



CITY OF SYRACUSE DEPARTMENT OF WATER

Consumer Confidence Report 2022 Newsletter

Ben Walsh, Mayor

**Joseph Awald, P.E.
Commissioner of Water**



Annual Drinking Water Quality Report for 2022

(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>

Ben Walsh, Mayor
City of Syracuse

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1. 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 individual customers and/or portions of the towns of Dewitt, Onondaga, Geddes, Camillus, Salina. SWD also supplies source water to the villages of Skaneateles, 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 by-products 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.

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 315-448-8340. You may send e mail to the City of Syracuse through the City's web site, <http://www.syr.gov> or mail us through the U.S. Postal Service at 101 North Beech Street, Syracuse New York 13210.

2. SYRACUSE WATER SUPPLY AND SYSTEM USE

For 125 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 2022, an average of 40.25 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, formerly known as the Metropolitan Water Board (MWB), constructed a water line between Lake Ontario and Syracuse which is now owned and operated by the Onondaga County Water Authority (OCWA). 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.

2.1 Water Use

During 2022, the total amount of water entering the City of Syracuse water system was 13,780.90 million gallons (37.756 MGD). 14,012.00 million gallons (38.30 MGD) of water was withdrawn from Skaneateles Lake and 2.033 million gallons (0.006 MGD) came from Lake Ontario (Onondaga County Water Authority). Water customers were billed for 5,241.16 million gallons (14.359 MGD) leaving 8,770.84 million gallons (24.029 MGD) for firefighting purposes, street sweeping, construction,

water main flushing, water discharge, water main repairs, and transmission/distribution system leaks.

2.2 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 \$3.24 per 100 cubic feet. Non-City customers pay a higher rate of \$4.87 per 100 cubic feet. Customers using less than 1,300 cubic feet per quarter will be billed a minimum charge of \$42.12 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, currently ~98% of the city's water meters have been upgraded to the radio read system. It is mandatory to be converted to this system. If you have not been upgraded, please contact us for an appointment 315-448-8357.

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

3. WATER TREATMENT

Skaneateles Lake water is a very high-quality water source requiring minimal treatment. The following treatment is conducted by the Syracuse water Department:

- Chlorine is applied to the water for disinfection.
- Hydro-fluorosilicic acid is added to the water to maintain a fluoride level (target level of 0.7 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 Woodland Reservoir has not been treated with copper sulfate since 2018.
- 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.

3.1 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 the customer. According to the United States Centers for Disease Control (USCDC), 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 New York State Department of Health (NYSDOH) requires that the City of Syracuse monitor fluoride levels daily. During 2022 monitoring showed fluoride levels in your water were within 0.1mg/l of the optimal

dose 87.52% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/L MCL for fluoride.

4. 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.

5. 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 Onondaga County Water Authority): 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 number 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.

6. 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 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.

6.1 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.

6.2 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.

7. LEAD IN YOUR DRINKING WATER

The Syracuse Water Department treats the water with orthophosphate in order to provide and maintain a sufficient phosphate residual in the water, creating a protective coating 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 90th 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 ppb. In 2021, lead and copper sampling resulted in 4

homes exceeding the action level of 15 ppb and one home with a level of 15.1 ppb bringing the 90th percentile to 15.1 ppb for the testing cycle. Due to the possibility of lab error at such small quantities (fractions of a part per billion), the USEPA dictates that the levels are to be rounded to the nearest whole number. For example, lead levels between 15.01ppb and 15.49 ppb are rounded down to 15 ppb and levels between 15.50ppb and 15.59ppb would be rounded up to 16 ppb. Since the 90th percentile for this testing cycle was 15.1 ppb, it was rounded down to 15 ppb and considered to be okay per the testing requirements and guidance from the New York State Health Department. Data from this testing cycle is provided on table 5.

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 315-448-8347. 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>.

7.1 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 levels 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.

7.1.1 RESIDENTIAL LEAD SERVICE REPLACEMENT PROGRAM

If you need assistance in identifying whether you have a lead service, you may call the Water Department at 315-448-8347

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

1. Contract with your own licensed plumber who will obtain the necessary permits and perform the work;
2. 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 1 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 2 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 315-448-8347.

8. 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 Water Authority 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.

8.1 Phytoplankton

Skaneateles Lake and the City's Reservoir water samples are collected and microscopically examined for phytoplankton (algae) between May and October. High algal populations are controlled in the Reservoir by diffused aeration; ultrasonic algae control devices and the application of copper sulfate when necessary. Though not considered a contaminant, these organisms can impact the taste, odor, and aesthetic quality of the drinking water.

