

2007 Water Quality Report

We are pleased to present you Evanston's annual water quality report, an information service for our water customers. The Evanston water utility is committed to providing you with the highest quality of drinking water. In 2007, as in past years, your tap water has met all USEPA and State drinking water health standards and has had no violations to report. Of the hundreds of substances that are monitored, only a handful were actually detected in our drinking water and all substances detected were far below a level at which there is any known health risk!

Your Water Source

Lake Michigan, Evanston's source of water, is not just a major commerce artery and a recreational resource with miles of scenic shoreline, it's also a great source of drinking water! Almost half of the world's fresh water comes from Lake Michigan and the other Great Lakes. According to the United States EPA, the quality of Lake Michigan water has improved dramatically over the past 20 years. The regulations in place restrict industrial and sewage treatment plant effluents from entering Lake Michigan thereby lowering the risk of having these contaminants in the water. All 63 miles of shoreline within Illinois are now considered to be in good condition.

Summary of Illinois EPA Source Water Assessment of Lake Michigan as a Drinking Water Source

The EPA report states that there is concern for Lake Michigan water quantity and also water quality (A 1967 U.S. Supreme Court decree limits the amount of Illinois diversions of water from Lake Michigan, and currently Illinois is reaching its limit on that allocation). The Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intakes with no protection, only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois. Evanston recognized the need for treatment long before these requirements came into effect. In fact, Evanston has operated a water treatment facility for over 100 years!

All of Evanston's water intakes which bring the lake water into the treatment plant, are located far enough offshore that shoreline impacts are not considered a factor on water quality. However, at certain times of the year the potential for contamination during wet-weather flow conditions exists due to the proximity of the North Shore Channel. Lake Michigan, as well as all the great lakes, has many different organizations and associations that are currently working to either maintain or improve water quality. The report further commends Evanston's involvement in such organizations such as the West Shore Water Producer's Association, which leads to critical coordination regarding water quality issues that takes place between the utilities on the west shore of Lake Michigan.



Capital Improvement Program

In order to ensure that the water we provide to you is safe and reliable, the Evanston Water Utility continually plans improvements to renew and replace our existing infrastructure and improve services. A number of major improvements are in the design/construction phase:

- * Rehabilitation of the 1895 suction well, replacement of the service building windows, ADA compliance, expansion of the filter shop area and expansion of the administration offices are all under construction with completion scheduled for the summer of 2008.

- * An emergency interconnection between the Village of Wilmette is currently being designed. This interconnection will be capable of conveying 20 Million Gallons a day in the event of a shut down of either the Evanston Water Plant or the Wilmette Water Plant. This redundancy is an essential factor in good security planning to enable backup in the event of a critical emergency.

- * Continual upgrade of our aging infrastructure is critical to the reliable delivery of our water. New water mains scheduled for installation this year are:

- ◆ Ewing Ave. – Payne St. to Simpson St.
- ◆ Lyons St. – Leland Ave. to Hartrey Ave.
- ◆ Lemar Ave. – Emerson St. to Lyons St.
- ◆ Laurel Ave. – Emerson St. to Lyons St.
- ◆ Hartzell St. – Lincolnwood Ave. to Bennett Ave.
- ◆ Hurd Ave. – Isabella St. to Hartzell St.
- ◆ Lawndale Ave. – Isabella St. to Park St.

Today, the Water Department's 43 employees continue Evanston's tradition of excellence by working around the clock for your health and safety. We're proud of our water and pledge to continue to provide you with the highest quality water that is humanly and technologically possible.

View the City's web site at www.cityofevanston.org for more information on our water treatment process.

Thank you for the opportunity to serve you.

