

**City of Syracuse**  
**Department of Water**



**Stephanie A. Miner, Mayor**  
**Deborah Somers, Commissioner of Water**

2016 Newsletter



Annual Drinking Water Quality Report for 2016  
(Public Water Supply ID#3304334)



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## **SYRACUSE WATER NEWSLETTER**

The Syracuse Water Newsletter is a publication of the City of Syracuse Department of Water.

This publication contains valuable information about your water system and about the water that the Syracuse Water Department supplies. Information on the FEMA National Flood Insurance Program is also included.

If you would like other information about the City of Syracuse or have a question about City services in general, feel free to phone City Line, 315-448-CITY (2489). You will also find useful information about the City of Syracuse on the worldwide web by logging onto <http://www.syr.gov.net>

**Stephanie A. Miner, Mayor**  
**City of Syracuse**

**May 2016**

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## INTRODUCTION

The Annual Drinking Water Quality Report allows the Syracuse Water Department to provide customers and users of the City of Syracuse water system with useful information about the water system, the quality of the water and about important issues affecting your water supply. This report is prepared pursuant to regulations and guidelines of both the United States Environmental Protection Agency (USEPA) and the NYS Department of Health (NYSDOH).

The City of Syracuse Water Department (SWD) provides retail water service to the entire City of Syracuse. Through wholesale and other service agreements, the SWD also supplies water to portions of the towns of Dewitt, Onondaga, Geddes, Camillus, Skaneateles, Salina, and the villages of Jordan and Elbridge. If you have any questions about the source of your water, check with the water purveyor that sends your water bill and ask for information concerning the source of water that you receive at your home or business.

It should be noted that all drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791) or the Onondaga County Health Department (OCHD) at 315-435-6600.

Some people may be more vulnerable to disease-causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA and the NYSDOH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

In this report we describe your water system and what the Syracuse Water Department is doing to meet federal and state water quality regulations and provide the best quality water we possibly can for you, our customers. If you have any comments about this report, or questions about your water system, please do not hesitate to contact the Syracuse Water Department at 315-473-2609. You may send e-mail to the City of Syracuse through the City's web site, <http://www.syr.gov.net> or mail us through the U.S. Postal Service at 101 North Beech Street, Syracuse New York 13210.

## SYRACUSE WATER SUPPLY AND WATER SYSTEM WATER USE

For 123 years, the primary water supply for the City of Syracuse has been Skaneateles Lake, a "Finger Lake" located approximately 20 miles southwest of the City. Syracuse has utilized this lake for its water supply since 1894. Skaneateles Lake is approximately 15 miles long and one mile wide with a maximum depth of 300 feet. Skaneateles Lake has a relatively small watershed of 59 square miles and a water surface area of 13.6 square miles. In 2016, an average of 25.03 million gallons per day (MGD) was released at the outlet of Skaneateles Lake to control lake level and

maintain Skaneateles Creek flow at or above the minimum required flow.

Skaneateles Lake has exceptionally high water quality. This makes it possible to utilize the lake's water without filtration. Skaneateles Lake is one of the few large system surface water supplies in the country that is approved as an unfiltered water supply. The high quality of this water is due to: the shape and size characteristics of the lake and watershed, the fact that sewage discharges (including from sewage treatment plants) are not allowed into surface waters in the Skaneateles Lake watershed, the efforts of the City of Syracuse's watershed protection program, and to the stewardship of residents and landowners of the watershed.

In the 1970's the Onondaga County agency, known as the Metropolitan Water Board (MWB), constructed a water line between Lake Ontario and Syracuse. As a result, the City is able to supplement its Skaneateles Lake water supply with Lake Ontario water when necessary. The City normally relies upon Lake Ontario water during times when drought conditions limit the available supply from Skaneateles, during emergencies, or during periods of high consumption. Since the MWB system is connected to the City's system on the north side of the City, this area may receive water from Lake Ontario from time to time.

The Syracuse water system is made up of over 500 miles of pipelines to deliver water from Skaneateles Lake to the City and to distribute the water throughout the City. The water supply system consists of water storage in Woodland and Westcott Reservoirs on the west side of the City. Water is also stored in two standpipes and in the three tanks that comprise Morningside Reservoir.

### **Water Use**

During 2016, the total amount of water entering the City of Syracuse water system was 12,920.822 million gallons (35.303 MGD). 12,887.992 million gallons (35.213 MGD) was withdrawn from Skaneateles Lake and 32.830 million gallons (0.090 MGD) came from Lake Ontario (Metropolitan Water Board). Water customers were billed for 5,876.713 million gallons (16.056 MGD) leaving 7,044.109 million gallons (19.246 MGD) for firefighting purposes, street sweeping, construction, water main flushing, water discharge, water main repairs, and distribution system leaks.

### **COST OF WATER**

The City of Syracuse continues to have some of the lowest water rates in New York State. Under current water rates the basic price of water is \$2.91 per 100 cubic feet. Non-City customers pay a higher rate of \$4.37 per 100 cubic feet. Customers using less than 1,300 cubic feet per quarter will be billed a minimum charge of \$37.83 per quarter per unit for water. The sewer rate is \$0.94 per 100 cubic feet for sewer use. Sewer bills are based upon actual consumption. The water rate schedule is based on a declining block system.

All water bills are based on consumption, so it is important that your water meter be read. In the past, meter readers had to enter the property for a read, the city is in the process of upgrading to a radio read system. **It is mandatory to be converted to this system.** If you have not been upgraded please contact us for an appointment @ 315-473-2609 ext. 1.

**\*Please note the meter is the property of the City of Syracuse, and may only be removed by meter room personnel\***

### **WATER TREATMENT**

Skaneateles Lake water is a very high-quality water source requiring minimal treatment.

- Chlorine is applied to the water for disinfection.
- Hydro-fluorosilicic acid is added to the water in order to maintain a fluoride level (target level of .70 mg/L) in the water for the purpose of reducing tooth decay.
- Copper sulfate is used to control the growth of algae in Woodland Reservoir. These treatments prevent algae growth which can cause foul tastes and odors between the months of May and October. Copper sulfate treatments occur on an as-needed basis. In 2016 Woodland Reservoir was treated with copper sulfate on four occasions.
- Orthophosphate is added to the water to minimize the dissolving of lead from lead service pipes and other plumbing fixtures. This topic is further described in the section "Lead Corrosion Control".

All Lake Ontario water used by the City has been filtered, chlorinated and fluoridated at Onondaga County's Metropolitan Water Board Plant in Oswego, New York.

## **INFORMATION ON FLUORIDE ADDITION**

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to your water by the City of Syracuse before it is delivered to you. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a target level of 0.7mg/L (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that the City of Syracuse monitor fluoride levels on a daily basis. During 2016 monitoring showed that fluoride levels in your water were within the .07mg/L 87.0% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/L MCL for fluoride.

## **SKANEATELES LAKE FILTRATION WAIVER**

The City of Syracuse applied for and received a filtration waiver in June 2004. Unlike the waivers granted before it, this filtration avoidance extension has no expiration date. Our filtration waiver will remain in effect indefinitely as long as the City maintains its excellent watershed protection programs and the lake water continues to be of high quality.

## **NEW YORK STATE SOURCE WATER ASSESSMENT PROGRAM**

The NYSDOH evaluated the City of Syracuse water supply's susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraphs below. It is important to stress that these assessments are created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for the City of Syracuse. The City of Syracuse provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

This assessment found a moderate susceptibility to contamination for the Skaneateles Lake source of drinking water. The amount of pasture in the assessment area results in a high potential for protozoan contamination. No permitted discharges are found in the assessment area. There is no likely contamination threat associated with other discrete contamination sources, even though some facilities were found in low densities.