8.2 Skaneateles Lake Harmful Algae Bloom

Algae blooms observed by Skaneateles Lake Watershed Protection staff were exceptionally small, localized and limited to near-shore areas in 2022. Monitoring, identifying, sampling and reporting algae blooms involved a collaborative effort between the NYSDEC Finger Lakes HAB Volunteer Surveillance, NYSDEC Finger Lakes Water Hub, the Skaneateles Lake Association (SLA) Shoreline HABs Program, CSLAP and the City of Syracuse Water Department. The SLA Shoreline HABs Program comprising of select volunteers continued to monitor 25 zones around the perimeter of Skaneateles Lake in 2022. Suspicious algal blooms are reported to the NYSDEC Division of Water HABsInfo@dec.ny.gov. Syracuse Water Department personnel collect water samples following reports of suspicious blooms. Algal forms are identified, and cell counts performed on one-liter centrifuged samples under light microscopy to determine dominant forms and the composition of bloom densities. Water samples are collected from Skaneateles Lake water intakes for detection of microcystin when open water or near-shore blooms are located within close-proximity to the water intakes.

As a result of the numerous volunteers and professional staff monitoring Skaneateles Lake and the heightened awareness of lakefront property owners and watercraft operators, the Lake was intensely monitored and lake conditions assessed in a timely manner. The frequent monitoring and the lake-wide surveillance program were effective in the early detection of HABs in 2022.

8.3 NYSDOH Action Plan

In coordination with the NYSDOH, an Action Plan was developed in 2018 to ensure the City's drinking water remained of high quality and microcystin was not detected in treated water above 0.3 µg/L. The Action Plan included short-term and long-term measures.

8.3.1 Short Term Actions

Short-term actions provide for an aggressive monitoring program. Microcystin sampling at the City's drinking water intakes was initiated on July 5, 2022, and extended through October 10, 2022. Raw water from both of the City's Intakes was sampled weekly. If microcystin is detected, repeat samples are collected for both raw and treated water at that Intake until results are below detectable levels of microcystin for three consecutive days. Microcystin samples were collected and transported to a certified lab on 17 occasions for analysis in 2022. Raw water samples were reported to have

microcystin levels above the limit of quantitation (LOQ) of 0.3 µg/L on one occasion on Intake No. 1 and three occasions for Intake No. 2. Microcystin levels were not detected above the LOQ for treated water.

Short term actions also addressed the City's response to finished water microcystin levels above the 0.3 µg/L. in regards to public messaging and agency coordination. These measures included identifying specific agencies and contact information involved in decision making and communications and resources immediately available, such as alternate potable water.

Since increasing blue-green algae cell densities are generally associated with increasing cyanotoxin concentrations, the City has applied for an aquatic use pesticide through the NYSDEC in 2020 to mitigate the risk of allowing microcystin producing algae to grow unmanaged. A State Pollution Discharge Elimination System (SPDES) Permit was issued by the Division of Water – Bureau of Water Permits in 2022 for applying an algaecide within the north basin of Skaneateles Lake.

8.3.2 Long Term Actions

Long-term actions currently in the design phase include extending the City's shallow water intake. Actions under evaluation include developing and/or enhancing interconnections between neighboring public water systems and continued and advanced source water protection activities. Source water protection activities are also part of the HAB Action Plan that the New York State Department of Environmental Conservation (NYSDEC) is developing in concert with steering committees. Having additional in-lake short time actions established to manage HABs especially though the funding, design and implementation process necessary for long-term action items is a critical component to ensure optimal water quality.

8.4 Bacteria

Each Skaneateles Lake water intake is monitored for total and fecal coliform bacteria five times per week, totaling 1,070 samples for the year. Fifty one locations in the water distribution system were tested weekly for coliform bacteria; an average of 221 bacteriological samples were collected per month, or 2,648 samples were collected during the year. Eight routine distribution system samples tested positive for total coliform in 2022. No samples tested positive for E.coli.

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.

8.5 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.

No treatment technique violations (TTV) were recorded in 2022.

One Turbidity Event occurred on December 1, 2022 (Intake #1). Sustained southerly winds resulted in an elevated turbidity recording of 8.48 NTU at 4:00 am on November 30 (Intake #2). On December 1, Intake #1 recorded 7.19 NTU at 12:00 am. Intake #2 was closed on November 30 and re-opened on December 4.

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.

8.6 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.

8.7 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 2022 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.

8.8 Other Skaneateles Lake water properties

Other common properties of Skaneateles Lake water are: Sodium 11.7 mg/L; pH average 7.84; pH range: 7.02-8.22 (EPA standard of 6.5-8.5); and total hardness 128 mg/L.

8.9 Radionuclides

Skaneateles Lake water was analyzed for 3 radionuclides (gross alpha particles, Radium 226 and Radium 228 in 2017. All results were below detectable levels. The next scheduled round of sampling for radionuclides is 2026.

8.10 Water Quality Summary

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

During 2022, Skaneateles Lake 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 315-448-8366 or e-mail us at waterquality@syr.gov.

8.11 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 16.

8.12 Monitoring the Lake Ontario Supply

The Onondaga County Water Authority 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. OCWA 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 OCWA, contact their office at 315-455-7061.

8.13 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.

8.14 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

Ng/L: (Nanograms per liter) Parts per trillion - a concentration equal to 1 nanogram of a substance in one liter of water, equivalent to parts per trillion (ppt) in water measurement.

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.

