

2012 Drinking Water Quality Report

*Featuring 2011
Tap Water Quality
Results*

This report is being mailed to you as a requirement of the Federal Safe Drinking Water Act.
NOTE: Industrial and commercial customers, including hospitals, medical centers and health clinics,
please forward this report to your Environmental Compliance Manager.

**Philadelphia's water is safe and healthy to drink for most people. For people
with special health concerns, please see the information on page two.**



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*PWD is an active and proud
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Schuylkill Action Network
Tookany/Tacony-Frankford (TTF)
Watershed Partnership
Water Environment Federation
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Water Research Foundation

This report is available online at
<http://www.phila.gov/water> and
<http://www.phillywatersheds.org>

Customer Information Hotline:
215-685-6300



The Philadelphia Water Department

The Philadelphia Water Department (PWD) is pleased to present our annual Water Quality Report. This report, published in April 2012, includes water quality information for the 2011 calendar year.

The good news is – your tap water is top quality. Our Water Quality Report provides our customers with a summary of where Philadelphia's drinking water comes from, how it is treated and the results of water quality monitoring performed by us on a daily basis.

The U.S. Environmental Protection Agency (EPA) requires all water utilities to produce and distribute water quality reports on an annual basis.

We have consistently performed better than

all drinking water standards developed by the EPA to protect public health.

How do we do this? We use proven treatment practices at our water treatment plants and we participate in groundbreaking research while keeping water rates among the lowest in the region.

Para obtener una copia del informe en Español sobre los resultados más recientes de la calidad del agua publicado por el Departamento de Agua de Philadelphia, llame al 215-685-6300.

People With Special Health Concerns

Some people may be more vulnerable to contaminants 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 and other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

U.S. Environmental Protection Agency (EPA)/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline: 800-426-4791.

Our standards are the highest: PWD drinking water quality is better than all drinking water standards developed by the EPA to protect public health.

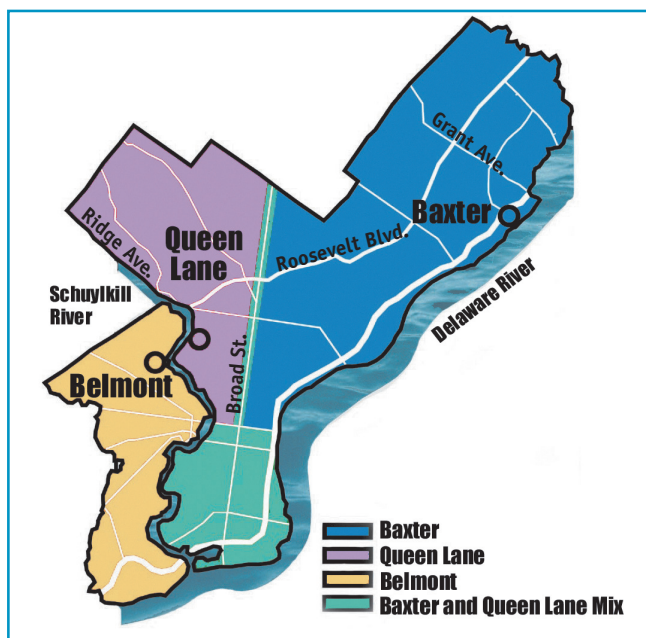
Where does Philadelphia's drinking water come from?



Philadelphia is located in the Delaware River Watershed, which begins in New York State and extends 330 miles south to the mouth of the Delaware Bay. The Schuylkill River is part of the Delaware River Watershed.

Map Courtesy of the Delaware River Basin Commission. Delaware River Basin Commission Map Collection.

The water that we treat comes from the Schuylkill and Delaware rivers. Rivers are surface water supplies. Philadelphia does not use groundwater. Each river contributes approximately one-half of the City's overall supply. We produce approximately 250 million gallons of high-quality drinking water for our customers on a daily basis.



PWD has three water treatment plants that process untreated river water. Depending on where you live, you receive drinking water from one of these three plants. The Queen Lane Plant is located in East Falls and its water comes from the Schuylkill River. Its intake is located along Kelly Drive. The Belmont Plant is located in Wynnefield and its water also comes from the Schuylkill River. Its intake is located along Martin Luther King, Jr. Drive. The Baxter Plant is located in Torresdale and its water comes from the Delaware River. Its intake is located at the plant on the Delaware River.

Safeguarding the water you drink

At their sources, the Delaware and Schuylkill Rivers are generally clean. But as the rivers flow downstream, they pick up contaminants from many sources – stormwater runoff washes pollutants on the land into the rivers, and communities and industries discharge used water back into the rivers. Today, the City enjoys watersheds that are cleaner and healthier than they have been in well over a century. Although we have seen a dramatic improvement in the water quality of the City's two major rivers since the passage of the Federal Clean Water Act in the early 1970s, there is still more work that needs to be done to protect our drinking water sources from pollution.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) has regulations that limit the amount of certain contaminants in water provided by water suppliers. The Food and Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health.

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 (800-426-4791) or from their website (<http://www.epa.gov/safewater>).

Partnership for Safe Water

The Philadelphia Water Department (PWD) consistently produces high quality drinking water, substantially better than the drinking water quality standards set by State and Federal regulations. As a member of the Partnership for Safe Water* since 1996, PWD has adopted, as standard practice, treatment goals far stricter than the regulatory requirements.

In 2008, the Baxter, Queen Lane and Belmont Water Treatment Plants were honored with the Partnership for Safe Water 10-Year Director's Award in recognition of PWD's decade-long commitment to achieving and maintaining the highest possible drinking water quality.