The Lake Ontario Source (water purchased from the Metropolitan Water Board): The Great Lakes watershed is exceptionally large and too big for a detailed evaluation in the Source Water Assessment Program. General drinking water concerns for public water supplies that use these sources include: storm generated turbidity, wastewater discharges, toxic sediments, shipping-related spills, and problems associated with exotic species (e.g. intakes clogged by zebra mussels and taste and odor problems). The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this public water supply intake.

This assessment found a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for pesticides contamination. Non-sanitary wastes may increase contamination potential. There is also noteworthy contamination susceptibility associated with other discrete contamination sources and those facility types include: mines.

## **WATERSHED RULES AND REGULATIONS**

The NYSDOH Watershed Rules and Regulations apply to the use of Skaneateles Lake and control activities in the watershed that might affect the water quality. The Watershed Rules and Regulations are comprehensive and provide stringent requirements for repairing failed septic tanks and for protecting Skaneateles Lake from erosion and sediment-laden runoff from construction sites. The City employs watershed inspectors to monitor activities and report violations of the rules. City inspectors check septic systems and also remove and dispose of dead animals that might pollute watercourses. The City works closely with village, town, and state officials to minimize or eliminate the potential for water pollution within the watershed.

Watershed protection and pollution prevention is not a new concept relative to the City's utilization of Skaneateles Lake. Watershed rules and regulations were first adopted in 1909. Since then the City has participated in septic system design and approvals and helped install sewers in the village of Skaneateles. The City's long history with Skaneateles Lake has been marked with a legacy of sound water quality stewardship.

What is a watershed? It's the area of land that drains water into the lake via creeks, brooks, and drainage ways. It can be compared to the shape of an irregular bowl. For Skaneateles Lake, this area totals about 59 square miles. It is largely

made up of agricultural and open land, but has smaller areas of residential and commercial development. One key reason why Skaneateles Lake has high quality water is that the ratio of the amount of land that drains to the lake (59 square miles) to the surface area of the lake (13.6 square miles) is relatively small compared to other lakes.

### ***Skaneateles Lake Watershed Agricultural Program (SLWAP)***

The SLWAP provides environmental protection plans for qualifying farms in the watershed. Once the plans are prepared, financial assistance is provided so that farmers/landowners can install improvements intended to protect the lake by keeping runoff water from storms and snow melt clean.

### ***Land Protection Program***

In an effort to preserve and protect environmentally sensitive land that may have otherwise become a source of pollution, the City purchased conservation easements on 858 acres in the Skaneateles Lake watershed. Sellers agreed to limit activities that may be detrimental to water quality. A component of this program involves educating property owners about environmental stewardship. The purchase program is now complete, but restrictions on the land are perpetual, and properties are monitored on a schedule to make sure that owners are maintaining the proper stewardship of their land.

## **LEAD IN YOUR DRINKING WATER**

The Syracuse Water Department treats the water with orthophosphate so that a sufficient phosphate residual will be maintained in the water and cause a protective coating to form on the interior surfaces of plumbing fixtures and lead water service pipe. The treatment was designated by the NYSDOH and OCHD after the City conducted studies designed to determine a successful method to reduce the amount of lead that dissolves from lead pipes or plumbing fixtures containing lead. Under federal law, we are required to have a program in-place to minimize lead in your drinking water. Source water treatment is not necessary with Skaneateles Lake water since lead is not in the source water.

The City was required by federal law to reduce the amount of lead in its drinking water by replacing 7% of existing lead water services in the public right-of-way each year until two consecutive 6-month water quality sampling events resulted in the 90<sup>th</sup> percentile at a concentration below the USEPA action level of 15 ppb. The December 2006 and the June 2007 sampling events satisfied the requirements.

This treatment may not completely eliminate, but has reduced the amount of lead that dissolves. The Water Department is confident that with continued treatment the levels of lead will stay below the USEPA action level of 15 ug/L. The next round of sampling is scheduled for 2018.

Another source of lead in the drinking water can be from the residential service connection piping. If this line is made of lead, it can contribute high concentrations of lead to the household drinking water. Remember, not every home has a lead contamination problem. Most people have low levels of lead in their drinking water. But because you cannot see, taste or smell lead, testing the water is the only way to know if there is a problem.

If you have any questions about how we are carrying out the requirements of the lead regulation, or want more information about what you can do, please call us at 315-473-2609. Information on Lead in your drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

### ***Why is lead corrosion such a concern?***

Infants and young children are typically more vulnerable to lead in drinking water than the general population. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

## **RESIDENTIAL LEAD SERVICE REPLACEMENT PROGRAM**

If you need assistance in identifying whether you have a lead service, you may call the Water Department at 315-473-2609.

If you want to replace your lead service pipe, the following options are available to you:

- A. Contract with your own licensed plumber who will obtain the necessary permits and perform the work;
- B. For residential properties, utilize the City Water Department's Residential Lead Service Replacement Program whereby we will hire a plumber for you with the cost of the work being assessed to you on your property tax bill in a lump sum, or over a ten year period at seven percent (7%) interest per year.

Option A allows you to negotiate on your own with various licensed plumbers. You may be able to get a lower price for the work, and the time frame to have the work completed may be less. Option B allows you to spread the payments over a ten-year period on your City Tax bill, however this may cost more than if you negotiated the work on your own. Please remember that your \$50 Application Fee cannot be refunded should you choose not to enter into the contract.

If you have any questions about the program or need an application, please contact the City of Syracuse Department of Water at 315-473-2609 ext. 238.

## **WATER QUALITY MONITORING**

The Water Department conducts numerous tests of the water in order to monitor its quality and to verify compliance with state and federal requirements. The monitoring program includes seven primary components described below. The Syracuse Water Department tests Skaneateles Lake water as well as water in the distribution system, which might be a combination of Skaneateles Lake water and water from Lake Ontario. The Onondaga County Metropolitan Water Board is responsible for testing the Lake Ontario supply, since they operate that supply and sell water on a wholesale basis to the City of Syracuse.

### ***Phytoplankton***

Skaneateles Lake and City reservoir water samples are collected and microscopically examined for phytoplankton (algae) on a weekly basis between May and October. High algal populations are controlled by administering copper sulfate to the reservoirs. Though not considered a contaminant, these organisms can impact the taste, odor, and aesthetic quality of the drinking water.

### ***Bacteria***

Each Skaneateles Lake intake is monitored for total and fecal coliform bacteria five times per week, totaling 1,060 samples for the year. Fifty one locations in the water distribution system were tested weekly for coliform bacteria; an average of 273 bacteriological samples were collected per month, or 3,274 samples were collected during the year. Twenty nine routine distribution system samples tested positive for total coliform in 2016. One sample tested positive for E.coli. Per the Total Coliform Rule, the failed site was re-sampled and tested negative.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

### ***Turbidity***

Incoming Skaneateles Lake water is continually monitored at the water treatment plant in Skaneateles for turbidity (measurement of water quality for clarity). Turbidity is caused by particles in the water and is measured in Nephelometric Turbidity Units (NTU). Skaneateles Lake turbidity is generally the result of the re-suspension of bottom sediments as a result of wind driven wave action or from the introduction of suspended sediment as a result of snow melt and storm water runoff.

Turbidity is regulated for the Skaneateles Lake supply by two standards. One is a treatment technique requirement, which is violated if any turbidity measurement exceeds 5 NTU. The second, more critical, threshold is a turbidity regulatory limit, or Maximum Contaminant Level (MCL) violation, which occurs when two consecutive daily entry point analyses exceed 5 NTU.

On February 4 & 25, 2016, the turbidity levels entering the City of Syracuse's intake exceeded the maximum allowable standard of 5 NTU due to high winds. Turbidity levels reached 11.38 NTU on February 4. A reading of 24.09 NTU was recorded on February 25. Both treatment technique violations were reported to the Onondaga County Health Department.