Table 1 Skaneateles Lake Microcystin Levels (ug/L) July 6 – October 25 2022

Date Sampled	7/5	7/11	7/18	7/26	8/1	8/8	8/15	8/22	8/29	9/6	9/19
Intake 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Intake 2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Clear Well 1&2	---	---	---	---	---	---	---	---	---	---	---
Clear Well 3	---	---	---	---	---	---	---	---	---	---	---
Skaneateles UV Plant	---	---	---	---	---	---	---	---	---	---	---
Elbridge UV Plant	---	---	---	---	---	---	---	---	---	---	---
Westcott Incoming	---	---	---	---	---	---	---	---	---	---	---

Westcott Outgoing	---	---	---	---	---	---	---	---	---	---	---
Woodland Incoming	---	---	---	---	---	---	---	---	---	---	---
Woodland Outgoing	---	---	---	---	---	---	---	---	---	---	---
Skaneateles High School	---	---	---	---	---	---	---	---	---	---	---
Byrne Dairy	---	---	---	---	---	---	---	---	---	---	---
Elbridge North	---	---	---	---	---	---	---	---	---	---	---
Jordan Town Hall	---	---	---	---	---	---	---	---	---	---	---
Syracuse Burnet Ave	---	---	---	---	---	---	---	---	---	---	---

Table 2 Skaneateles Lake Microcystin Levels (ug/L) July 6 – October 25 2022

Date Sampled	9/22	9/26	10/3	10/7	10/10					
Intake 1	ND	0.40	ND	ND	ND	---	---	---	---	---
Intake 2	0.33	0.60	ND	0.42	ND	---	---	---	---	---
Clear Well 1&2	---	ND	---	ND	---	---	---	---	---	---
Clear Well 3	---	ND	---	ND	---	---	---	---	---	---
Skaneateles UV Plant	---	---	---	---	---	---	---	---	---	---
Elbridge UV Plant	---	---	---	---	---	---	---	---	---	---
Westcott Incoming	---	---	---	---	---	---	---	---	---	---
Westcott Outgoing	---	---	---	---	---	---	---	---	---	---
Woodland Incoming	---	---	---	---	---	---	---	---	---	---
Woodland Outgoing	---	---	---	---	---	---	---	---	---	---
Skaneateles High School	---	---	---	---	---	---	---	---	---	---
Byrne Dairy	---	---	---	---	---	---	---	---	---	---

Elbridge North	---	---	---	---	---	---	---	---	---	---
Jordan Town Hall	---	---	---	---	---	---	---	---	---	---
Syracuse Burnet Ave	---	---	---	---	---	---	---	---	---	---

Table 3 Detected Contaminants – 2022: General

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Range	Sample Date	Violation
Skaneateles Lake	Barium (1)	Mg/L	2	2	0.0227	N/A	May 10, 2022	No
	Chloride (2)	Mg/L	250	N/A	23.2 (9)	21.9-24.5	May 10, 2022 Nov. 15, 2022	No
	Fluoride	Mg/L	2.2 (3)	N/A	0.71 (9)	0.10-0.99	Daily	No
	Magnesium (8)	ug/L	N/A	N/A	7.73	N/A	November 29, 2022	No
	Nitrate (4)	Mg/L	10	10	0.45	N/A	May 10, 2022	No
	Sodium (5)	Mg/L	N/A (6)	N/A	11.2 (9)	10.7-11.7	Nov. 15, 2022 Nov. 29, 2022	No
	Sulfate (7)	Mg/L	250	N/A	12.1 (9)	12.0-12.2	May 10, 2022 Nov. 15, 2022	No
Lake Ontario	Aluminum (1)	Mg/L	N/A	N/A	0.15	N/A	September 2022	No
	Barium (1)	Mg/L	2	2	0.0211	N/A	September 2022	No
	Calcium	Mg/L	N/A	N/A	31.0	N/A	September 2022	No
	Chloride (2)	Mg/L	250	N/A	26.3	N/A	September 2022	No
	Copper	Mg/L	AL=1.3	N/A	0.005	N/A	September 2022	No
	Fluoride (3)	Mg/L	2.2 (5)	4	0.69 (9)	0.47-0.77	Daily	No
	Magnesium (8)	Mg/L	N/A	N/A	8.52	N/A	September 2022	No
	Nickel	Mg/L	N/A	N/A	.00064	N/A	September 2022	No

	Nitrate (4)	Mg/L	10	10	0.26	N/A	September 2022	No
	Sodium (5)	Mg/L	N/A (6)	N/A	15.8	N/A	September 2022	No
	Sulfate (7)	Mg/L	250	N/A	22.3	N/A	September 2022	No
	Perfluorooctane sulfonate (PFOS) (10)	ng/L	10	N/A	1.8 (9)	<1.8-2.4	Monthly	No
	Perfluorooctanoic acid (PFOA) (10)	Ng/L	10	N/A	1.0 (9)	<1.8-2.0	Monthly	No
	Perfluorobutanoic acid (PFBA) (10)	Ng/L	50,000	N/A	2.9	N/A	Dec. 6, 2022	No

Notes:

- 1: Sources –Erosion of natural deposits
- 2: Sources – Natural deposits; road salt
- 3: The US EPA MCL is 4mg/L, but NYS has a stricter 2.2mg/L standard
- 4: Sources – 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 20mg/L should not be used for drinking by people with severe sodium restriction diets; water with more than 270mg/L should not be used for drinking by people with moderate sodium restriction diets
- 7: Source – Naturally occurring
- 8: Naturally occurring
- 9: Average
- 10: Non-stick coatings, stain repellents and fire fighting foam

Table 4 Detected Contaminants – 2022: Distribution System Disinfection Byproducts

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	34.01	18.30-74.60	2/10, 5/10, 8/18, 11/15	No
	Haloacetic Acids HAA5 (1)	ug/L	60	N/A	19.01	9.40-25.70	2/10, 5/10, 8/18, 11/15	No
	Free Chlorine Residual (Distribution System)	Mg/L	4 (MRDL)	N/A (MRDLG)	0.66	0.00-1.76	Daily	No
	Free Chlorine Residual (Leaving Water Plant)	Mg/L	4 (MRDL)	N/A	1.15	0.37-2.02	Every 4 Hours	No

Notes:

- 1: Source – Byproduct of drinking water chlorination

Table 5 Detected Contaminants – 2022: Lead and Copper

Samples From	Contaminant	Unit	Regulatory Limit (AL)	MCLG	Level Detected (2)	Range	Sample Date	Violation
Syracuse (City)	Lead (1)	ug/L	15	0	15.1 (3)	ND-49.6	September 2021	No
	Copper (2)	ug/L	1300	1300	230 (3)	9.1-297	September 2021	No

Notes:

- 1: Source – Corrosion of lead service pipe, brass fittings, and household plumbing components
- 2: Source – Corrosion of household plumbing components
3. The result represents the 90% value, i.e., the concentration that is equal or greater than 90% of the sample results of the 50 samples checked. The action level for lead was exceeded at one of the 50 sites tested. The action level for copper was not exceeded at any of the test sites

Table 6 Detected Contaminants – 2022: Organic Chemicals (not including TTHM and HAA5)

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Range	Sample Date	Violation
Syracuse (City)	None	---	---	---	---	---	---	---
OCWA – Lake Ontario	Total Organic Carbon (1)	Mg/L	N/A	N/A	1.6 (2)	1.3-2.6	Monthly	No
	Dissolved Organic Carbon (1)	Mg/L	N/A	N/A	1.7 (2)	1.3-2.4	Monthly	No

Notes:

- 1: Naturally occurring
- 2: Average

Table 7 Detected Contaminants – 2022: 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	5/10/2017	No
	Radium 226 (2)	pCi/L (7)	5 (5)	0	Undetected	5/10/2017	No
	Radium 228 (2)	pCi/L (7)	5 (5)	0	Undetected	5/10/2017	No
Lake Ontario	Gross Alpha Emitters (1)	pCi/L (7)	15	0	Undetected	February, May, August, December 2022	No
	Gross Beta Emitters (3)	pCi/L (7)	50 (6)	0	1.68		No
	Radium 226 (2)	pCi/L (7)	5 (5)	0	0.197		No

	Radium 228 (2)	pCi/L (7)	5 (5)	0	0.161		No
	Uranium Total (4)	ug/L	30	N/A	0.364		No

Notes:

- 1: Source – Decay of natural deposits
- 2: Source – Decay of natural deposits
- 3: Source – Decay of natural deposits and man-made emissions
- 4: Source – Decay of natural deposits
- 5: 5pCi/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

Table 8 Detected Contaminants – 2022: Syracuse Distribution System Coliform

Samples From	Contaminant	Regulatory Limit (MCL)	Month	Samples Tested	MCLG	Positive Samples	% Positive	Violation
Syracuse Distribution System	Total Coliform Bacteria (1)	N/A	January	260	0	1	0.38%	No
			June	275	0	2	0.73%	No
			July	273	0	5	1.83%	No
			August	298	0	1	0.34%	No
			September	261	0	2	0.77%	No
			October	252	0	3	1.19%	No
			November	316	0	5	1.58%	No
			December	238	0	1	0.42%	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 samples collected during the month, the system did not have a Total Coliform MCL violation. It should be noted that E. Coli is associated with human and animal fecal waste.

Table 9 Detected Contaminants – 2022: Source Water Turbidity (1)

Turbidity Location	Unit Measurement	Regulatory Limit (TT)	MCLG	Level Detected	Sample Date	Violation
Skaneateles	NTU	MCL <= 5NTU for filtration avoidance systems	Yes	8.48 NTU (2) 7.19 NTU (2)	11/30/22 12/01/22	Yes
Ontario (3)	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: MCL (2 day exceedance). There was one MCL in 2022.

3: For the filtered Lake Ontario supply, the treatment technique must maintain turbidity <= 0.3 NTU in 95% of samples. The 100% represents the monthly percentage of samples below 0.3 NTU.