The turbidity of Philadelphia's water is 80 percent less than the maximum of 0.30 NTU allowed by State and Federal regulations and is 40 percent less than the Partnership for Safe Water turbidity goal of 0.10 NTU.

Since 1998, PWD's average turbidity level (measure of water clarity) of drinking water has been at or below 0.06 nephelometric turbidity units (NTU).

Through our participation in this program, we have surveyed our treatment plants, treatment processes, operating and maintenance procedures and management oversight practices, which have helped to enhance our water system's ability to prevent Cryptosporidium, Giardia and other microbial contaminants from entering the water we treat.

**The Partnership for Safe Water is a voluntary optimization program conceived and initiated by the U.S. Environmental Protection Agency, the American Water Works Association, the Association of Metropolitan Water Agencies and advocated by the Pennsylvania Department of Environmental Protection. Pennsylvania leads the nation in participation in this program and the Philadelphia Water Department is one of Pennsylvania's leaders.*



How do drinking water sources become polluted?

Across the nation, sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water (such as rain and melting snow) travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals 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 stormwater 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 stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production. They can also come from gas stations, urban stormwater runoff (from streets and parking lots) and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Why is chlorine used to disinfect the drinking water?

State and Federal laws require the disinfection of all public water supplies. EPA and health agencies recognize that using chlorine is the most effective way to protect public health from disease-causing organisms that can be found in rivers and streams. However, chlorine can chemically react with natural materials in rivers to form disinfection byproducts, such as trihalomethanes and haloacetic acids.

We have been adjusting our treatment process over the years to reduce this chemical reaction. But we also ensure that the treated water that is distributed through the City's water mains to your homes has a "chlorine residual." This residual continues to protect your water against bacteria and other organisms on its journey to your home tap.

We now use sodium hypochlorite, a safer form of chlorine similar to household bleach, to disinfect the water at our treatment plants.

Lead in drinking water

It is important to minimize the intake of lead from dust inhalation, food and water. Children are particularly susceptible to the health effects of lead poisoning. Lead is most commonly found in dust, paint and contaminated soil. To a lesser extent, lead can also occur in tap water. When detected in tap water, it usually comes from older home plumbing or lead service pipes. When disturbed, such as for a repair, these lines can contribute to lead in tap water. It is the homeowner's responsibility to maintain, repair and replace the service lines.

Our primary role in helping you minimize your intake of lead is to reduce the corrosive effects of tap water on materials that contain lead. Water is corrosive and encourages the dissolving of lead from these materials. The Philadelphia Water Department has a permit with the PA Department of Environmental Protection (PA DEP) for operating under optimized corrosion control, to minimize lead leaching from plumbing materials.

Currently, every three years, the Philadelphia Water Department tests for tap water lead at more than 50 representative taps of vulnerable homes in the City. We do this according to the requirement of the EPA's Lead and Copper Rule. The testing results are used to determine if our corrosion control treatment technique is working, so that water has minimum potential for lead to leach from plumbing materials. So far, our test results show that our treatment techniques keep lead levels to a minimum. For the 2011 test results, please see the chart on page 8.

These test results could change in any year, however, because Philadelphia is required to meet other regulations for tap water quality. Sometimes these water quality changes can affect the corrosion potential of the water. If such a change were to occur, the Philadelphia Water Department would notify its customers of the change while it works to return to minimum corrosion conditions again. Water utilities all over the country are in the same position as Philadelphia, trying to balance all of the regulatory requirements and changes at one time so that their customers receive the best quality water possible. We are committed to reducing the corrosive effects of plumbing and lead levels in water. Additional information is available from the EPA's Safe Drinking Water Hotline at 800-426-4791 or from their website at <http://water.epa.gov/drink/info/lead>.

Research and Monitoring:

Cryptosporidium and Giardia

Cryptosporidium and *Giardia* are microscopic organisms found in rivers and lakes throughout the United States. When ingested, or contracted in another way than through the water, *Cryptosporidium* and *Giardia* can result in diarrhea and abdominal cramps. However, these are also symptoms of intestinal diseases caused by many bacteria, viruses and parasites. Most healthy individuals can overcome such illnesses within a few weeks, however, immuno-compromised people are at a greater risk of developing a life-threatening illness. Immuno-compromised individuals are encouraged to consult with their doctors about taking appropriate precautions to avoid infections.

PWD works closely with the Philadelphia Department of Public Health to ensure that our tap water is free of pathogens that can be found in rivers. The Philadelphia Department of Public Health monitors for those who are diagnosed with diseases and would contact the Water Department if there were any concerns that the drinking water may be contributing to illnesses.

The Water Department is one of the nation's leaders in *Cryptosporidium* research and was one of the first utilities in the U.S. to monitor for the organism. The Water Department's Office of Watersheds manages a source water protection program that looks at protecting the rivers in the City as well as further upstream of Philadelphia. *Cryptosporidium* can originate from other sources such as dogs, geese, cows, horses, etc. By identifying the sources of *Cryptosporidium* in the watershed, PWD is taking a proactive approach in improving the rivers' water quality.

Pharmaceuticals in Drinking Water

The Philadelphia Water Department has been supporting and conducting research on pharmaceuticals and personal care products in drinking water since 2004. This issue exists throughout the United States, and even worldwide, wherever pharmaceuticals are utilized. Pharmaceuticals get into drinking water because people use medications, both prescription and over the counter. Only a small portion of these substances is absorbed in the body. The rest passes through the body, eventually making its way into the wastewater and from there, back into the waterways that serve as our nation's drinking water sources.