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Please pay special attention to the additional statements in this document regarding Cryptosporidium.

The NYSDOH sets drinking water standards and has determined that the presence of microbiological contaminants is a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any



associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. The NYSDOH has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatments, such as filtration and disinfection, remove or destroy microbiological contaminants.

### ***Chlorine Residual***

The Water Department adds chlorine to the water for disinfection. The amount of chlorine in the water is continuously monitored as the water leaves the City's Skaneateles Lake treatment plant and as it leaves Woodland and Westcott reservoirs. Also, each week, samples are checked at locations throughout the distribution system. NYS regulations require that free chlorine residual be maintained in the water.

### ***Organic and Inorganic Chemicals***

Skaneateles Lake Water is tested for the presence of 24 metals and non-metallic inorganic chemicals, 54 volatile organic compounds, 40 synthetic organic compounds (pesticides) and nine other organic chemicals known as disinfection byproducts. The latter are known as trihalomethanes and haloacetic acids (see section below for detail). The organic and inorganic chemicals and compounds tested for in 2016 are listed in the table of "Undetected Contaminants," which also follows. Trihalomethanes and haloacetic acids were detected (see table below). However, all detections were well below the regulated levels set by the USEPA and NYSDOH.

### ***Other Skaneateles Lake water properties***

Total dissolved solids: 160 mg/L (EPA standard of 500 mg/L); Sodium 10 mg/L; alkalinity 100 mg/L; pH average 7.74; pH range: 7.04-7.99 (EPA standard of 6.5-8.5); total calcium 34 mg/L; and total hardness 137 mg/L.

### ***Radionuclides***

During 2008 the Skaneateles Lake water was analyzed for 3 radionuclides (gross alpha particles, Radium 226 and Radium 228). All results were below detectable levels. The next scheduled round of sampling for radionuclides is 2017.

### ***Summary***

As stated above, Skaneateles Lake and reservoir water was monitored for many inorganic and organic contaminants. See the tables on succeeding pages.

During 2016, Skaneateles Lake and reservoir water was monitored for certain contaminants classified as Unregulated Contaminants, pesticides and herbicides. The lake and reservoirs were sampled for algae (phytoplankton). Though not considered a contaminant, these organisms can impact the aesthetic quality of the drinking water. Thus, treatment to control algae is done to keep the population in check. If you have any questions about the results of these analyses, please call 315-685-6486 or e-mail us at [waterquality@syrgov.net](mailto:waterquality@syrgov.net).

### ***Disinfection Byproducts***

The water in the distribution system is checked quarterly for the presence of disinfection byproducts (DBPs). These organic chemical compounds are formed when chlorine combines with algae or other organic material occurring naturally on the water. High concentrations of DBPs in drinking water can pose a cancer risk. Test results indicate these compounds are present at levels significantly below the stringent EPA standard that went into effect in January 2002. The standards or MCLs are listed in the table on page 13.

### ***Monitoring the Lake Ontario Supply***

The Onondaga County Metropolitan Water Board monitors the quality of its Lake Ontario water. The monitoring of this source is similar to the monitoring that the City does for the Skaneateles Lake supply. The "Detected Contaminant" tables report contaminants detected by the Metropolitan Water Board in its tests of Lake Ontario water. The MWB also tests their treated water for the presence of volatile organic chemicals, inorganic elements and synthetic organic chemicals, including herbicides and pesticides, all of which have not been detected. For a complete summary of the testing performed by the MWB, contact their office at 315-652-8656.

### ***Water Quality Monitoring Tables***

The "Detected Contaminant" tables, which follow this section, report only on those contaminants that have been detected in the water at levels above mandated minimum detection limits, per federal and state regulations. Results are provided for Skaneateles and Lake Ontario water separately, where noted. Any table that reports "City of Syracuse, Distribution System" results refers to water sampled from the City of Syracuse water pipe network; the water sampled from the distribution system may be Skaneateles water or Lake Ontario water or a combination of the two. The distribution system sample results for the Lake Ontario water are representative of Lake Ontario water just prior to the point that the water enters the City of Syracuse distribution system on the north side of the City. The table of "Undetected Contaminants" is

provided to report on tests undertaken by the City of Syracuse of Skaneateles water for contaminants that were not detected above EPA and NYS established detection levels.

## GLOSSARY OF TERMS USED IN THE TABLES

- AL:** (Action Level) the concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.
- MCL:** (*Maximum Contaminant Level*) the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- MCLG:** (*Maximum Contaminant Level Goal*) the level of a contaminant in drinking water below which there is no known health risk. MCLGs allow for a margin of safety.
- Mg/L:** (*Milligrams per liter*) Parts per million—a concentration equal to 1 milligram of a substance in one liter of water, equivalent to parts per million (ppm) in water measurement.
- MRDL:** (*Maximum Residual Disinfectant Level*) the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- MRDLG:** (*Maximum Residual Disinfectant Level Goal*) The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- N/A:** (*Not Applicable*)
- ND:** (*Not detected*) Not detected above the regulated detection level
- NTU:** (*Nephelometric Turbidity Unit*) A measurement of the turbidity, or cloudiness of the water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- PCi/L:** (*Picocuries per liter*) A measure of the radioactivity in water.
- TT:** (*Treatment Technique*) A required process intended to reduce the level of a contaminant in drinking water.
- Ug/L:** (*Micrograms per liter*) Parts per billion, a concentration equal to 1 microgram of a substance in one liter of water, equivalent to parts per billion (ppb) in water measurement.

Detected Contaminants - 2016: General

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Range	Sample Date	Violation
Skaneateles Lake	Barium (1)	mg/L	2	2	0.025	N/A	10-May-16	No
	Chloride (2)	mg/L	250	N/A	20	N/A	10-May-16	No
	Fluoride (3)	mg/L	2.2(8)	N/A	0.74 (9)	0.27-1.02	Daily	No
	Nitrate (4)	mg/L	10	10	0.55	N/A	10-May-16	No
	Sodium (5)	mg/L	N/A (6)	N/A	10	N/A	10-May-16	No
	Sulfate (7)	mg/L	250	N/A	12	N/A	10-May-16	No
	Nickel	mg/L	N/A	N/A	0.00082	N/A	10-May-16	No
Lake Ontario	Barium (1)	mg/L	2	2	0.023	N/A	20-Jul-16	No
	Chromium	mg/L	0.1	0.1	0.0010	N/A	20-Jul-16	No
	Chloride (2)	mg/L	250	N/A	26	N/A	20-Jul-16	No
	Chromium Hexavalent	ug/L	N/A		0.10(9)	0.07 - 0.14	24-Feb,18-May,17-Aug,16-Nov	No
	Fluoride (3)	mg/L	2.2(8)	4	0.72 (9)	0.42 - 0.81	Daily	No
	Nickel	mg/L	N/A	N/A	0.0014	N/A	20-Jul-16	No
	Nitrate (4)	mg/L	10	10	0.25	N/A	20-Jul-16	No
	Sodium (5)	mg/L	N/A (6)	N/A	7.1	N/A	20-Jul-16	No
	Sulfate (7)	mg/L	250	N/A	24	N/A	20-Jul-16	No

Notes:

1. Source: Erosion of natural deposits.
2. Sources: Natural deposits; road salts.
3. Sources: Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
4. Source: Runoff from land applied fertilizer and septic tanks, sewage; erosion of natural deposits.
5. Sources: Natural deposits; road salts; water softeners; animal waste.
6. There is no MCL for sodium, but water with more than 20 mg/l should not be used for drinking by people on severely restricted sodium diets; water with more than 270 Mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.
7. Source: Naturally occurring.
8. The US EPA MCL is 4 mg/l, but NYS has a stricter 2.2 Mg/l standard.
9. Average.