EVANSTON 2007 WATER QUALITY DATA

Detected Substances



Substance	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Turbidity (Cloudiness)	NA	TT=Monitored by % Exceeding 0.3 NTU and max allowed is 1 NTU	98.9% of samples meet 0.3 NTU	0.06	0.46	Soil runoff.
Fluoride (ppm)	4	4	1.0	0.90	1.13	Fluoride is added to promote dental health.
Sodium (ppm)	NA	NA	6.8	6.8	6.8	Runoff and natural erosion.
Lead (ppb)*	NA	Action Level = 15	<5	<5	5.8	Corrosion of household plumbing.
Copper (ppm)*	NA	Action Level = 1.3	0.13	<0.1	0.58	Corrosion of household plumbing.

DISINFECTION BY-PRODUCTS	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Total Trihalomethanes (ppb)	NA	80	36.9	16.5	36.9	By-product of drinking water chlorination.
Total Haloacetic Acids (ppb)	NA	60	10.0	7.3	10.0	"
Chlorine	4 MRLDG	4 MRLDG	0.4	0.3754	0.5395	Water additive used to control microbes.

Measured Parameter	Evanston Average	Evanston Minimum	Evanston Maximum
pH (0-14 pH units)	7.6	7.4	7.8
Hardness (as CaCO ₃ /L)	132	120	155
Alkalinity	100	84	114
Temperature	51.4 °F 10.8 °C	33.8 °F 1.0 °C	77.0 °F 25.0 °C

Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Cryptosporidium, E Coli and Turbidity testing:

In compliance with the new provisions of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), the Evanston Water Utility is currently undertaking monthly source water monitoring for cryptosporidium, E. coli and turbidity. Testing for these parameters began in April 2007 and will last for two years and will be completed in March 2009. The goal of the LT2ESWTR is to require water systems, whose source water is susceptible to cryptosporidium contamination, to improve control of the pathogen. Monitoring performed in 2007 did not detect any cryptosporidium, giardia or E. Coli in the source water samples collected from Evanston intakes.

ppm = parts per million or milligrams per liter

ppb = parts per billion or micrograms per liter

NTU = nephelometric turbidity units (measures water clarity)

TT = Treatment Technique, a required process to reduce the level of a contaminant.

Disinfection by-products = Total Trihalomethanes and Total Haloacetic Acids are used to regulate the amount of allowable by-products of chlorination.

MRDL - Maximum Residual Disinfection Level - The highest level of disinfectant allowed in drinking water

MRDLG - Maximum Residual Disinfection Level Goal - The level of disinfectant in drinking water below which there is no known or expected risk to health; MRDLG's allow for a margin of safety.

Fluoride = The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 ppm to 1.2 ppm.

Sodium = There is not a state or federal MCL for sodium. Sodium levels below 20 mg/l (ppm) are not considered to be a health issue.

MCLG = Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health.

mg CaCO₃/L = Milligrams of calcium carbonate per liter.

MCL = Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. A MCL is set as close to a MCLG as feasible based on what a water utility can achieve using the best available technology.

Action Level = The concentration of a contaminant which, if exceeded, triggers treatment or other requirements the water system must follow.

Lead and Copper = There is no detectable lead in the water provided to the Evanston community. Lead enters the water from lead solder, lead pipes or plumbing fixtures in the home. To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 ppb in 1992. The 90th percentile result of samples analyzed for lead and copper content in homes with lead pipes must be less than the action level of 15 ppb and 1.3 ppm, respectively. In 2005, Evanston took water samples from 30 homes with lead service lines and analyzed them for lead and copper content. All results were below the action levels. The 90th percentile level for lead was less than the detection limit of 5 ppb. The 90th percentile level for copper was 0.13 ppm, illustrated as the Evanston Result in above table.

TOC - The Evanston Water Supply monitored the percentage of Total Organic Carbon (TOC) removal quarterly and met all TOC removal requirements set by the IEPA.

*Tested every three years. Last tested 2005.

Where do contaminants come from?

In general, people obtain drinking water (both tap and bottled water) from rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- microbial contaminants from a variety of sources, 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 runoff, industrial or domestic water discharges, oil and gas production, mining or farming;
- pesticides and herbicides which come from agricultural, stormwater runoff and residential uses;
- organic chemical contaminants, including synthetic and volatile organics which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm runoff and septic tanks;
- radioactive contaminants which can be naturally occurring or the result of oil and gas production and mining activities.