The pharmaceuticals detected in Philadelphia are in extremely low concentrations. There is currently no indication that any trace concentrations of such chemicals would pose any public health risk. The Philadelphia Water Department will continue to stay abreast of this issue to ensure the safety of our drinking water and the protection of our watersheds.



You can help keep unused pharmaceuticals out of the water supply by paying attention to how you dispose of unused medications. Look for take-back programs that may be established near you, either through pharmacies or through household hazardous waste collection programs. For more information, please visit: <http://www.phila.gov/water/pdfs/pharm-20080915.pdf>.

The Drug Enforcement Agency (DEA) sponsored national take-back programs in the spring and fall of 2011, in coordination with State and local law enforcement agencies. The national take-back day provided an opportunity for the public to surrender expired, unwanted or unused pharmaceuticals and other medications to law enforcement officers for proper disposal. To find out about future take-back events, visit DEA's website at www.dea.gov or call 215-238-5172.

Fluoride Reduction

The public health impact of fluoridating community water supplies was identified by the Centers for Disease Control and Prevention (CDC) as one of ten great public health achievements of the 20th century. This breakthrough in health knowledge led to many benefits to water drinking citizens.

However, due to new reports from the U.S. Department of Human Services regarding fluoride concentrations in 2012, the Philadelphia Water Department (PWD) lowered the fluoride level from an average of 1.0 milligram per liter (mg/L) to 0.7 mg/L. This change was made in cooperation with the Philadelphia Department of Public Health and the Pennsylvania Department of Environmental Protection.

Fluoridation has been successfully practiced in the United States since 1945 and PWD has been fluoridating its water since 1951. However, new research has concluded that a fluoride level of 0.7mg/L achieves a better balance between the prevention of tooth decay and the risk of dental fluorosis.





Drinking Water Treatment

How Do We Treat the Water So That You May Drink It?

Like the majority of water utilities in the U.S., we use a multi-step treatment process at all three of our drinking water treatment plants. This Water Treatment Process diagram provides a brief description of drinking water treatment in Philadelphia.

1. The River

The source of the water is from either the Delaware or Schuylkill River.

2. Natural Settling

After it has been pumped from the river, water is stored in reservoirs or basins for about 24 hours, to allow sediments to settle.

3. Disinfection

Sodium hypochlorite, a chemical compound containing chlorine, is added to kill disease-causing organisms.

4. Coagulation

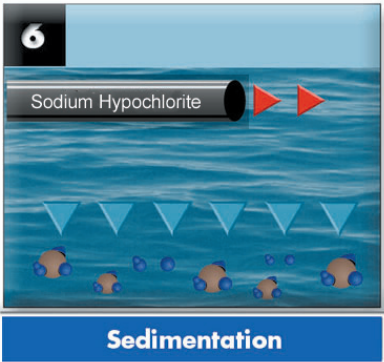
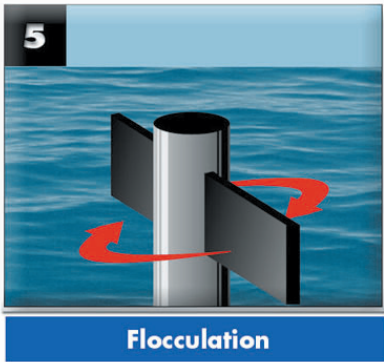
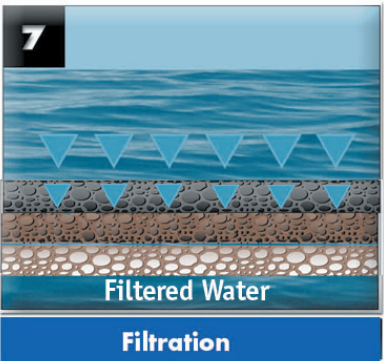
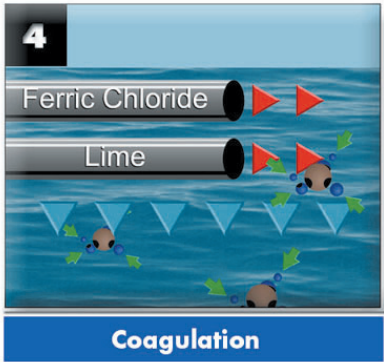
The river water is coagulated. Chemicals are added to the water to cause smaller particles in the water to join together, and the pH is adjusted to aid in coagulation. This process makes the particles heavier so that they will settle to the bottom of the basin.

5. Flocculation

The water is mixed gently to make sure the added chemicals are well blended and react with all of the smaller particles. The particles combine to form “floc” which settle to the bottom of the basin.

6. Sedimentation

The newly joined particles or “floc” settle by gravity and are removed from the bottom of the mixing tanks. More sodium hypochlorite is added for disinfection.



7. Filtration

The water flows by gravity through filters of sand and crushed coal, which remove very small particles that might never settle by gravity.

8. Final Treatment

Fluoride is added to help prevent tooth decay. Zinc orthophosphate is added to minimize rusting of metal pipes by the water. Ammonia is added to reduce the flavor of chlorine and to help the sodium hypochlorite to persist in the water while it travels through the water main system, or to remain active in the water all the way to our customers’ faucets.

9. Distribution

The treated water is distributed through 3,137 miles of water mains to 480,000 households in Philadelphia.