Detected Contaminants - 2016: Distribution System Disinfection Byproducts (1)

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected (2)	Range	Sample Date	Violation
Syracuse City	Total Trihalomethanes TTHM (1)	ug/L	80	N/A	32.06	17.00-47.00	9-Feb,10-May,11-Aug,16-Nov	No
	Haloacetic Acids (HAA5) (1)	ug/L	60	N/A	19.63	14.00-25.00	9-Feb,10-May,11-Aug,16-Nov	No
	Free Chlorine Residual (Distribution System)	mg/L	4	N/A	0.73	0.0 - 3.86	Daily	No
	Free Chlorine Residual (Leaving Water Plant)	mg/L	4	N/A	1.40	.78 - 3.30	Every 4 hours	No
MWB-Lake Ontario Distribution System	Total Trihalomethanes TTHM (1)	ug/L	80	N/A	36	19 - 60	24-Feb, 18-May, 17-Aug, 16-Nov	No
	Haloacetic Acids (HAA5) (1)	ug/L	60	N/A	12	6.2 - 18	24-Feb, 18-May, 17-Aug, 16-Nov	No
	Free Chlorine Residual (Distribution System)	mg/L	4 (MRDL)	N/A (MRDLG)	0.70	0.4 - 0.9	Weekly	No
	Free Chlorine Residual (Leaving Water Plant)	mg/L	4 (MRDL)	N/A (MRDLG)	0.87	0.61 - 1.12	Every 4 hours	No

Notes:

1. Source: Byproduct of drinking water chlorination.
2. The result shown is the average of the samples tested.

### Detected Contaminants - 2016: Organic Chemicals (not including TTHM and HAA5)

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Range	Sample Date	Violation
Syracuse City	Bis(2-Ethylhexyl)phthalate	mg/L	0.006	N/A	0.00079 (1)	N/A	10-May-16	No
Samples From	Contaminant	Unit	Regulatory Limit (MCL) (2)	MCLG (2)	Level Detected	Range	Sample Date	Violation
MWB-Lake Ontario	Total Organic Carbon (2)	mg/L	N/A	N/A	1.7 (3)	1.1 - 2.3	Monthly	No
	Dissolved Organic Carbon (2)	mg/L	N/A	N/A	1.6 (3)	<1 - 2.4	Monthly	No

1. Analyte was detected in the blank at a concentration of 0.00078 mg/L
2. Naturally occurring.
3. Average.

### Detected Contaminants - 2016: Radioactive Contaminants

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Sample Date	Violation
Skaneateles Lake	Gross Alpha Emitters (1)	pCi/L (7)	15	0	Undetected	11-Mar, 27-May, 28-Sept, 14-Oct 2008	No
	Radium 226 (2)	pCi/L (7)	5(5)	0	Undetected	11-Mar, 27-May, 28-Sept, 14-Oct 2008	No
	Radium 228 (2)	pCi/L (7)	5(5)	0	Undetected	11-Mar, 27-May, 28-Sept, 14-Oct 2008	No
Lake Ontario	Gross Alpha Emitters (1)	pCi/L (7)	15	0	Undetected		No
	Gross Beta Emitters (3)	pCi/L (7)	50 (6)	0	Undetected		No
	Radium 226 (2)	pCi/L (7)	5 (5)	0	Undetected	18-Feb, 20-May, 19-Aug, 18-Nov	No
	Radium 228 (2)	pCi/L (7)	5 (5)	0	Undetected		No
	Uranium Total (4)	ug/L	30	N/A	0.290	24-Feb, 18-May, 17-Aug, 16-Nov	No

Notes:

1. Source: Decay of natural deposits.
2. Source: Decay of natural deposits.
3. Source: Decay of natural and man-made emissions.
4. Source: Decay of natural deposits.
5. 5 pCi/L is the regulatory limit for combined Radium 226 and 228.
6. The State considers 50 pCi/L to be the level of concern for beta particles.
7. Picocuries per liter--measure of the radioactivity in water.

Detected Contaminants - 2016: Syracuse Distribution System Coliform

Contaminant	Regulatory Limit (MCL)	Date	# Samples tested	MCLG	# Positive Samples Detected	% of Total samples positive	Violation
Total Coliform Bacteria (1)		Feb-16	292	0	11	3.70%	No
		Apr-16	249	0	1	0.40%	No
		May-16	275	0	1	0.36%	No
		Jun-16	279	0	1	0.36%	No
		Jul-16	255	0	3	1.18%	No
		Aug-16	312	0	2	0.64%	No
		Sep-16	267	0	7	2.62%	No
		Oct-16	265	0	3	1.13%	No

Notes:

1. Source: Naturally present in the environment. Coliforms are used as an indicator that other, potentially harmful bacteria may be present. As shown above, Total Coliforms were detected in the routine monthly compliance samples collected at our system. Four additional recheck samples were collected for every Total Coliform positive sample. Since Total Coliforms were detected in <5% of all the samples collected during the month, the system did not have an Total Coliform MCL violation. It should be noted that E. Coli is associated with human and animal fecal waste.
2. E. coli violation. See narrative for explanation.

Detected Contaminants - 2016: Source Water Turbidity (1)

Turbidity	Unit Measurement	Regulatory Limit (TT)	MCLG	Level Detected	Sample Date	Violation
Skaneateles	NTU	TT <= 5 NTU for filtration avoidance systems	N/A	11.38 NTU (2) (4)	4-Feb-16	Yes
				24.09 NTU (2) (4)	25-Feb-16	Yes
Ontario (5)	NTU	TT <= 1.0 NTU	N/A	100% <= 1.0 NTU	Every 4 hours	No
	NTU	TT=95% of monthly samples <= 0.3 NTU	N/A	100% <= 0.3 NTU	Every 4 hours	No

Notes:

1. Source: Re-suspension of bottom sediment or sediment in stream flow runoff from rainfall events. Turbidity is a measure of the cloudiness of water. In the case of unfiltered Skaneateles Lake water, turbidity is an indicator of water quality; high turbidity can interfere with disinfectants. In the case of Lake Ontario, turbidity is monitored as an indicator of the effectiveness of the filtration system.
2. For unfiltered Skaneateles Lake water, the treatment technique standard limits turbidity to 5 NTU or below. Thus, there were 2 violations during 2016.
- 3 MCL (2 day exceedance)
4. Treatment Technique Violation (1 day exceedance)
5. For the filtered Lake Ontario supply, the treatment technique must maintain turbidity less than or equal to 0.3 NTU in 95% of the samples. The 100% represents the monthly percentage of samples that were below 0.3 NTU.
4. See narrative for explanation of turbidity occurrences.

