applied prior to snow events, minimizing adherence of snow and ice to the road surface and allowing less salt to be used during later passes.
- Evanston salt spreaders are computer-controlled ground driven spreaders so that no salt is applied unless the vehicle is in motion. Salt is then applied at a computer-controlled rate adjusted by the speed of the vehicle.
- Agricultural byproducts, such as beet juice, are used as cold weather enhancement to increase the effectiveness of salt at lower temperature ranges.

OUTLOOK

- Evanston is investigating the use of new application technologies, such as applying the salt as a slurry, in order to reduce the amount of salt used in each snow event.



PRINCIPLE 5: WATER PROTECTION PLANNING

Non-point source pollution, such as urban stormwater runoff, is recognized as a major source of pollutants in waterways. As a result, land-use planning and management is increasingly seen as an integral part of a municipal water protection strategy. Evanston has a history of investing in maintaining natural riparian corridors along its shorelines and other areas of natural habitat and green space. However, in the last decade, Evanston has increased its focus on building green infrastructure into both public and private projects. The Evanston Stormwater Control Ordinance requires that all new developments and certain larger redevelopments must retain and manage stormwater within the property lines. The Evanston Green Building Ordinance requires commercial and multi-family construction to obtain a LEED Silver rating or employ sustainable building measures from an alternate list. Most recently, Evanston adopted the Complete & Green Network Approach Resolution requiring the city to evaluate all projects occurring in the public right-of-way or on city property for the opportunity to include stormwater infiltration techniques. This strong commitment to sustainable building and infrastructure provides critical protections to Evanston's surrounding waterways.

Milestone 5.1 Adopt Council-Endorsed Commitment to Sustainable Water management

Indicator: Adoption of a vision for sustainable municipal water management by municipal council

Status: **Milestone achieved**

COMMITMENT

Evanston's City Council will continue to prioritize water efficiency and conservation and stormwater management in their governance.

HIGHLIGHTS

- The Complete & Green Network Approach Resolution, enacted in 2014, requires public projects to evaluate stormwater infiltration opportunities.
- Evanston City Council adopted the Water Conservation and Efficiency Plan in 2012 and has provided funding and support for the implementation of its recommendations.
- The Stormwater Control Ordinance requires all larger private development projects to manage stormwater onsite.

OUTLOOK

- Evanston will provide an annual update of progress on sustainable water management activities.

Milestone 5.2 Integrate Water Policies Into Land Use Plan

Indicator: Integration of sustainable water management objectives into a municipality's land use plan

Status: **Milestone achieved**

COMMITMENT

Evanston has a strong commitment to incorporating sustainable building practices into both public and private development, including those practices related to water efficiency and stormwater management.

HIGHLIGHTS

- The Evanston Stormwater Control Ordinance requires that all new developments and certain larger redevelopments must retain stormwater on the property, either through storage or through green infrastructure and then infiltrate it back into the ground or limit the rate of release into the sewer system.
- The Evanston Green Building Ordinance requires that for new construction and additions, projects greater than 20,000 square feet must obtain a LEED Silver rating or higher. Projects between 10,000 and 20,000 square feet must either obtain at least a LEED Silver Rating or employ eight or more measures from at least five of the eight major categories in the Evanston Sustainable Building Measures for New Construction list. Interior renovations must meet similar requirements.
- Evanston has an Erosion Control Policy that requires sites with greater than 5,000 square feet of disturbance to develop a Stormwater Pollution Prevention Plan and implement stormwater management best management practices during construction.

OUTLOOK

- The MWRD adopted a Watershed Management Ordinance (WMO) in 2013, which Evanston must comply with. Evanston is in the process of transforming the Erosion Control Policy into an ordinance to comply with the WMO and refining specific requirements needed to effectively manage stormwater within Evanston.



Evanston Fire Station #5 was the first fire station in Illinois to receive a LEED Gold certification.

Milestone 5.3 Collaborate on a Watershed-Scale Management Approach

Indicator: The municipality currently participates in the development or implementation of watershed-scale water management plan(s)

Status: **Milestone achieved**

COMMITMENT

Evanston will be an active partner with organizations such as MWRD and IDNR that are working towards sustainable water management in the Northern Illinois and Chicago Metropolitan regions.

HIGHLIGHTS

- The MWRD adopted a Watershed Management Ordinance (WMO) in 2013, which provides legal requirements for implementing stormwater management Best Management Practices (BMPs). Evanston was a partner in developing the draft ordinance, providing reviews and comments.
- The Illinois Department of Natural Resources (IDNR) is in the process of promulgating new rules for calculations of unaccounted-for and non-revenue water. Evanston has been a strong advocate with area communities for providing organized recommendations on how new regulations can be implemented practically, successfully meeting the goals of the new rules.

OUTLOOK

- Evanston is working to fully implement the WMO adopted by the MWRD. However, Evanston is also looking at updating the city's Erosion Control Policy to meet and exceed the requirements of the WMO in order to effectively manage stormwater within Evanston.

Milestone 5.4 Adopt Green Infrastructure

Indicator: Objective or policy adopted by a municipality to encourage the use of green infrastructure

Status: **Milestone achieved**

COMMITMENT

Evanston will promote the use of sustainable practices and green infrastructure in both public and private development.