Photo by B. Krist for GPTMC

EPA, PADEP and Safe Drinking Water Regulations require drinking water utilities to monitor for about 100 regulatory parameters. These regulatory parameters are defined with their maximum contaminant level (MCL) and maximum contaminant level goal (MCLG) under federal rules such as the: Total Coliform Rule, Surface Water Treatment Rule, Disinfectants and Disinfection Byproducts Rule, Lead and Copper Rule and the Radionuclides Rule. We monitored for the regulatory parameters listed below. Tables on pages 8 and 9 summarize monitoring results for parameters found at detectable levels. Please see a glossary of terms and abbreviations on page 10.

Appealing to Your Senses

We also test for aluminum, chloride, color, iron, manganese, odor, pH, silver, sulfate, surfactants, total dissolved solids and zinc to ensure that your water meets all water quality taste and odor guidelines. This is so that your water looks, tastes and smells the way it should.

Inorganic Chemicals:

Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Mercury, Nickel, Selenium, Thallium, Cyanide Free, Fluoride

Synthetic Organic Chemicals:

2,4-D, 2,4,5 TP (Silvex), Atrazine, Alachlor, Chlordane, Benzo(a)Pyrene, Carbofuran, Dalapon, 1,2-Dibromo-3-chloropropane, Dinoseb, Dioxin, Diquat, Endothall, Endrin, Ethylene Dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, PCBs Total, Picloram, Bis(2-Ethylhexyl)phthalate, Bis(2-ethylhexyl)adipate, Pentachlorophenol, Oxamyl, Simazine, Toxaphene

Volatile Organic Chemicals:

Benzene, Carbon Tetrachloride, 1,2-Dichloroethane, o-Dichlorobenzene, p-Dichlorobenzene, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, Styrene, Tetrachloroethylene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, o-Xylene, m,p-Xylenes

Temperature and Cloudiness:

The temperatures of both the Schuylkill and Delaware rivers vary seasonally from approximately 32 degrees to 88 degrees Fahrenheit. PWD does not treat the water for temperature. Cloudiness most commonly happens in the winter, when the cold water in the mains is warmed up quickly by household plumbing. Cloudiness is visible during aeration, when the water flowing from your tap into a glass appears cloudy. This temporary condition is a result of dissolved air being released from the water and becoming suspended in the water in the glass.



SODIUM IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	23 ppm or 5 mg per 8 oz. glass of water	41 ppm or 10 mg per 8 oz. glass of water	41 ppm or 10 mg per 8 oz. glass of water
Range	13 - 57 ppm 3 - 13 mg per 8 oz. glass of water	21 - 97 ppm 5 - 23 mg per 8 oz. glass of water	22 - 107 ppm 5 - 25 mg per 8 oz. glass of water
NOTE: We conducted monitoring for sodium throughout the year, although Federal regulations do not require it.			

HARDNESS IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	81 ppm or 5 gpg	135 ppm or 8 gpg	164 ppm or 10 gpg
Minimum	57 ppm or 3 gpg	96 ppm or 6 gpg	102 ppm or 6 gpg
Maximum	104 ppm or 6 gpg	178 ppm or 10 gpg	211 ppm or 12 gpg
Hardness defines the quantity of minerals, such as calcium and magnesium, in water. These minerals react with soap to form insoluble precipitates and can affect common household chores such as cooking and washing. Philadelphia’s water is considered “medium” hard.			

ALKALINITY IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	35 ppm	60 ppm	62 ppm
Minimum	20 ppm	33 ppm	37 ppm
Maximum	48 ppm	77 ppm	78 ppm

2011 DRINKING WATER QUALITY RESULTS

Listed on pages eight and nine are our Drinking Water Quality Results for 2011. All results are better than the recommended Federal levels designed to protect public health. By reporting these results in the tables below, we are meeting a requirement of the EPA. Please see the glossary on page 10 for definitions of abbreviations used in the tables. Some contaminants may pose a health risk at certain levels. Others, such as turbidity, are used as indicators for treatment plant performance. For information about potential risks, please visit our website (<http://www.phila.gov/water>), or call us at 215-685-6300. We will be happy to mail them to you.

LEAD AND COPPER - Tested at Customers' Taps - Testing is done every 3 years. Most recent tests were done in 2011.

	EPA's Action Level for representative sampling of customer homes	Ideal Goal (EPA's MCLG)	90% of PWD customers' homes were less than	No. of homes considered to have elevated levels	Violation	Source
Lead	90% of homes must test less than 15 ppb	0 ppb	5.8 ppb	2 out of 92	No	Corrosion of household plumbing
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.32 ppm	1 out of 92	No	Corrosion of household plumbing

INORGANIC CHEMICALS (IOC) – PWD monitors for IOC more often than required by EPA.

	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results for the Year	Violation	Source
Barium	2 ppm	2 ppm	0.037 ppm	0.022 - 0.037 ppm	No	Discharges of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	100 ppb	100 ppb	2 ppb	0 - 2 ppb	No	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide Free	200 ppb	200 ppb	68 ppb	26 - 68 ppb	No	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride	2 ppm*	2 ppm*	1.02 ppm	0.96 - 1.02 ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	10 ppm	10 ppm	4.11 ppm	0.51 - 4.11 ppm	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits

*EPA's MCL and MCLG is 4ppm, but PADEP has set this lower MCL and MCLG, which takes precedence.

BACTERIA IN TAP WATER (Tested throughout Distribution System. Over 450 samples collected throughout the City every month.)