The primary sources of pollution threatening Lake Michigan include air deposition (pollution from the air, rain and snow), runoff and industrial discharge.

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. In order to ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Some people may be more vulnerable to contaminants in tap or bottled 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 for infections.

These people should seek advice about drinking water from their healthcare providers. The EPA and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium are available from the Safe Drinking Water Hotline, (800) 426-4791 or visit, www.epa.gov/OW.

For specific information about the Water Department, your water's quality, a complete water quality report of all tested contaminants, or any other water-related question, please contact the Evanston Water Department at (847) 866-2942. The public is welcome to attend Council meetings where decisions related to the water treatment facility are made.



Lead in drinking water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Evanston Water Utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

Pharmaceutical and personal care products in your water

Recently, there have been various media reports regarding the presence of the presence of compounds from pharmaceutical and personal care products in Lake Michigan water. The Evanston Water Utility is currently testing for these compounds and will have the results available in early summer. Remember, these compounds are being detected in the parts per trillion level. This is equal to a single drop of water in 13 million gallons of water! Currently these are not regulated, and the USEPA is investigating at what level these compounds pose a risk to public health. The Evanston test results will be posted on www.cityofevanston.org, when they become available and also in next year's Water Quality Report.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Practice good water management skills! You can make a difference!

- * Reduce pollution
- * Conserve water
- * Protect against cross-connections!

Non-point source stormwater pollutants

Non-point source (NPS) pollution occurs when rain or melting snow carry pollutants such as oil, fertilizers, salt or animal waste into the sewer system. These pollutants are called non-point source because it is not always possible to identify their origins.

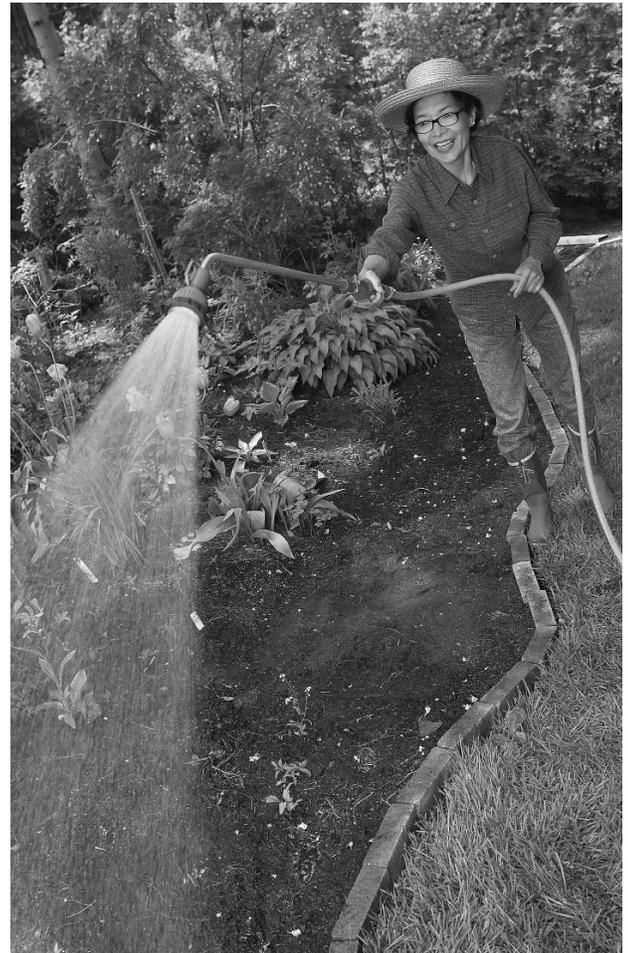
While we sometimes want to point the finger of blame at industry, the fact is that we all contribute to non-point source pollution when we dispose of household hazardous wastes through the sewer system, over fertilize our lawns and gardens, leave pet waste unattended, or allow our cars to leak automotive fluids onto Evanston streets and parking lots.