Undetected Contaminants - 2016: Skaneateles Lake (1)

Volatile Organic Chemicals	Benzene	2-Chlorotoluene	trans- 1,2- Dichloroethene	Methylene Chloride	Trichloroethene
	Bromobenzene	4-Chlorotoluene	1,2- Dichloropropane	n- Propylbenzene	Trichlorofluoromethane
	Bromochloromethane	Dibromomethane	1,3- Dichloropropane	Styrene	1,2,3- Trichloropropane
	Bromomethane	1,2- Dichlorobenzene	2,2- Dichloropropane	1,1,1,2- Tetrachloroethane	1,2,4- Trimethylbenzene
	n-Butylbenzene	1,3- Dichlorobenzene	1,1- Dichloropropene	1,1,2,2- Tetrachloroethane	1,3,5- Trimethylbenzene
	sec-Butylbenzene	1,4- Dichlorobenzene	1,3- Dichloropropene (Cis)	Tetrachloroethene	Toluene
	tert-Butylbenzene	Dichlorodifluoromethane	1,3- Dichloropropene (Trans)	MTBE	m- Xylene
	Carbon Tetrachloride	1,1- Dichloroethane	Ethylbenzene	1,2,3- Trichlorobenzene	p- Xylene
	Chlorobenzene	1,2- Dichloroethane	Hexachlorobutadiene	1,2,4- Trichlorobenzene	o- Xylene
	Chloroethane	1,1- Dichloroethene	Isopropylbenzene	1,1,1- Trichloroethane	Vinyl Chloride
	Chloromethane	cis- 1,2-Dichlorethene	4- Isopropyltoluene	1,1,2- Trichloroethane	
Synthetic Organic Chemicals (Including Pesticide and Herbicides)	1,2-Dibromo-3-chloropropane	Aldicarb Sulfoxide	Dalapon	Hexachlorobenzene	PCB, Total
	1,2-Dibromoethane (EDB)	Aldrin	Dicamba	Hexachlorocyclopentadiene	Pentachlorophenol
	2,4,5-TP Silvex	Atrazine	Dieldrin	Lindane	Pichloram
	2,4-D	Benzo(a)pyrene	Dinoseb	Methomyl	Propachlor
	3- Hydroxy Carbofuran	Bis(2-ethylhexyl) adipate	Endrin	Methoxychlor	Simazine
	Alachlor	Butachlor	Glyphosate	Metolachlor	Total Chlordane
	Aldicarb	Carbaryl	Heptachlor	Metribuzin	Toxaphene
	Aldicarb Sulfone	Carbofuran	Heptachlor Epoxzide	Oxamyl	
Inorganics	Antimony	Arsenic	Beryllium	Cadmium	Chromium
	Cyanide	Iron	Manganese	Mercury	
	Nitrite	Selenium	Silver	Thallium	
	Color	Odor	Iron plus Manganese	Zinc	

Notes:

1. VOC's were sampled on Feb 09, May 10, Aug 11, and Nov 16. Inorganics and SOC's were sampled on May 10 & Aug 11.

## City of Syracuse Water Department Unregulated Contaminant Monitoring Rule 3 (UCMR3) Sampling

In 2014, we were required to collect and analyze drinking water samples for unregulated contaminants. The following contaminants were tested for but not detected. 1,2,3-trichloropropane, 1,3-butadiene, chloromethane (methyl chloride), 1,1-dichloroethane, bromomethane (methyl bromide), chloromethane (methyl chloride), 1,1-dichloroethane, bromomethane (methyl bromide), chlorodifluoromethane (HCFC-22), bromochloromethane (halon 1011), 1,4-dioxane, cobalt, vanadium, perfluorooctanesulfonate acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorobutanesulfonic acid (PFBS), 17- $\beta$ -estradiol, 17- $\alpha$ -ethynylestradiol (ethinyl estradiol), 16- $\alpha$ -hydroxyestradiol (estriol), equilin, estrone, 4-androstene-3,17-dione, and testosterone. The contaminants that were tested for and detected can be found in the table below.

The samples were collected at three separate sample sites in February and April of 2014. The sample sites represented two entry points to the distribution system and one point of maximum residence in the distribution system. You may obtain the monitoring results by calling Mike Lynn at 315-685-6486.

Unregulated Contaminants Detected During Testing																																																						
Contaminant	Water Source	Date(s) of Sampling	Average Level found (Range)	Units Measured	MCLG	Regulatory Limit (MCL, TT, or AL)	Likely Source of Contamination																																															
Molybdenum	6th North St (EP-003)	Feb-14	0.85 (ND-1.2)	ug/l	N/A	N/A	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent																																															
		Apr-14						Strontium	Conduit #1, (EP-001)	Feb-14 Apr-14	88.5 (80-97)	ug/l	N/A	N/A	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions	6th North St (EP-003)	Feb-14 Apr-14	180 (160-200)	ug/l	N/A	N/A	4000 E. Genesee St (DBP MAX)	Feb-14 Apr-14	76 (74-78)	ug/l	N/A	N/A	Chromium-6	Conduit #1, (EP-001)	Feb-14 Apr-14	0.034 (0.03-0.038)	ug/l	N/A	N/A	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation	6th North St (EP-003)	Feb-14 Apr-14	0.085 (0.078-0.092)	ug/l	N/A	N/A	4000 E. Genesee St (DBP MAX)	Feb-14 Apr-14	0.04 (0.036-0.044)	ug/l	N/A	N/A	Chlorate	6th North St (EP-003)	Feb-14 Apr-14	67 (66-68)	ug/l	N/A	N/A
Strontium	Conduit #1, (EP-001)	Feb-14 Apr-14	88.5 (80-97)	ug/l	N/A	N/A	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions																																															
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	4000 E. Genesee St (DBP MAX)	Feb-14 Apr-14	0.04 (0.036-0.044)	ug/l	N/A	N/A																																																
Chlorate	6th North St (EP-003)	Feb-14 Apr-14	67 (66-68)	ug/l	N/A	N/A	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide																																															
	4000 E. Genesee St (DBP MAX)	Feb-14 Apr-14	31 (20-42)	ug/l	N/A	N/A																																																

## GIARDIA AND CRYPTOSPORIDIUM

The Water Department routinely monitors the water for the presence of two parasitic protozoans: *Giardia* and *Cryptosporidium*. These organisms, if ingested, can cause intestinal illness with flu-like symptoms.

Of these two protozoans, *Cryptosporidium* poses the most concern since, unlike *Giardia*, it is not controllable with chlorination at the normal doses utilized in water systems. With the exception of very few service connections to our transmission pipelines between Skaneateles and Syracuse, *Giardia* is routinely oxidized and rendered harmless with the chlorination contact time that the system is able to provide. The NYSDOH has required that water suppliers provide their customers the following notice:

***“New York State law requires water suppliers to notify their customers about the risks of cryptosporidiosis and giardiasis. Cryptosporidiosis and giardiasis are intestinal illnesses caused by microscopic parasites. Cryptosporidiosis can be very serious for people with weak immune systems, such as chemotherapy, dialysis or transplant patients, and people with Crohn’s disease or HIV infection. People with weakened immune systems should discuss with their health care providers the need to take extra precautions such as boiling water, using certified bottled water or a specially approved home filter. Individuals who think they may have cryptosporidiosis and giardiasis should contact their health care provider immediately.”***

An Ultraviolet (UV) Disinfection Facility was completed at Woodland Reservoir in April 2015. The facility, along with a smaller UV facility located at the Westcott Reservoir (completed in 2013), were constructed in order to comply with the USEPA’s Long Term 2 Enhanced Surface Water Treatment Rule (LT2). UV disinfection uses UV light to inactivate pathogens such as *Cryptosporidium* by disrupting their DNA strands, making them non-viable and non-infectious. Two raw water samples (one from each intake) were sampled monthly. A total of 24 samples were collected and analyzed for *Giardia* and *Cryptosporidium* during 2016. No *Giardia* cysts or *Cryptosporidium* oocysts were detected.

Since 1986, there have been 1133 samples analyzed for *Giardia* and 1121 samples for *Cryptosporidium*. Confirmed *Giardia* cysts have been observed in ten samples. Of these, eight were samples collected from tributaries within the watershed, one was a sample collected from Raw Water Intake #2 and one was collected from the Water Shop in 2003 (Table No. 12). *Cryptosporidium* oocysts have been observed on nine occasions since 1988. Of these, three sample locations were tributaries and three were from Raw Water Intake samples.

The Metropolitan Water Board collected a total of 12 *Cryptosporidium* and *Giardia* samples during 2016 from the Lake Ontario water supply. Raw water samples were collected quarterly. No *Giardia* or *Cryptosporidium* was detected in any of MWB’s raw water samples for 2016.