	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly % or Yearly Total of Positive Samples	Monthly Range (% or #)	Violation	Source
Total Coliform	5% of monthly samples are positive*	0	0.89%	0 - 0.89%	No	Naturally present in the environment
Fecal Coliform or <i>E. coli</i>		0	2	0 - 2	No	Human or animal fecal waste

*Every sample that is positive for total coliforms must also be analyzed for either fecal coliforms or *E. coli*. If a system has two consecutive total coliform positive samples, and one is also positive for *E. coli*. fecal coliforms, the system has an acute MCL violation.

RADIOLOGICAL CONTAMINANTS

	EPA's MCL	EPA's MCLG	Highest Result	Yearly Range	Violation	Source
Alpha Emitters	15 pCi/L	0 pCi/L	3.5 pCi/L	0 - 3.5 pCi/L	No	Erosion of natural deposits
Beta Emitters	50 pCi/L*	0 pCi/L	17.5 pCi/L	0.84 - 17.5 pCi/L	No	Decay of natural and man-made deposits
Combined Radium 226 & 228	5 pCi/L	0 pCi/L	1.73 pCi/L	0 - 1.73 pCi/L	No	Erosion of natural deposits
Combined Uranium	30 µg/L	0 µg/L	0 µg/L	0 - 0 µg/L	No	Erosion of natural deposits

*The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

DISINFECTION BYPRODUCTS IN TAP WATER						
	Highest Level Allowed (EPA's MCL) One Year Average	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average	Violation	Source
Total Trihalomethanes (TTHMs)	80 ppb	41 ppb Range of individual test results: 17 - 85 ppb	39 ppb Range of individual test results: 17 - 87 ppb	42 ppb Range of individual test results: 20 - 85 ppb	No	Byproduct of drinking water disinfection
Total Haloacetic Acids (THAAs)	60 ppb	42 ppb Range of individual test results: 21 - 80 ppb	27 ppb Range of individual test results: 8 - 45 ppb	24 ppb Range of individual test results: 15 - 40 ppb	No	Byproduct of drinking water disinfection

TOTAL ORGANIC CARBON (Tested at Water Treatment Plants)					
Treatment Technique Requirement	Baxter WTP One Year Range	Belmont WTP One Year Range	Queen Lane WTP One Year Range	Violation	Source
Percentage of Removal Required	35 - 45%	25 - 35%	25 -35%	n/a	Naturally present in the environment
Percentage of Removal Achieved	37 - 63%	33 - 48%	37- 59%	No	
PWD achieved TOC removal requirements in all quarters of 2011 at all WTPs. Compliance is based on a running annual average.					

TURBIDITY – A MEASURE OF CLARITY (Tested at Water Treatment Plants)					
	Baxter WTP	Belmont WTP	Queen Lane WTP	Violation	Source
Treatment Technique Requirement <i>95% of samples must be at or below 0.300 NTU</i>	100% below 0.300 NTU	100% below 0.300 NTU	100% below 0.300 NTU	No	Soil runoff, river sediment
Highest single value for the year	0.094 NTU	0.089 NTU	0.090 NTU	No	

TOTAL CHLORINE RESIDUAL (Tested at Water Treatment Plants. Samples taken every three hours.)					
Sample Location	Minimum Residual Disinfectant Level	Lowest Level Detected	Yearly Range	Violation	Source
Baxter WTP	0.2 ppm	1.90 ppm	1.90 - 3.10 ppm	No	Water additive used to control microbes
Belmont WTP	0.2 ppm	1.79 ppm	1.79 - 2.68 ppm	No	
Queen Lane WTP	0.2 ppm	1.80 ppm	1.80 - 3.00 ppm	No	

TOTAL CHLORINE RESIDUAL (Tested throughout Distribution System. Over 450 samples collected throughout the City every month.)					
Sample Location	EPA's MRDL/MRDLG	Average	Yearly Range	Violation	Source
Distribution System	4.0 ppm	2.78 ppm	0.00 - 3.27 ppm	No	Water additive used to control microbes

VOLATILE AND SYNTHETIC ORGANIC CHEMICALS (VOC and SOC)						
Chemical	(EPA's MCL)	(EPA's MCLG)	Highest Result	Yearly Range	Violation	Source
Atrazine	3 ppb	3 ppb	0.07 ppb	0 - 0.07 ppb	No	Runoff from herbicide used on row crops
Dalapon	200 ppb	200 ppb	10.0 ppb	0 - 10.0 ppb	No	Runoff from herbicide used on rights of way
Hexachlorocyclopentadiene	50 ppb	50 ppb	0.049 ppb	0 - 0.049 ppb	No	Discharge from chemical factories

GLOSSARY

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. The action level is not based on one sample; instead, it is based on many samples.

Alkalinity: A measure of the water's ability to resist changes in the pH level and a good indicator of overall water quality. Although there is no health risk from alkalinity, we monitor it to check our treatment processes.

***E. coli* (*Escherichia coli*):** A type of coliform bacteria that is associated with human and animal fecal waste.

GPG – Grains Per Gallon: A unit of water hardness. One grain per gallon is equal to 17.1 parts per million.

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 or expected risk to health. MCLGs allow for a margin of safety.

mg/L - Milligrams per liter: One milligram per liter is equal to one part per million.

MRDL (Maximum Residual Disinfection Level): The highest level of disinfectant that is allowed in drinking water. The addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG (Maximum Residual Disinfection Level Goal): The level of a disinfectant in drinking water 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 contaminants.