Table 10 Undetected Contaminants – 2022: Skaneateles Lake (1)

Undetected Contaminant Type	Contaminant Name				
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-Butyibenzene	1,3-Dichlorobenzene	1,1-Dichloropropene	1,1,2,2-Tetrachloroethane	1,3,5-Trimethylbenzene
	sec- Butyibenzene	1,4-Dichlorobenzene	(cis) 1,3-Dichloropropene	Tetrachloroethene	Toluene
	tert- Butyibenzene	Dichlorodifluoromethane	(trans) 1,3-Dichloropropene	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-Dichloroerthene	p- Isopropyltoluene	1,1,2-Trichloroethane	
Synthetic Chemicals	1,2-Dibromo-3-chloropropane	Aldicarb Sulfoxide	Carbofuran	Heptachlor Epoxzide	Oxarnyl

(Including Pesticides and Herbicides)	1,2-Dibromethane (EDB)	Aldrin	Dalapon	Hexachlorobenzene	PCB, Total
	2,4,5-TP Silvex	Atrazine	Dicamba	Hexachlorocyclopentadiene	Pentachlorophenol
	2,4-D	Benzo(a)pyrene	Dieldrin	Lindane	Pichloram
	3-Hydroxy Carbofuran	Bis (2-Ethylhexyl) phthalate	Dinoseb	Methomyl	Propachlor
	Alachlor	Bis (2-Ethylhexyl) adipate	Endrin	Methaxychlor	Simazine
	Aldicarb	Butachlor	Glyphosate	Metolachlor	Total Chlordane
	Aldicarb Sulfone	Carbaryl	Heptachlor	Metribuzin	Toxaphene
Inorganics	Antimony	Chromium	Lead	Odor	Zinc
	Arsenic	Color	Mercury	Selenium	
	Beryllium	Cyanide	Nickel	Silver	
	Cadmium	Iron	Nitrite	Thallium	

Table 11 Emerging Contaminants – 2022: PFAS / 1-4 Dioxane

Samples From	Contaminant	Unit	Regulatory Limit (MCL)	MCLG	Level Detected	Sample Date	Violation
Skaneateles Lake	Perfluorobutanesulfonic acid (PFBS)	ng/L	50,000	2,000	Undetected	11/15/2022	No
	Perfluorohexanoic acid (PFHxA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluorohexanesulfonic acid (PFHxS)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluoroheptanoic acid (PFHpA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluorooctanoic acid (PFOA) (1)	ng/L	10	N/A	0.96 (2)	11/15/2022	No
	Perfluorooctanesulfonic acid (PFOS)	ng/L	10	N/A	Undetected	11/15/2022	No
	Perfluoronanoic acid (PFNA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluorodecanoic acid (PFDA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	N-etFOSAA	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluoroundecanoic acid (PFUnA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	N-MeFOSAA	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluorododecanoic acid (PFDoA)	ng/L	50,000	N/A	Undetected	11/15/2022	No

	Perfluorotetradecanoic acid (PFTrDA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Perfluorotetradecanoic acid (PFTA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	ng/L	50,000	10	Undetected	11/15/2022	No
	11CL-PF3OUdS(F53B Major)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	9Cl-PF3ONS(F53B Minor)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ng/L	50,000	N/A	Undetected	11/15/2022	No
	1,4 Dioxane	ug/L	1 ug/L	N/A	Undetected	11/15/2022	No

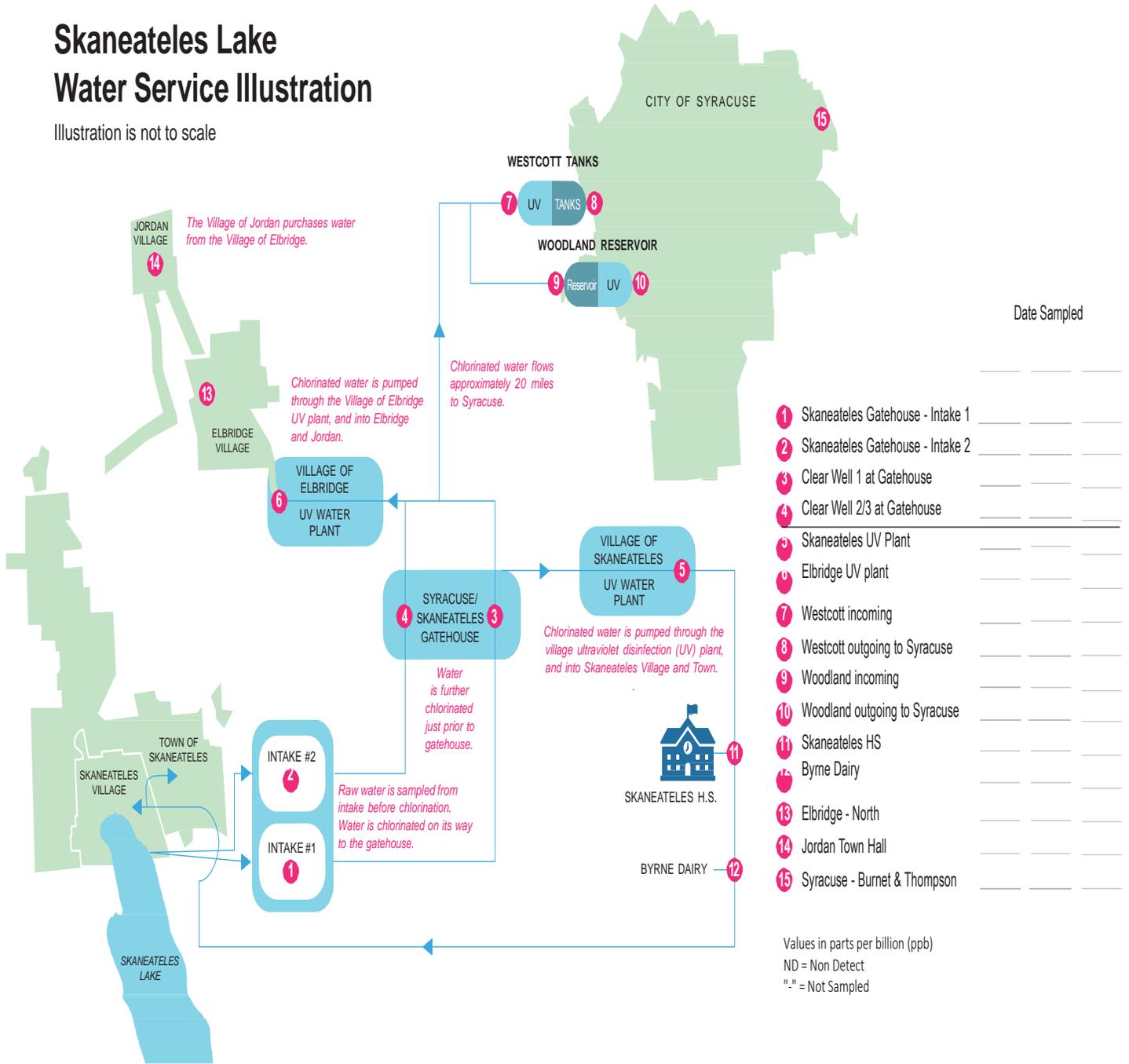
Notes:

- 1: Released into the environment from widespread use in commercial and industrial applications
- 2: Level detected below reporting limit of 1.8 ng/L

Figure 1 Skaneateles Lake Water Service Illustration

Skaneateles Lake Water Service Illustration

Illustration is not to scale



Date Sampled

1	Skaneateles Gatehouse - Intake 1			
2	Skaneateles Gatehouse - Intake 2			
3	Clear Well 1 at Gatehouse			
4	Clear Well 2/3 at Gatehouse			
5	Skaneateles UV Plant			
6	Elbridge UV plant			
7	Westcott incoming			
8	Westcott outgoing to Syracuse			
9	Woodland incoming			
10	Woodland outgoing to Syracuse			
11	Skaneateles HS			
12	Byrne Dairy			
13	Elbridge - North			
14	Jordan Town Hall			
15	Syracuse - Burnet & Thompson			

Values in parts per billion (ppb)
 ND = Non Detect
 " " = Not Sampled



8.15 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 2020. No Giardia cysts or Cryptosporidium oocysts were detected.

Since 1986, there have been 1,277 samples analyzed for Giardia and 1,265 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.

OCWA collected a total of 8 Cryptosporidium and Giardia samples in 2021 from water originating from Lake Ontario. Quarterly samples were collected from the Raw Water and Finished Water. Cryptosporidium and Giardia were not detected in any of the samples from Lake Ontario.

9. 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 2022, 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/. This site is a service of the USEPA.

9.1 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.

9.2 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 (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.

10. FLOOD HAZARDS IN SYRACUSE

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 over the last several decades including:

- The Onondaga Dam on Onondaga Creek;
- The Grand Avenue/Velasko Road Detention Basin, which reduces flood risk up to the 25-year event for Harbor Brook; and
- The Meadowbrook Detention basin, which reduces risk for the up to the 5-year event for Meadowbrook.

Even with these flood reduction measures, flood risks remain a real threat for people and property along these streams. In both August and October of 2021 water levels and flows reached their highest levels in more than 10 years on Onondaga Creek, flooding into Kirk Park and Lower Onondaga Park, as well as nearby backyards on Cheney Street.