## WATER CONSERVATION

People in the northeastern part of the United States generally feel that they need not be too concerned about water conservation. There is usually plenty of rain and snow to replenish most surface and ground water supplies. Occasionally droughts do strike Central New York and the level of Skaneateles Lake falls to a point that the withdrawals need to be limited as part of the Water Department’s lake level management plan. This happened during 1999 and to a lesser degree in 2001. In March of 2002, Skaneateles Lake was below average level, which prompted the City of Syracuse to issue an advisory that the management plan flow reduction might need to be exercised if the lake level did not improve. During 2004, an above average amount of precipitation fell on the watershed and lake level management was not a problem.

In 2016, the City was not required to reduce withdrawals since the Skaneateles Lake elevation was maintained above the monthly levels outlined in the Water Department’s lake level management plan.

Water conservation should not be something that is ignored until a crisis is at hand. By exercising the following water-saving consumption practices all the time, you will be well prepared to deal with the occasional drought; and by not using any more clean water than is necessary, you will be saving money and doing your share toward global environmental protection. Remember: always be conscious of the water you are using; don’t be wasteful, and look for ways to conserve.

The following are some common sense tips plus some water facts to help you become a conscientious water user. If you would like to obtain more information about water conservation, one good web site is [www.epa.gov/watersense/](http://www.epa.gov/watersense/). This site is a service of the USEPA.



### ***Leakage and Estimated Water Bills***

Customers with bills that are regularly based on estimated water usage may be in for a big surprise if there are plumbing leaks or extraordinary water use at their property.

Since water bills that have been based on estimated water consumption might not account for leakage, a customer will not be aware that their water consumption has increased when reviewing a water bill based on estimated consumption. Several billing cycles may go by before the Water Department is able to obtain a reading at any given property. In such cases, unknown leakage could be costing money without the owner even realizing it. When a water meter reading is finally obtained, the actual water use recorded by the meter will be charged to the customer even though estimated bills may have assumed a lower consumption. So, be aware and be a water-wise consumer by paying attention to water bills and don't let estimated consumption go for more than one quarter. By paying attention to your water bill and to your plumbing, you will be potentially saving water and a lot of money and grief. No one likes to get a water bill that is hundreds of dollars higher than expected.

The following tips might also help save you money:

#### ***Inside Water Use***

- *Repair all leaks in faucets, showerheads, toilets, hoses and other fixtures and appliances.*
- *Use faucet aerators and low flow showerheads.*
- *Put 10-12 drops of food coloring in your toilet tank. If the color appears in the bowl within an hour, your toilet tank is leaking.*
- *Use the sink garbage disposal sparingly.*
- *When using a dishwasher, wash only full loads and do not use extra cycles.*
- *Keep a container of cold water in the refrigerator instead of letting the cold water faucet run.*
- *Water plants with leftover drinking water.*

#### ***Outside Water Use:***

- *Repair or replace leaky garden hose connections.*
- *Use a hose nozzle that can be shut off.*
- *Wash vehicles using a bucket of water and be sure the hose is off when not needed to rinse.*
- *Lawn watering in the summertime uses significant amounts of water.*

Since grass goes dormant during dry periods, most lawns need very little watering. Lawns with a combination of rye, bluegrass, and a higher percentage of fescue are suited for sunny, dry places and have a good tolerance to droughts. Most lawns can go five (5) weeks without water. If lawn watering is permitted, lawns need to be watered only once a week and only long enough for the water to soak 3 or 4 inches below the ground surface. The best time to water lawns is the early morning, to minimize water loss due to evaporation. Don't allow water to run off onto pavements.

### **OPPORTUNITIES FOR PUBLIC PARTICIPATION**

The Mayor of the City of Syracuse is the chief executive officer for the City. The Mayor appoints a Commissioner of Water who is the head of the City's Department of Water. The Mayor's office can be contacted at 315-448-8005. Requests for City services or information can be made to the City's help line at 315-448-CITY (448-2489).

The City of Syracuse Common Council is the legislative body of the City. All matters concerning the Water Department's budget, capital projects, water rates and fees, rules and regulations must be considered by the Common Council. The Common Council meets on a regular basis every other Monday at 1 p.m. except during July and August when it meets every three weeks. An informal "study session" is held at 12 p.m. on the Wednesday prior to a Monday meeting and at 12 p.m. on Monday prior to the formal 1 p.m. meeting. To check on meeting dates you may contact the City Clerk's office at 315-448-8216 or the Common Council office directly at 315-448-8466.

## FLOOD HAZARDS IN SYRACUSE

*Did you know?* The City of Syracuse has five streams that have flooded in recent years with associated property damage:

- **Onondaga Creek**
- **Meadowbrook**
- **Harbor Brook**
- **Ley Creek**
- **Cold Brook**

Onondaga Lake also reached flood levels in the 1970's and 1980's. To address these flooding risks, several flood reduction measures were implemented in the last several decades. The Onondaga Dam was constructed in 1950 and reduces flood risks for Onondaga Creek within the Onondaga Nation, Town of Onondaga and City of Syracuse. The Grand Avenue/Velasko Road detention basin reduces flood risk for Harbor Brook for up to the 25-year flood event, and the County detention basin adjacent to Barry Park reduces flood risk for Meadowbrook for up to the 5-year flood event. Even with these flood reduction measures, flooding remains a real threat for properties near these streams. In addition, flood risks have increased for Onondaga Creek within Syracuse as sediment from upstream areas continues to accumulate in the creek channel reducing the channel flow capacity.

### ***Flooding and Your Safety***

Almost every year, Syracuse and Onondaga County experience flash flooding where stream levels rise rapidly due to intense rainfall events. Intense rainfall will also cause storm sewer back-ups and flash flooding onto local roads.

#### ***Don't Drown – Turn Around!***

- Flash floods can come rapidly and unexpectedly. You may not have warning that a flash flood is approaching.
  - Do not drive around a barricade. Barricades are there for your protection. Turn around and use a safe route.
  - Bridge underpasses are a higher risk for flash flooding.
  - Do not attempt to drive through a flooded road. The depth of water is not always obvious. The road bed may be washed out under the water, and you could be trapped.
  - Just **six inches of water** will reach the bottom of most passenger cars; this depth can cause loss of control or possible stalling.
  - Many cars will start to float in as little as **one foot of water** - this can be extremely dangerous because as the wheels lose grip, you lose control.
  - **Two feet of flowing water** can sweep away most vehicles — including large SUVs. Don't try driving through moving water - your car could easily be swept away.
- 
- Do not attempt to walk in flooded areas! Fast-moving water can sweep you off your feet, and underwater hazards cannot be seen! Floodwaters are also highly unsanitary. Please do not let children play in fast-moving water or flooded areas!

## **Flood Maps and Flood Insurance**

### ***New Flood Maps for Syracuse in November 2016***

In the 1980's, FEMA developed a set of floodmaps for Syracuse that showed the extent of the 1% annual chance flood or the "100-year flood." Floodmapping was developed for Onondaga Lake, Onondaga Creek, Harbor Brook, Ley Creek and Meadowbrook. Cold Brook has not been studied by FEMA and does not have FEMA flood maps.

Under the nationwide floodmapping update, FEMA conducted new flood studies starting in 2005 for the streams within Syracuse. The City Administration and Engineering Department made several appeals to FEMA from 2008 to 2015 to revise the proposed Onondaga Creek floodmaps. The appeals were based on better survey of the creek channel, updated

flow information, and inaccuracies found in the draft mapping. With the help of US Senators Schumer and Gillibrand, the appeals were successful, and FEMA revised the flood maps. Syracuse's appeals reduced the number of parcels proposed to be in the SFHA extents for Onondaga Creek by approximately 400 parcels or one-third. These map changes had the greatest effect along Onondaga Creek between South Avenue and Armory Square in downtown.