Minimum Residual Disinfectant Level: The minimum level of residual disinfectant required at the entry point to the distribution system.

ntu - nephelometric turbidity units: Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

pCi/L - Picocuries per liter: A measure of radioactivity.

ppm - part per million: Denotes 1 part per 1,000,000 parts, which is equivalent to two thirds of a gallon in an Olympic sized swimming pool.

ppb - part per billion: Denotes 1 part per 1,000,000,000 parts, which is equivalent to half a teaspoon in an Olympic sized swimming pool.

ppt - part per trillion: Denotes 1 part per 1,000,000,000,000 parts, which is equivalent to one drop in 20 Olympic sized swimming pools.

SOC – Synthetic Organic Chemical: Commercially made organic compounds, such as pesticides and herbicides.

Total Coliform: Coliforms are bacteria that are naturally present in the environment. Their presence in drinking water may indicate that other potentially harmful bacteria are also present.

THAAs - Total Haloacetic Acids: A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

TOC - Total Organic Carbon: A measure of the carbon content of organic matter. This measure is used to indicate the amount of organic material in the water that could potentially react with a disinfectant to form disinfection byproducts.

TTHMs - Total Trihalomethanes: A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the clarity of water related to its particle content. Turbidity serves as an indicator for the effectiveness of the water treatment process. Low turbidity measurements, such as ours, show the significant removal of particles that are much smaller than can be seen by the naked eye.

VOC – Volatile Organic Chemicals: Organic chemicals that can be either man-made or naturally occurring. These include gases and volatile liquids.

WTP: Water Treatment Plant

We welcome your ideas and opinions

We participate in nearly 200 public and community events a year, including presentations made at schools, on-going educational programs and other environmental celebrations.

We offer ways for individuals, families, students, seniors, community groups and others to participate in learning about protecting water.

We greatly benefit from our Citizens Advisory Council, which has been working with us over the last few years to improve our communications with our customers. Citizens representing business and industry, education, environmental advocacy, senior citizens, regulatory agencies, and civic and community groups have assisted us in developing public information about a variety of topics, including drinking water quality and stormwater pollution prevention. Interested citizens are welcome to attend our Water Quality Education Citizens Advisory Council meetings. Call our Hotline at 215-685-6300 to confirm the meeting dates, times and locations.

Getting Involved

If you would like to help protect your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit our website at www.phillywatersheds.org, or see Table 2 on page 14.

How to contact us

You can write to us at:
Philadelphia Water
Department ARAMark Tower
1101 Market Street, 3rd Floor
Philadelphia, PA 19107-2994

You can call our Customer
Information Hotline at
215-685-6300.



SAN MISSION:

The mission of the Schuylkill Action Network (SAN) is to improve the water resources of the Schuylkill River Watershed by working in partnership with State agencies, local watershed organizations and land conservation organizations, businesses, academics, water suppliers, local governments, regional agencies and the Federal government to transcend regulatory and jurisdictional boundaries in the strategic implementation of protection measures.

The SAN provides:

- Central coordination of restoration and protection efforts for the entire Schuylkill River;
- Consensus-based plans for the watershed built on sound science, data and stakeholder input; and,
- Prioritized ranking of projects that will have the greatest impact on protecting and restoring the health of the Schuylkill River.

\$3.3 million: Funds awarded for Schuylkill Action Network priority projects (2010-2011) from Federal, State, local and private sources

164: Number of SAN organizations in 2011

415: Number of SAN members in 2011

SAN Members:

- Citizens
- Non-profits
- Universities
- Funders
- Water suppliers
- Corporations
- Federal, State and local governments

POLLUTION SOURCES ADDRESSED IN 2011

Agriculture: SAN Agriculture Projects are designed to treat excessive loadings of nutrients and contaminated stormwater runoff.

- 6,500 feet of streambank fencing has been installed
- 5,870 feet of streambank protected
- 48 Conservation and Nutrient Management Plans completed on watershed farms
- 3 manure storage facilities and barnyard retrofits completed
- 5 Comprehensive Farm Management Plans completed

Abandoned Mine Drainage (AMD):

The upper watershed is impacted by polluted water seeping from abandoned coal mines that discharge iron, manganese and aluminum to the Schuylkill River.

- 2 studies/models completed for AMD remediation and prevention
- 6,000 Trees planted on abandoned mine lands
- 3 projects completed to reduce water infiltration into the mine pool (AMD Prevention)
- Funding secured for 2 AMD remediation projects (over \$1 Million)
- 3 mine land reclamation projects completed

Stormwater: SAN Stormwater projects are designed to reduce the volume and velocity, and improve the quality, of stormwater runoff on priority areas in the Schuylkill Watershed.

- 6 stormwater management projects completed on school campuses throughout the watershed (1 rain garden, over 200 trees planted along streams, 2 meadows)
- 5,000 stormwater management guides for large property owners printed

Land Protection: SAN Watershed Land Protection projects promote and implement activities that lead to the conservation of the highest priority lands for drinking water protection.

- Provided outreach to 20 municipalities with a large percentage of priority lands.
- 2 land transaction assistant projects completed, protecting 140 acres of priority watershed land and leveraging over \$340,000 in land value.

WATERSHED PROTECTION

Schuylkill and Delaware River Source Water Protection Plans

The Schuylkill and Delaware River Source Water Protection Plans provide a comprehensive framework for implementing a watershed-wide effort to improve source water quality by prioritizing and outlining several approaches to reduce sources of contamination to Philadelphia's raw water supply. PWD has made exceptional progress accomplishing Plan goals, including prioritizing and promoting land for permanent protection, establishing a regional network of organizations, businesses and governments to work together to protect and enhance the Schuylkill River Watershed, supporting policies that preserve forests and emphasize water resource protection and collaborating with the State of Pennsylvania to ensure regulations are enforced for wastewater treatment plants that discharge upstream of Philadelphia.