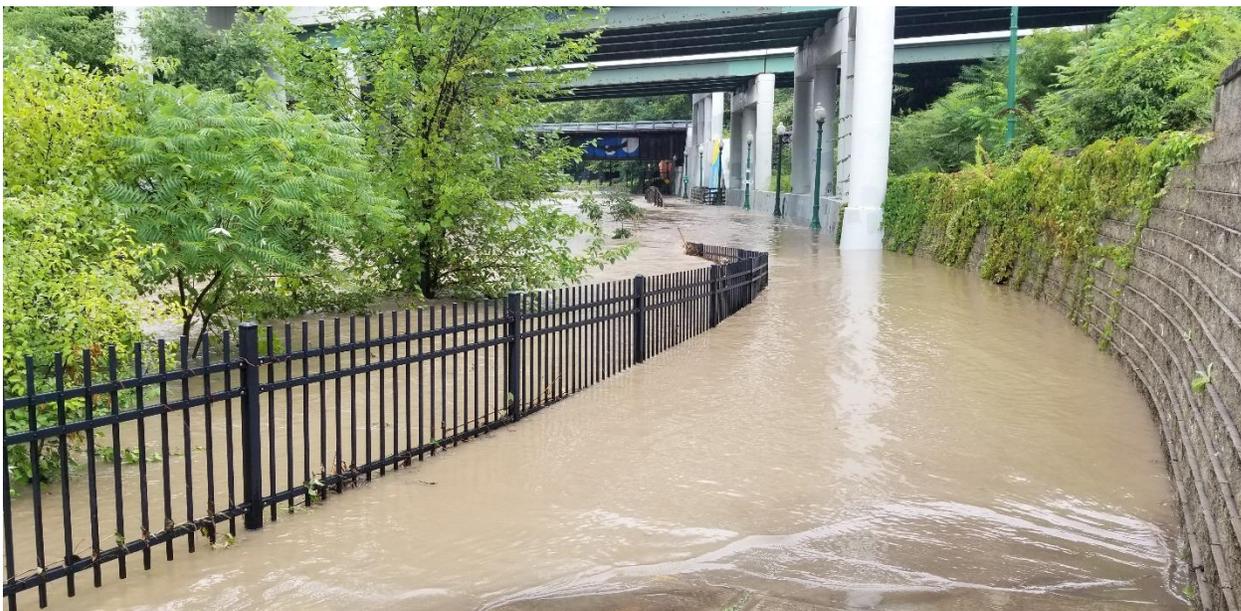


Figure 2 – Flooding along Onondaga Creek at 690 Overpass downtown – August 2021.

10.1 Safety During Floods

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.

- 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.
- Do not attempt to drive through a flooded road or moving water. The depth of water is not always obvious. The road bed may be washed out under the water, and you could be trapped. Bridge underpasses have a higher risk for flash flooding.
- 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.
- 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!

10.2 Flood Risk Reduction

10.2.1 General Hazard Preparedness

In 2020, the City of Syracuse adopted the Onondaga County Multi-Jurisdictional Hazard Mitigation Plan (HMP), which identified mitigation strategies for all forms of hazards, including flooding, that affect 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.

10.2.2 Onondaga Creek Flood Risk Reduction

As identified in the Onondaga County HMP, the City initiated a hydraulic study in April 2023 to assess if large open space areas near Dorwin Avenue could provide enough flood storage to reduce Onondaga Creek flood levels downstream, particularly in the City's Southside and Downtown areas. This effort is targeted at shrinking the floodplain in populated areas, which would reduce risks to people and property, and also remove flood insurance requirements in some areas. This study is funded by a FEMA grant and is planned to be completed by April 2024.

10.2.3 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 315-435-2260.

10.2.4 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 and substantially-improved 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 Regulatory Floodway (higher risk area close to the waterway). Projects located within the Special Flood Hazard Zone (SFHA, or commonly known as the "100-Year Flood Zone") are also subject to protective regulations. Projects in the Floodway must demonstrate by engineering analysis that they will cause no increase in base flood elevations. All projects within the SFHA, whether inside or outside of the floodway, must also maintain pre-development flood storage. The City of Syracuse Department of Engineering and the Code Enforcement websites provide additional information regarding building within the regulated floodplain.

Residential and commercial structures in the SFHA shall have the lowest floor, including basement or cellar, elevated to at least two feet above the base flood elevation. Commercial, industrial, or other non-residential structures in the SFHA can be dry-floodproofed, so that the structure is watertight below the base flood elevation plus freeboard, with walls substantially impermeable to the passage of water. Wet-floodproofing applies only to parking, access areas, and non-basement storage areas.

10.2.5 Renovation within the Floodplain: Substantial Improvement Requirements

For existing structures within the SFHA, the National Flood Insurance Program (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 would a new building in the floodplain.

10.2.6 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 Engineering (315-448-8200) or the Department of Neighborhood & Business Development, Division of Code Enforcement (315-448-8600) regarding any alteration or addition to your building or land if it is located in the special flood hazard zone. Most of these improvements will require a permit, including grading or filling of the site.

10.3 Flood Maps and Flood Insurance

10.3.1 New Flood Maps for Syracuse Issued in November 2016

In the early 2000's, the Federal Emergency Management Agency (FEMA) restudied the flood risks for Syracuse streams and provided revised flood maps to Syracuse for review. After several successful appeals by Syracuse to reduce the flood zones, FEMA finalized the maps in 2016, and the Syracuse Common Council adopted the new flood maps in September 2016. If the flood maps 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 funding for flood-related disasters.

10.3.2 Flood Insurance Rates

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). If it is within the SFHA, flood insurance is required by the lending institution.