On August 9, 2016, the Common Council held a public meeting on the implementation of the new floodmaps and new local floodplain management ordinance. Notice of this meeting was sent to properties owners within Syracuse floodzones. The Syracuse Common Council adopted the new floodmaps in September 2016, and the floodmaps became effective in November 2016. If the floodmaps had not been adopted, Syracuse risked losing membership in the National Flood Insurance Program (NFIP) which would have eliminated federally subsidized flood insurance for residents, and also would have risked Syracuse's ability to receive federal disaster funding for flood-related disasters.

Property owners were also notified of a public open house which was held at the Southwest Community center on September 8, 2016 where FEMA, the NYSDEC and the City provided information on the floodmapping changes and flood insurance. The City also participated in the Syracuse United Neighbors (SUN) forum on flood insurance on December 6, 2016 at the Southwest Community Center.

***Homeowners Insurance does not cover flooding! If you are in a Floodplain, insure your Property with Flood Insurance!***

#### ***Flood Insurance Rate Map (FIRM) Information***

Before a property owner can receive a loan or other financial assistance from a federally-banked lender, there must be a check to see if the building is in the Special Flood Hazard Area (SFHA). The SFHA is the base (100-year) floodplain mapped on a FIRM. Flood insurance rates are determined based on several factors, including the age and type of construction of your home, along with your building's level of risk relative to the base flood elevation (BFE) and/or the flood zone in which your home is located.

Because the City of Syracuse participates in the **National Flood Insurance Program**, subsidized flood insurance is available to City residents. Through the NFIP, the Federal Emergency Management Agency (FEMA) works closely with private insurance companies to offer flood insurance to property owners and renters at subsidized rates.

#### ***Flood Insurance Discount of 15%***

The City of Syracuse also participates in the NFIP **Community Rating System**. This system rewards communities that actively participate in reducing flood risks with discounted flood insurance rates. The City has maintained a **flood insurance discount of 15 percent** for its residents. This 15% discount applies to owners who were paying flood insurance under the previous FEMA mapped floodzones. City residents who were mapped into the floodzones under the new 2016 FEMA maps, but who were not in the floodzone under the previous floodmaps are designated as "Newly Mapped Properties". These properties are not eligible for the 15% discount, but are eligible for **Preferred Risk Rates under FEMA's Newly Mapped Procedure**, which are even lower flood insurance rates than the 15% discount. Make sure you are receiving the 15% flood discount if you are an older floodmapped property, or if you are newly mapped into the floodzone, make sure you are receiving the Preferred Risk Rate.

***Flood insurance policies have varying coverage! Flood insurance is also available for contents, renters, and properties outside of the SFHA. Check with your insurance agent about the coverage that is best for you.***

For more information on flood insurance coverages and rates, please utilize FEMA's websites:

<https://www.floodsmart.gov> or

<https://www.fema.gov/national-flood-insurance-program>

FEMA's Newly Mapped Procedure can be found on FEMA's website at:

<https://www.fema.gov/media-library/assets/documents/104200>

***Need Assistance?*** The Syracuse Dept. of Engineering can assist. We are located at Room 401 City Hall (233 E. Washington St), 8:00 A.M. to 4:00 P.M. weekdays (telephone 448-8211). The Engineering Dept. website has additional resources:

<http://www.syrgov.net/Engineering.aspx>

The NYSDEC Dam Safety Coastal & Flood Protection site also has relevant information:

<http://www.dec.ny.gov/lands/311.html>

To determine if your property (residential or commercial) is within a regulated floodplain, the FEMA FIRMs can be viewed:

- Onondaga County Web GIS (on-line mapping) - web address: <http://www.fsihost.com/onondaga/>
- Syracuse Dept. of Engineering, Mapping Division, Room 401 City Hall (Paper maps for viewing) 8:00 A.M. to 4:00 P.M. weekdays (telephone 448-8211).
- Onondaga County Central Library Main Branch at the Galleries of Syracuse (447 S. Salina Street) (Paper maps for viewing)
- On-line Flood maps are available at the **FEMA Map Service Center** website: <http://msc.fema.gov/portal>

### ***What if I think I am outside of the Special Flood Hazard Area but Flood Insurance is Required?***

FEMA has established procedures to change the designation for properties incorrectly included in the Special Flood Hazard Area. These processes are referred to as the **Letter of Map Amendment, or LOMA**, process and the **Letter of Map Revision Based on Fill, or LOMR-F**, process. Through these processes, an individual who owns, rents, or leases property may submit certain mapping and survey information to FEMA and request that FEMA issue a document that officially removes a property and/or structure from the SFHA. In most cases, the applicant will need to hire, **at his or her own expense**, a Licensed Land Surveyor or Registered Professional Engineer to prepare an **Elevation Certificate** for the property. Upon receiving a complete application forms package, FEMA will normally complete its review and issue its determination in 4 to 6 weeks.

### ***Are Flood Insurance Rates Going to Increase?***

Congress passed two acts since 2012 related to flood insurance. In July 2012, Congress passed the **Biggert-Waters Flood Insurance Reform Act of 2012** (BW-12) which calls on FEMA and other agencies to make changes to the way the National Flood Insurance Program is run. Key provisions of the legislation require the NFIP to phase in increases to flood insurance rates to reflect true flood risk, make the program more financially stable, and change how FIRM updates impact policyholders. The changes will mean premium rate increases for some—but not all—policyholders over time.

In March 2014, Congress passed and President Obama signed the **Homeowner Flood Insurance Affordability Act of 2014** into law. This Act included provisions that revised the Biggert-Waters Act of 2012. The 2014 Act contained provisions to delay implementation of and/or cap flood insurance rate increases for certain types of flood insurance policies. Details on NFIP flood insurance rate changes can be found at the FEMA FloodSmart webpage:

[www.floodsmart.gov/floodsmart/pages/bw-12.jsp](http://www.floodsmart.gov/floodsmart/pages/bw-12.jsp)

## **Reducing Flood Risk**

### ***Protecting Property from Flood Hazards***

To reduce flood risk, the City of Syracuse undertakes several measures including cleaning and monitoring of creek channels and overbanks to maintain water flow, controlling building and development in designated flood hazard zones, and maintaining benchmarks and providing information to the public in regard to the SFHA. These actions also help maintain Syracuse's Community Rating and lower flood insurance rates.

### ***What Can I Do to Help Protect My Property From Flooding?***

Measures to protect a property from flood damage include retrofitting, elevating a building above flood levels, constructing small protective barriers, and waterproofing walls, grading a yard, correcting local drainage problems, and such emergency measures as moving furniture and sandbagging.

Please consult with the Department of Neighborhood & Business Development, Division of Code Enforcement (448-8600) regarding any alteration or addition to your building or land. Most of these improvements will require a permit, including grading or filling of the site...

### ***Onondaga Creek Flood Risk Reduction***

The City of Syracuse has been working with the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers and FEMA to investigate strategies for reducing Onondaga Creek flood risk. In June 2016, the NYSDEC completed a study of Onondaga Creek which analyzed flood risk reduction measures for Onondaga Creek including sediment and vegetation removal, channel modifications, removal of abandoned low-clearance bridges at Jefferson Street, and modifications to the Onondaga Dam. The City assisted the NYSDEC study by surveying the channel and banks to determine existing conditions and to help estimate the volume and depth of sediment in the creek channel. The City, along with US Senators Schumer and Gillibrand and US Representative Katko, are continuing to work on identifying funding for flood risk mitigation measures for Onondaga Creek.

### **Building in the Floodplain**

#### ***Build Responsibly!***

The City of Syracuse regulates new construction, site development and building renovation within the floodplain. In September 2016, the City adopted a new floodplain ordinance to reduce risk to new structures in the floodplain, and to ensure that new floodplain development will not enlarge the floodplain or raise flood elevations, adversely affecting neighboring properties.