Where do pollutants go?

Evanston has a combined sewer system. This means that the contents of the sewers in the streets are mixed with the contents of household sewers. All of these wastes are sent to the water treatment plant operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). There, these wastes are treated to lower pollution levels and returned to the river system.

Treated wastewater from Evanston eventually flows into the Illinois River and then into the Mississippi River and the Gulf of Mexico. So, what happens in Evanston and other Chicago-area communities affects both the quality of river water and the quality of life for other residents of Illinois.

During severe rainfalls when the MWRDGC storage facilities and the North Shore Channel reaches capacity, untreated sewage and pollutants are discharged directly into Lake Michigan, Evanston's source of drinking water. While these events are rare, they do occasionally occur.



10 tips to reduce non-point source pollution

1. Properly dispose of household hazardous wastes such as motor oil, antifreeze, gasoline, drain cleaner, mildew remover, mothballs, lead-acid batteries, chemicals, paint and thinners. City of Evanston refuse collection crews will not collect hazardous waste products. Residents should call the Solid Waste Agency of Northern Cook County (SWANCC) at (847) 296-9205.
2. Dispose of used motor oil from cars and lawn equipment at local service stations or quick oil change businesses. Call the business before transporting the oil for disposal.
3. Apply the right amount of fertilizer to your lawn. Soil testing kits that measure nutrients and pH levels are available through your local nursery. Avoid applying fertilizers before a heavy rainstorm that will cause nutrients to wash away.
4. Keep your mowing height at three inches. Taller grass holds more water, requires less irrigation, and helps to shade out weeds. Grass clippings are a natural fertilizer.
5. Clean up pet wastes to prevent nutrients and bacteria from entering the sewer system.
6. Wash your car with a phosphate-free detergent or take your car to a local car wash where the water is recycled.
7. Check for drips under your car or truck and repair leaks immediately to keep oils off of pavement. During summer months when gas can expand, take care not to overfill gas tanks.
8. Direct roof downspouts away from driveways and foundations and towards your lawn or garden.
9. Plant native trees, grasses and flowers in your yard. These plants require less water, and their root systems hold the soil in place.
10. Clean up litter from your home, business, school, neighborhood or park.



10 tips for water conservation

1. **Test for a leaking toilet** by adding a few drops of food coloring to the tank. If any color appears in the bowl after 30 minutes, your toilet is leaking. Leaking toilets can waste thousands of gallons of water a day.
2. **Use water conserving plumbing** fixtures and water-flow constrictors on sinks and showers. Typically, bathroom facilities constitute nearly 75 percent of the water used in homes.
3. **Run your dishwasher** and washing machine only when you have a full load. Set the water level for the size of the load.
4. **Take short showers** instead of baths. A bath can use 30 to 50 gallons of water. A shower uses five gallons of water per minute, less if a flow constrictor is installed.
5. **Store drinking water** in the refrigerator instead of letting the tap run every time you want a glass of cool water. It takes longer to obtain cool water from your tap than it does to obtain hot water.
6. **Make the most** out of the water you use. Never put water down the drain when there may be another use for it such as watering a plant or garden or doing housework.
7. **Avoid using a garbage disposal.** Add your garbage to the trash instead of putting it down the garbage disposal.
8. **Choose plants that are native** to the area in which we live or plants that are drought resistant for landscaping and gardening. Group plants together based on similar watering needs.
9. **Water lawn and gardens** during the coolest part of the day to minimize evaporation. The City of Evanston Ordinance restricts watering between 10 a.m. and 4 p.m. from May 15 through September 15. Exceptions are holidays and weekends.
10. **Use a bucket of water** and a spray head on the hose to wash your car. A running hose can waste hundreds of gallons of water in the short time it takes to wash a vehicle.



Protect against cross-connections!



Keep your water safe! During the summer, we use more water. We are out washing the car, filling the wading pool or applying fertilizer with a hose end sprayer. It is important to know how to protect your water system.