In October 2021, FEMA and the NFIP changed the methods for determining flood insurance rates. The new rating system is called Risk Rating 2.0: Equity in Action. Risk Rating 2.0 is FEMA's new, individualized approach to risk assessment. By using new data, new flooding models, and new technology, Risk Rating 2.0 can assess many factors for individual properties, including:

- Frequency of flooding
- Multiple flood types — river overflow, storm surge, coastal erosion, and heavy rainfall
- Proximity to flood sources
- Building characteristics, such as First Floor Height and the cost to rebuild

Why did the NFIP change its risk rating system? Prior to Risk Rating 2.0, the NFIP rating methodology primarily considered flood zones and elevations and had not been updated in 50 years. This caused disparities that resulted in individuals paying more than their fair share in flood

insurance premiums. With Risk Rating 2.0, FEMA now utilizes the latest in technology that allows it to:

- Calculate rates that are equitable for all policyholders, based on the values of their buildings and individual properties' flood risks.
- Provide building owners and renters with more specific and accurate information on flood risk, which will help them make well-informed decisions on purchasing flood insurance and taking steps to mitigate flood risk.
- Improve community resilience and help disaster survivors recover faster after floods — America's number one natural disaster — which are projected to get worse across the country due to climate change.
- Ensure rate increases and decreases accurately reflect individual flood risk. The rating is specific to the building (rather than a blanket rate based on a flood map).

FEMA estimates that under Risk Rating 2.0, flood insurance rates will slightly decrease for most, but not all, homeowners within Syracuse.

10.3.3 Flood Insurance Discount of 15%

The City of Syracuse participates in the NFIP Community Rating System (CRS). This system rewards Syracuse for actively promoting sound floodplain management and working to reduce flood risks. The City's CRS rating was recertified in 2022 and provides a flood insurance discount of 15 percent for City residents. Make sure your insurance agent is aware of the insurance discount.

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

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.

10.3.4 Flood Insurance Property Tax Exemption

In January 2019, the New York State legislature passed a new law drafted by Assemblywoman Pamela Hunter which authorized a special property tax exemption for households within the City of Syracuse required to purchase flood insurance. This exemption could result in up to approximately \$750 in reduced City taxes. In order to qualify for the exemption, the property must be:

- Located within the Special Flood Hazard Area (100 Year floodplain) or within the Flood Hazard Boundary as designated by FEMA;
- A 1-3 family residential property;
- Insured through a federally-backed flood insurance policy for the current tax year;
- Have no delinquent City taxes; and
- Either be in the City's Neighborhood Revitalization Strategy Area (NRSA) or, if located outside of the NRSA, be owner-occupied with a total household income of less than \$62,985 per year.

Floods are becoming more frequent and severe.



Keeping your flood insurance policy active is now more important than ever.

FEMA's new flood insurance pricing system better informs all policyholders about the reality of increasing flood risk, so you can protect the home and life you've built.



Speak with your insurance provider today to understand how this change might affect your policy, and if your property qualifies for any premium discounts.



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* 95% of all flood insurance policyholders are insured through the National Flood Insurance Program (NFIP). * All existing policies renewing on or after April 1, 2022, are subject to the new pricing system. * Any rate increases will be gradual and will be subject to existing statutory rate caps.

For this credit, an applicant must apply every year to the City of Syracuse Assessment Department prior to January 1. Proof of required insurance is needed with the application. Application forms are available on the City website and at the City Assessment Office. (City Hall, First Floor Room 130, 233 E. Washington Street)

10.3.5 Is My House or Building in the Floodplain?

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

On-Line:

- Onondaga County Web GIS: <http://www.fsihost.com/onondaga/>
- FEMA Map Service Center website: <http://msc.fema.gov/portal>

Paper Flood Maps

- Syracuse Dept. of Engineering, Mapping Division, Room 401 City Hall; 8:00 A.M. to 4:00 P.M. weekdays (telephone 315-448-8211).
- Onondaga County Central Library Main Branch at the Galleries of Syracuse (447 S. Salina Street)

What if I think I am outside of the Special Flood Hazard Area but My Bank Requires Flood Insurance?

FEMA has established procedures to change the designation for properties incorrectly included in the SFHA. These processes are referred to as **the Letter of Map Amendment or LOMA and the Letter of Map Revision Based on Fill, or LOMR-F**. 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. The applicant will need to hire, **at their 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.

10.4 Floodplain and Flood Insurance Resources

For flood preparedness guidelines, please see:

<https://www.ready.gov/floods>

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

<https://www.floodsmart.gov>

The NYSDEC-Floodplain Bureau website also has relevant floodplain-related information:

<http://www.dec.ny.gov/lands/24267.html>

10.5 Storm Water Management

10.5.1 Reducing The Impacts of Storm water Pollution

What is Storm water?

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, consider biodegradable detergent, 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.

10.5.2 Storm Water Pollutants of Concern

- **Coliform** – Pathogens or bacteria, possibly from illicit discharges or pet waste, that are responsible for periodic beach closings.
- **Floatable** – 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.

10.5.3 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 storm water 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 storm water sewer lines, catch basins, 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 and click on the link to the SYRCITYLINE on the homepage to submit your request.

FOR MORE INFORMATION OR QUESTIONS CONTACT:

Syracuse Department of Engineering, Office of the City Engineer, 315-448-8200

Syracuse Department of Water, Office of the Commissioner of Water, 315-448-8340

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:	315-448-8360	
Engineering, Maintenance, and Operations:	315-448-8340	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.)

If you have any questions or comments about the material contained in the Drinking Water Newsletter please contact the Commissioner's office in writing (101 N Beech St, Syracuse, NY 13210), by calling 473-2609, or e-mail at waterengineering@syrgov.net.

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