HIGHLIGHTS

- Evanston has adopted the Green Building Ordinance requiring projects greater than 20,000 square feet in size to obtain a LEED silver rating or higher. Smaller projects may obtain a LEED silver rating or implement alternative green building measures.
- In 2014, Evanston adopted the Complete & Green Network Approach Resolution. This requires the city evaluate all projects occurring in the public right-of-way or on city property for the opportunity to include stormwater infiltration techniques. These will be incorporated into the design where appropriate.
- Evanston's Stormwater Control Ordinance requires properties undergoing significant improvements to retain stormwater within a property, strongly encourages the use of green infrastructure element to infiltrate some or all of the stormwater back into the ground.



Green construction elements, such as the use of permeable pavement in alleys, are being incorporated into new development projects.

OUTLOOK

- Moving forward, Evanston is committed to not only requiring private developments to install green infrastructure, but also to installing green infrastructure on at least one publicly funded project as well. Recent projects include the installation of porous concrete and asphalt pavement and porous concrete sidewalks.
- Evanston is also committed to making projects geographically diverse, working to ensure that green infrastructure is installed in all areas of the city.

Milestone 5.5 Value Ecological Functions

Indicator: Consideration of the value of ecological services in land use decision making affecting sustainable municipal water management

Status: **Milestone achieved**

COMMITMENT

Evanston is strongly committed to maintaining its urban forest and providing natural green space to all residents.

HIGHLIGHTS

- Evanston is consistently recognized as a Tree City USA by the Arbor Day Foundation, which requires the City demonstrate that it has a viable and effective tree management plan and program.
- Evanston residents recently started a TreeKeepers program, a group that is committed to caring for Evanston's trees by raising awareness of the value of the urban forest and promoting best practices in tree care.
- Evanston maintains 89 parks, including a dedicated forest preserve and other natural habitat.

OUTLOOK

- Evanston is implementing an inventory of the 15,000 public trees and making the information available for public use.

PRINCIPLE 6: WATER PREPAREDNESS FOR CLIMATE CHANGE

Climate change has the potential for huge impacts on source water and stormwater management in the future, but the impacts of climate change are already being felt. Changes in the frequency of precipitation and the increased intensity of storm events are causing extreme weather events to occur more frequently. Potential risks to public infrastructure, private property and the safety of residents must be identified to allow management strategies to be developed.

Milestone 6.1 Conduct a Vulnerability Assessment

Indicator: Assessment of municipal vulnerability associated with climate change completed

Status: **Milestone in progress**

COMMITMENT

Evanston is investigating the local impacts of climate change.

HIGHLIGHTS

- Evanston is working with the University of Michigan to conduct an assessment of the city's vulnerabilities related to climate change.

OUTLOOK

- The University of Michigan vulnerability assessment results are anticipated in early 2015.



Climate change can increase the severity and intensity of storms, leading to localized flooding and significant property damage.

Icing of Evanston's Lake Michigan water intakes in winter is a major climate-related vulnerability that the City is already working to address.

Photo: "Ice on Ice" by Joe Simchak



Milestone 6.2 Address Vulnerability

Indicator: Climate change adaptation plan associated with water resources and operations approved and implementation underway

Status: **Milestone not started**

COMMITMENT

- Evanston will develop a plan to address the local impacts of climate change.

HIGHLIGHTS

- Once the vulnerability assessment is received, Evanston will work towards mitigating the risks posed by ongoing climate change.

OUTLOOK

- Evanston has completed several successful projects to address specific climate change impacts, and the City will work towards a complete plan once the initial assessment is completed by the University of Michigan.



Climate change can increase the severity and intensity of storms, leading to localized flooding and significant property damage.

Milestone 6.3 Adapt Emergency Response Plan

Indicator: Climate change adaptation plan associated with water resources and operations approved and implementation underway

Status: **Milestone not started**

COMMITMENT

Evanston will develop an Emergency Response Plan that includes responding to climate change related events.

HIGHLIGHTS

- Emergency Response Plan will include education on emergency preparedness and a communications plan to alert residents to potential issues.
- Emergency Response Plan will include components related to extreme rain and snow events.

OUTLOOK

- Evanston will work on developing adapted Emergency Response Plan in 2016.



(left) The solar array at the Evanston Water Treatment Plant generates over 30,000 kilowatt-hours of electricity annually, a carbon offset of 21.8 tons/year.

(right) Evanston installs bike racks at City facilities and throughout the downtown to encourage alternative transportation options.



Milestone 6.4 Mitigate Contribution To Climate Change

Indicator: Reduction in greenhouse gases produced through city policies and/or operational changes
Status: **Significant progress**

COMMITMENT

Evanston is reducing the amount of greenhouse gases generated as a result of city operations and residential energy use.