Every household plumbing system potentially has a cross connection. Cross connections occur when safe, drinkable water in the household plumbing system connects to any contaminated source.

Here is a list of places in the home where cross connections may be located:

- ◆ Laundry sinks and wash basins
- ◆ Boilers
- ◆ Swimming pools
- ◆ Underground sprinkling systems

- ◆ Garden hoses connected to fertilizers or placed in buckets or swimming pools

If cross connections are not properly protected and there is a drop in water pressure, untreated sources and dirt can be pulled into your household plumbing system and the City water distribution system. This is known as backflow.

Do you realize a tool you use frequently during the summer can cause backflow problems? It is the garden hose. When the hose is submersed in water, while filling up the pool, washing the car or fertilizing the lawn and there is a drop in pressure, pollutants could be sucked through the hose and into your plumbing system. The pollutants include dirt, chemicals from pools, pesticides and herbicides.

Here are things we can do to keep our water safe:

- ◆ Do not use a hose to open a plugged drain.
- ◆ Do not leave a hose submersed in water while using a bucket or filling a pool.
- ◆ Do not leave fertilizer applicators attached to a hose while not in use.
- ◆ If you have an underground sprinkling system make sure the cross connection control device is checked annually by a licensed plumber. A copy of the report must be sent to the Evanston Water Department.
- ◆ Hose bib vacuum breakers are simple, inexpensive devices that can be installed on faucets to prevent contamination from entering your plumbing system.

Word Find

B E M U L A S F R C K I R Y M
 G U A F I L T R A T I O N T L
 P R B B L I H I L G D X E I P
 O J Q B E M A F L U O R I D E
 L A K R L A K E O M E U C I R
 L C A L C E M R P T A M O B I
 U X H B I K S A A U R I N R E
 T F I L T E T W C A L C I U M
 I R S T O R M W A F I R O T R
 O C O C R R A B S E L O R I N
 N A O B O M I E U K A B G A N
 F L E T A K R N L B R I A C L
 F C S E F A U C E T B A N O R
 C H L O N F M I R E C L I N E
 W E T N A N I M A T N O C H L

FLUORIDE
 FAUCET
 STORMWATER
 BUBBLES
 CONTAMINANT
 POLLUTION
 CHLORINE
 TURBIDITY
 LAKE
 MICROBIAL
 CALCIUM
 ORGANIC
 FILTRATION
 FLOC
 ALUM

In order to strengthen our ability to monitor and protect your water system against cross-connections, the Evanston Water Utility has enacted ordinance 104-0-07 and hired a plumbing inspector. For more information regarding the new ordinance, cross-connection control and backflow prevention please contact the Evanston Water Utility (847) 866-2942.

About your water

The Evanston Water Treatment Plant has the capacity to pump up to 108 million gallons a day of pure drinking water to Evanston and the other communities we serve: Skokie, and the Northwest Water Commission comprised of Arlington Heights, Buffalo Grove, Palatine and Wheeling. Evanston's vast water system includes 157 miles of water mains, two multimillion gallon storage facilities and almost 1,300 fire hydrants.

From the raw water pumps that bring water in from Lake Michigan, to the finished water pumps that send the treated water to your home, system redundancies like auxiliary natural gas engines are in place so you'll never go without safe drinking water.

Here's how it's done:



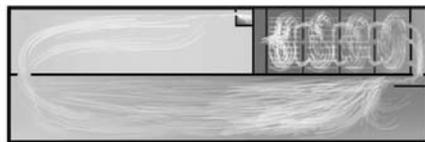
From Lake Michigan...



...to our Pumping Facility...



..."Flash" mixed and disinfected...



...taken through our settling process...



...filtered for purity...



...and brought to your tap!



Water myths and realities



Myth: There are more pollutants in drinking water today than there were 25 years ago.

Reality: Not necessarily. Twenty-five years ago, we did not have the technology to know what was in our drinking water. Today, we have sophisticated testing instruments that enable us to know more about our water than ever before. The drinking water community is continually improving treatment processes as it learns more each year.