Strict regulations apply to projects within the designated Floodway (higher risk area close to the waterway). Projects located within the SFHA are also subject to specific regulations. Projects in the **Regulated Floodway** must demonstrate by engineering analysis that they will cause **no increase in flood elevations**. All projects within the SFHA, whether inside or outside of the regulated floodway, must maintain pre-development flood storage (i.e., the volume of project excavation must equal or exceed the volume of project fill in the floodplain). The City of Syracuse Department of Engineering and the Code Enforcement websites provide additional information regarding building within the regulated floodplain.

#### ***Renovation within the Floodplain: Substantial Improvement Requirements***

For structures within the SFHA, the NFIP requires that if the cost of reconstruction, rehabilitation, addition or other improvements to a building equals or exceeds 50% of the building's market value, then the building must meet the same construction requirements as a new building. Substantially damaged buildings where the cost of repairs equals or exceeds 50% of the building's value before it was damaged must be brought up to the same standards. **Residential and commercial structures in the SFHA that has BFEs shall have the lowest floor, including basement or cellar, elevated to or above base flood elevation plus 2 feet freeboard.** Commercial, industrial or other non-residential structures in the SFHA can be dry-floodproofed so that the structure is watertight below the base flood level with walls substantially impermeable to the passage of water. Information on development in the SFHA can be found at [www.dec.ny.gov/docs/water\\_pdf/floodplainconstruction.pdf](http://www.dec.ny.gov/docs/water_pdf/floodplainconstruction.pdf)

### **Protect the Floodplain!**

#### ***Keep Channels Clear of Debris***

The potential for flooding is greatly alleviated when creeks are clear of obstructions. It is a violation of a city ordinance to dispose of any solid waste (trees, garbage, etc.) in any creek or channel throughout the city. The City's Public Works Department, Bureau of Sewers & Streams, assigns personnel to check the main creeks at least twice per year. In the event that branches or other miscellaneous debris accumulate in a creek, you may contact the City DPW to clear them out free of charge at 315-448-CITY (2489). For no-cost clearing in the Meadowbrook and Harbor Brook areas please call the County Department of Water Environment Protection at 435-2260.

### **STORM WATER MANAGEMENT**

#### **REDUCING THE IMPACTS OF STORMWATER POLLUTION**

##### ***What is Stormwater?***

Stormwater is rain that falls on roofs, lawns, or paved areas like driveways and roads, and is carried away by a system of storm water pipes or culverts and ditches. As it flows over the land surface, stormwater picks up debris, chemicals, dirt and other pollutants. This *untreated* water is discharged into the water bodies we use for swimming, fishing and drinking water.

## ***Ten Ways Homeowners Can Improve the Quality of Stormwater Runoff***

1. Cover piles of soil, sand or mulch to stop them from being transported in storm water. Plant grass where soil is exposed.
2. Sweep your sidewalks and driveways rather than hosing them down.
3. Put leaves and grass clippings in the compost, on the garden as mulch, or mow back into the lawn to recycle nutrients
4. Divert roof water to lawns or gardens where it can safely soak in.
5. Keep pesticides, oil, leaves and other pollutants off streets and out of storm drains.
6. Keep cars tuned up and repair leaks.
7. Wash your vehicle on grass or over gravel. Use as little detergent as you can and pour any leftover soapy water onto the lawn.
8. Dispose of household hazardous waste according to the label directions. Reuse turpentine once the paint has settled.
9. Clean up pet waste and dispose of in an appropriate manner.
10. Have your septic system inspected by a professional every 3 to 5 years and have the septic system pumped as necessary (usually every 3 to 5 years).

### ***Why Should You Care?***

- Sediment clouds the water making it difficult for aquatic plants to grow.
- Sediment deposits fill in fish spawning beds and deep pools. Fish eggs are buried and food supplies are reduced.
- Excess nutrients cause algae blooms and deplete oxygen supplies.
- Bacteria and other pathogens discharged in swimming areas create health hazards.
- Debris washed into the water can choke, suffocate or disable aquatic life.
- Household hazardous wastes can poison aquatic life.
- Boating, swimming and other recreational activities are impaired due to sediment-filled navigation channels and decreased water clarity.
- Polluted storm water often affects drinking water sources – human health is at risk and water treatment costs rise.

### ***Storm Water Pollutants of Concern***

- **Coliform** – Pathogens or bacteria, possibly from illicit discharges or pet waste, that are responsible for periodic beach closings.
- **Floatables** – Street litter or debris that floats on or near the water surface and can be harmful or fatal to aquatic organisms.
- **Oil / Grease** – A pollutant that often enters the water via storm drains and road runoff, which damages animal's skins and can cause poisonings, blindness and liver damage.
- **Phosphorus** – An element that is easily transported via sediment into the water. Excess phosphorus causes algal blooms, decreases water clarity and reduces dissolved oxygen.
- **Settling Solids** – Soil or other particles that settle on the lake or stream bottom and destroy aquatic habitats, spawning areas and may contaminate bottom feeding organisms.
- **Suspended Solids** – Smaller soil particles transported via runoff and erosion that decrease water clarity and food supplies.

### ***Illicit Discharge Detection and Elimination (IDDE) Program***

Under a State Pollution Discharge Elimination System (SPDES) General Permit the City of Syracuse is required to develop a program to detect and eliminate illicit discharges to stormwater sewer systems. Illicit discharges are defined as drainage into a storm water sewer that is not runoff from precipitation. This could be improperly connected sanitary sewers, or used motor oil or other contaminants deposited into catch basins.

To facilitate this program, the City has developed mapping of the storm water sewer systems within the City, including the outlets into the various streams passing through the City. The maps will be developed to also show stormwater sewer lines and manholes plus the geographic limits of the individual sewer lines (known as "sewer sheds"). The completed maps will be used by investigators in the field to isolate sources of illicit discharges so that they can be eliminated by the responsible party from the storm water system.

If you would like to report an illicit discharge into a storm sewer or catch basin, please call City Line 315-448-CITY (2489) or go on-line to the City's website [www.syr.gov.net](http://www.syr.gov.net) and click on the link to the SYRCITYLINE on the homepage to submit your request.

## **General Hazard Preparedness**

In 2012, the City of Syracuse adopted the Onondaga County Hazard Mitigation Plan which provides a guide for identifying mitigation strategies for all forms of hazards affecting the County, City and other local municipalities. Adoption of this plan facilitates coordination with the New York State Emergency Management Office and FEMA, and provides opportunities for hazard mitigation funding from state and federal sources.

*FOR MORE INFORMATION OR QUESTIONS CONTACT:  
Syracuse Department of Engineering, Office of the City Engineer, 315-448-8200*

*CITY OF SYRACUSE*

*DEPARTMENT OF WATER  
101 NORTH BEECH STREET  
SYRACUSE, NY 13210*

**FOR MORE INFORMATION OR QUESTIONS:**

**Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead.**

**SYRACUSE DEPARTMENT OF WATER**

Emergencies:	315-473-2860	
Engineering, Maintenance, and Operations:	315-473-2609	Fax: 315-473-2608
Meter Reading & Water Billing:	315-448-8238	Fax: 315-448-8262
Water Quality & Treatment:	315-685-6486	Fax: 315-685-8160

Other important sources of information concerning water-related issues are as follows:

ONONDAGA COUNTY DEPARTMENT OF HEALTH 315-435-6600  
ONONDAGA COUNTY LEAD POISON CONTROL 315-435-3271

US EPA's \*SAFE DRINKING WATER HOTLINE\* 1-800-426-4791

*(This hotline is available to provide you with information on drinking water contaminants and health effects.)*