HIGHLIGHTS

- Evanston adopted the Evanston Climate Action Plan (ECAP) in 2008 to reduce greenhouse gas generation by 13% by 2012. Evanston was successful in achieving this goal, reducing municipal operation emissions by 32%.
- Evanston completed an energy audit of the Water Treatment Plant and implemented all cost effective measures.
- In 2014, the Evanston Livability Plan was adopted which included a 20% emission reduction over the baseline year by 2016.
- In 2014, Evanston entered into a 3-year contract to purchase 100% green energy for all city buildings.
- In 2014, Evanston's secured a 3-year contract for 100% green energy for the residential municipal aggregation program.

OUTLOOK

- Evanston remains committed to the purchase of 100% green energy for city facilities and for residents.
- Evanston is developing and implementing a green energy program for mid-sized businesses through partnership with the electricity provider for the residential municipal aggregation program.
- Through increases in bike lanes and extension of public transportation options, Evanston is working to reduce greenhouse gas emissions and improve overall transportation options for the community.
- Evanston has completed energy audits for Fleetwood Jourdain, Ecology, and Levy Senior Centers and will work to implement energy efficiency projects at those facilities. The city is planning to complete energy audits at three additional city facilities in 2015.

ABBREVIATIONS

AMI – Advanced meter information

BMP – Best management practice

ECAP – Evanston Climate Action Plan

EDC – Endocrine disrupting compound

LEED – Leadership in Energy & Environmental Design

GLSLCI – Great Lakes and St. Lawrence Cities Initiative

IDNR – Illinois Department of Natural Resources

MG – Million Gallons

MGD – Million Gallons per Day

MWRD – Metropolitan Water Reclamation District of Greater Chicago

PCP – Personal care products

WMO – Watershed Management Ordinance

DEFINITIONS

Advanced Meter Information System	A method of collecting water meter readings by using a meter information unit to transmit hourly water meter reads via a radio frequency to a remote data collection device.
Complete & Green Network of Streets	A policy of considering environmental sustainability and ease of public access on all projects occurring within the public right-of-way.
Endocrine Disrupting Compound	Chemicals that may interfere with the body's endocrine system and produce adverse developmental, reproductive, neurological and immune effects in both humans and wildlife.
Evanston Climate Action Plan	Developed in 2008, this plan will help the City meet its commitment to reducing its greenhouse gas emissions as a signatory of the US Mayors Climate Protection Agreement. The initial goal was to reduce emissions by 13% by 2012.
Evanston Livability Plan	A plan developed by Sustain Evanston in partnership with the Evanston Office of Sustainability to improve the overall sustainability of the Evanston community. The plan defines ways in which Evanston can be made more livable and focuses on ways to reduce individual and collective carbon footprints within the community.
Green Building Ordinance	Evanston's Green Building Ordinance is designed to improve energy efficiency, reduce the use of materials that aren't sustainably produced, as well as lessen the environmental impact of new construction, additions, and interior renovation projects. Requirements are defined based on the size of the project in square feet and designate that projects either obtain a US Green Building Council LEED Silver Rating or higher or employ a prescribed number of Sustainable Building Measures for New Construction or for Major Renovation Projects as appropriate.

Green Energy	Energy that can be produced in a way that protects the natural environment, for example by using wind, water, rain or the sun.
High Efficiency Toilet	Also known as low flow toilets, these toilets are able to use 1.28 gallons per flush or less, 20% less than the current federal standard of 1.6 gallons per flush. Older toilets use as much as 6 gallons per flush.
LEED Certification	A green building certification program developed by the United States Green Building Council that recognizes best-in-class building strategies and practices. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Levels include Bronze (easiest to achieve), Silver, Gold and Platinum.
Non-Point Source Pollution	Water pollution that is not generated at a single location, such as land runoff or drainage. Contaminants commonly distributed into the urban environment this way include excess fertilizers, oil, sediment from construction activities, road salt, and bacteria from pet wastes.
Non-Revenue Water	Treated water that has been produced and is “lost” before it reaches the customer. This includes losses through leaks, metering inaccuracies or water diverted to the maintenance of the system, such as used in a hydrant testing program.
Personal Care Products	A wide variety of items that are commonly used for health and beauty enhancement. Examples include cosmetics, perfumes, shampoos, toothpastes and skin protectants.
Stormwater Control Ordinance	This ordinance requires that all new developments and certain larger redevelopments must retain stormwater on the property, either through storage or through green infrastructure and then infiltrate it back into the ground or limit the rate of release into the sewer system
Tree City USA	A certification program established by the Arbor Day Foundation in which communities must meet four core standards of a sound urban forestry management program.
Riparian Buffer Zone	The interface between land and a river or stream that includes natural habitat and plant systems. These systems can slow stormwater runoff, allowing infiltration, reducing erosion and absorbing contaminants to protect the river.
Water Operating Revenues	Income derived from the sale of water and other services provided by Water Division staff.
WaterSense	A program sponsored by the Environmental Protection Agency with the goal of protecting the future of the water supply by promoting and enhancing the market for water efficient products and services.
Watershed Management Ordinance	Adopted by the MWRD, this ordinance establishes uniform, minimum, countywide stormwater management regulations throughout Cook County. Components which are regulated under the WMO include drainage and detention, volume control, floodplain management, isolated wetland protection, riparian environment protection, and soil erosion and sediment control.