If you would like to receive a copy of the source water assessment summaries, or would like to know how to get involved in protecting your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit Table 2 on page 14 of this report, or go to http://www.phillywatersheds.org/what_were_doing/documents_and_data/watershed_plans_reports

During the past year, the Source Water Program conducted research to further improve our knowledge of Philadelphia's water supplies and help to define priorities for watershed protection. This research includes an analysis of flows needed to protect PWD's Baxter Water Treatment Plant on the Delaware River from saltwater intrusion; a preliminary analysis of water use availability in the Schuylkill River; monitoring and evaluating natural gas development activity to ensure continued protection of our drinking water supply; developing and

implementing an Iodine-131 watershed characterization program; and tracking of major sources of human infectious pathogens such as Cryptosporidium. Information from the latter study was used to develop a Cryptosporidium Watershed Control Program Plan for the Schuylkill River watershed which will help ensure our compliance with the EPA's Long-Term 2 Enhanced Surface Water Treatment Rule at the Queen Lane Water Treatment Plant.

In the last year, PWD has also made significant progress toward upgrading the Delaware Valley Early Warning System (EWS). The EWS is an integrated monitoring, notification and communication system designed to provide advance warning of surface water contamination events in the Schuylkill and lower Delaware River watersheds. PWD is currently implementing a 5-year Strategic Plan that identifies improvements and expansions that will enable the EWS to better fulfill its current roles and critical functions that improve the system's monitoring and notification capabilities.

In May 2011, PWD received grant funding approval under the Delaware Bay Area Maritime Port Security Grant Program, which will further support system improvements.



Marcellus Shale Drilling



The Philadelphia Water Department (PWD) provides clean water to 1.8 million people in Philadelphia, Bucks County, Montgomery County and Delaware County. Source Water Protection is a primary mission of PWD and the assurance of a sustainable, clean source of drinking water for our citizens is embedded in all PWD operations.

The northern reaches of the Delaware River basin sits above a portion of one of the largest known natural gas deposits, where recent technological advancements, commonly known as fracking, have made that natural gas accessible for the first time. Natural gas extraction presents a significant economic opportunity for communities and land owners above the deposits, however this drilling will impose currently unknown costs on Southeastern Pennsylvania's water supply. Drilling activities are projected to impact over 18,000 acres (roughly 30 square miles) of land upstream from Philadelphia in the next five to ten years. The coal mining boom of the late 19th and early 20th century has lessons for the Marcellus Shale opportunity. The coal boom fostered incredible economic development, but 21st century tax payers continue to pay to remediate the environmental harms. Any natural gas development in the basin should not impose costs on future generations.

Proposed Regulations

PWD reviews and evaluates all regulations and operational strategies that pertain to natural gas drilling to protect the Delaware River watershed and the preservation of the Delaware and Schuylkill Rivers as a reliable source of drinking water. PWD has been actively following and tracking the development of this industry since its introduction in Pennsylvania. The Department's preference is for a long-term cumulative impact study to be performed. However, we also believe that with the proper regulations and legislation, combined with continuous monitoring and careful controls on the discharge of fracking waters, the waters of the Delaware and our drinking water intakes can be protected.

The soon-to-be introduced Delaware River Basin Commission (DRBC) Regulations provide an adequate framework for protecting Philadelphia's drinking water sources, if faithfully adhered to by the natural gas industry and diligently enforced by the DRBC. The newly enacted regulations by the Commonwealth of Pennsylvania for controlling the discharge of wastewater from fracking operations further ensure our source water is protected. For more information on Marcellus Shale drilling, please visit our website at: www.phillywatersheds.org.

Iodine-131

The health and safety of our customers is always our top priority and Philadelphia's drinking water consistently meets or surpasses the State and Federal standards. In addition to 24-hour monitoring at our three treatment plants and at checkpoints throughout our 3000 mile delivery system, we believe it is our responsibility to look for things that can challenge our water quality and to have the best understanding possible of drinking water in our region and around the country.

Over the past year, PWD conducted an unprecedented sampling of our source and drinking water to develop a comprehensive understanding of the sources and levels of Iodine-131 (I-131). The results of the sampling show that the levels in our drinking water are well below Federal limits and we are continuing this comprehensive sampling initiative.

Iodine-131 is a radioactive form of iodine that is a byproduct of nuclear energy production and is widely used in the medical field for the diagnosis and treatment of thyroid disease. Trace amounts are present in waterways around the world as well as in our rivers; however, the drinking water levels pose no risk to public health and here in Philadelphia, the average levels are well below EPA limits.

I-131 and elements like this come from different sources, but most frequently are linked to people who have received medical treatments and whatever is not absorbed by the body is flushed into the sewer system. While wastewater treatment plants do a great job of removing contaminants, detectable levels can remain.

PWD will continue to work with the EPA, DEP and the Philadelphia Department of Public Health to gain a better understanding of I-131's medical usage and the implications to wastewater treatment to determine long-term opportunities to modify practices. For more information, please visit: www.phillywatersheds.org.



Explore Water in Our World at the Fairmount Water Works Interpretive Center!

The Fairmount Water Works, a National Historic Landmark, once served as the City's second pumping station (1815 to 1909), providing water to the citizens of Philadelphia.