Myth: Using a home water treatment device will make tap water safer or healthier to drink.

Reality: Some people use home water filters to improve the taste, smell or appearance of their tap water, but it does not necessarily make the water safer or healthier to drink. Additionally, all home treatment devices require regular maintenance. If the maintenance is not performed properly, water quality problems may result.

Myth: Evanston has hard water that requires a softener.

Reality: No. Evanston's water is considered to be moderately hard. It ranges from 123 parts per million of hardness to 168 and averages 136 parts per million or approximately 7.5 grains. This level of hardness does not require the use of a water softener. Hardness in drinking water is caused by two nontoxic chemicals-usually called minerals - calcium and magnesium. If either of these minerals is present in your water in substantial amounts, the water is said to be "hard," because making a lather or suds for washing is "hard" (difficult) to do. Thus cleaning with hard water is difficult. Water containing little calcium or magnesium is called "soft" water.

Tap Water: Good for you, good for the environment!



Water is important to keep our bodies healthy. It flushes toxins from the body and carries nutrients to cells.

Water will perform these functions whether it is from a bottle or the tap. So which is really better for us? Neither provides greater health benefits or is safer than the other. Both tap and bottled water are required to meet the same Environmental Protection Agency (EPA) water quality standards.

However, bottled water which is regulated by the Food and Drug Administration (FDA) has weaker regulations regarding how frequently it is moni-

tored. Tap water is strictly regulated by the EPA, which means your local water is monitored continuously to ensure the highest water quality possible.

So why is tap water the better option? Tap water is safe, more environmentally sustainable and cheaper than bottled water. When opening the cap on your bottle of water consider these facts:

- ✓ It is estimated that only 12% of the 28 billion plastic water bottles that are purchased each year in the United States are recycled.

- ✓ Nine out of ten bottles end up in landfills or as litter. Equal to 30 million in one day and over 10 billion in one year.

- ✓ It can take almost 1,000 years for buried water bottles to degrade.

- ✓ The production of bottles for water in the United States requires 1.5 million barrels of oil per year. That is enough oil to generate electricity for 250,000 homes or fuel for 100,000 cars per year.

- ✓ There is also a concern of chemicals, such as bisphenol A, leaching from the plastic bottle into the water it contains.

- ✓ Cost! Bottled water can cost up to 4,000 times as much as tap water.

- ✓ Consider this cost comparison. Tap water is priced at \$.002/gallon whereas bottled water \$1.00-\$8.40/gallon.

- ✓ 40% of bottled water comes from municipal sources. Why pay 4,000 times more?!

Here are ways you can help reduce the ecological impact of bottled water:

- ✓ Drink bottled water only when absolutely necessary.

- ✓ Use reusable stainless steel containers and carry tap water with you when traveling.

- ✓ At public events and at home, offer pitchers of water.

The Evanston Water Utility is proud of the high water quality it delivers to its residents and businesses.

Visit us May 31 for Public Works Day at the Farmers' Market to be a part of our water taste test and to learn more about our new tap water campaign and your local water supply!

Are **YOU** drinking enough water?

- ◆ 75% of Americans are chronically dehydrated.
- ◆ Even mild dehydration will slow down one's metabolism as much as 3%.
- ◆ Lack of water is the number one trigger of daytime fatigue.
- ◆ Preliminary research indicates that 8-10 glasses of water per day could significantly ease back and joint pain for up to 80% of sufferers.
- ◆ A mere 2% drop in body water can trigger fuzzy short-term memory, trouble with basic math and difficulty focusing on the computer screen or printed page.
- ◆ Drinking five glasses of water per day decreases the risk of colon cancer by 45%, can reduce the risk of breast cancer by 79%, and 50% less likely to develop bladder cancer.
- ◆ Our bodies are composed of 60% water. In order to maintain adequate hydration adults should consume 6-8 glasses of water per day and children should consume 4-6 glasses per day.