The Philadelphia Water Department has transformed these magnificent buildings into an exciting watershed education center. Through a variety of educational programs, interactive exhibits and authentic experiences, the Fairmount Water Works Interpretive Center (FWWIC) informs the public about Philadelphia's water resources and its role in protecting them.

The historic Fairmount Water Works is part of the Interpretive Center experience – the original buildings surround today's modern exhibits. Visitors can experience the flowing Schuylkill River from this unique vantage point – right at river's edge.

From billstuffers and brochures to our Water Quality Report and the FWWIC, our Public Education and Outreach staff works to provide educational information to our customers of all ages. Please visit our website, www.fairmountwaterworks.org, for more information about our exhibits and programs. We also invite you to Friend us on Facebook, and to follow us on Twitter at @FWWIC.

Over the past eight years, the FWWIC has become the region's premier ecotourism center and is recognized by the Pennsylvania Department of Environmental Protection as the Delaware River Basin's Official Watershed Education Center and as a Gateway Center for the Schuylkill River National and State Heritage Area. With more than 300,000 visitors to date, the FWWIC has become the destination for innovative water and watershed education programming in the Delaware Valley.

School Programs Include:

Where can students go to learn about one of the most important issues of the 21st century? Students of all ages come to learn about water through these many exciting lessons.

- Water In Our World
- Land and Water: A Delicate Balance
- From Street to Stream: Slow the Flow
- Building as Machine: Water for the City
- Seeing is Believing: A Drop in the Bucket
- New! Green City, Clean Waters: Following Nature's Lead
- Global Water Action: Engineering a 21st Century Solution

Public Programs:

Schuylkill Soundings. These speaker series and public forums take place on the third Thursday of every month from 5:30 to 7:00 pm. Lively and thought-provoking topics featuring artists, writers and environmental professionals who share our passion for water.

Sunday Film Series. This series features documentaries on global water issues, infrastructure, water resources, climate change and other timely and sometimes controversial themes.

Architectural Walking and Bus Tours.

Our Sunday afternoon tours are led by seasoned Philadelphia Tour Developer Ken Hinde. (fee-based)

Special Tours. We offer a variety of themed programs for Questors, Alumni organizations, tour groups, engineering and public health professionals and other organizations. (fee-based)

Family Programs:

Science Saturdays are fun, hands-on activities that meld science and art in our laboratory. We test water, explore the wondrous beauty of diatoms, identify leaves and more. Open to all ages every Saturday afternoon from 2:00 to 4:00 pm.

Lifelong Learning:

To engage our adult audience, we offer guided group tours of both the historic Fairmount Water Works and the Interpretive Center's exhibits.

On an annual basis, we celebrate the United Nations' World Water Day, Earth Day, Drinking Water Week and the Spring Shad Run. In addition, our collaboration with the Mayor's Office of Sustainability is helping Philadelphia reach its goal of being the nation's greenest City.

Visit Us Soon!

The Interpretive Center is located at 640 Water Works Drive, below the Art Museum. Hours are Tuesday through Saturday, 10:00 am to 5:00 pm, and Sunday from 1:00 pm to 5:00 pm. Closed on Mondays and City holidays. Admission is free.

Support our educational efforts! Make a donation to "The Fund for the Water Works—IC."

The Center is ADA accessible. To schedule classroom tours or to check out the Center's Saturday Family Programs, Sunday Film Series, Schuylkill Soundings offering, visit our website: www.fairmountwaterworks.org.





Clean water begins and ends with you

Always recycle or dispose of unwanted household hazardous wastes properly. Don't pour motor oil, antifreeze or other toxic materials down storm drains. Water that enters our storm drains often flows directly to our local streams and rivers. So, don't pollute! Recycle these household hazardous materials safely and help protect our waterways. Also, don't flush paint thinners, insect sprays, herbicides and other harmful chemicals down the sink. Contact the Streets Department to get a schedule of their Household Hazardous Materials Drop-off Events where you can dispose of these materials safely without polluting your drinking water supply.

TABLE 1: Who to Call to Report Various Situations

Situation	Who To Call	Phone
Dead Fish	Fish & Boat Commission PADEP	717-626-0228 484-250-5900
Illegal Dumping & Related Pollution Activities	PADEP Neighborhood Services	484-250-5900 215-685-9500
Sewage Spills	PADEP PWD	484-250-5900 215-685-6300
Oil & Gas Spills/ Accidents	PADEP PWD	484-250-5900 215-685-6300

Important telephone numbers and Internet addresses

Philadelphia Water Department
215-685-6300
<http://www.phila.gov/water>

Philadelphia Streets Department
215-686-5560
<http://www.phila.gov/streets>

U.S. Environmental Protection Agency
(Safe Drinking Water Hotline)
800-426-4791
<http://www.epa.gov/safewater>

Delaware River and Schuylkill River Source Water Assessments
http://www.phillywatersheds.org/what_were_doing_documents_and_data/watershed_plans_reports

Schuylkill Action Network
<http://www.schuylkillwaters.org>

Philadelphia river and watershed information
<http://www.phillywatersheds.org>

RiverCast
<http://www.phillyrivercast.org>

Fairmount Water Works
Interpretive Center
215-685-0723
<http://www.fairmountwaterworks.org>

TABLE 2 – Places To Go To Get Involved In Protecting Your Local Streams, Rivers and Water Supply

Organization	Activity Types	Phone Number	Website Address
Friends of the Pennypack	A, C, E, P, T	215-934-PARK	http://balford.com/fopp
Friends of the Wissahickon	A, C, E, P, T	215-247-0417	http://www.fow.org
Friends of Fox Chase Farms	A, C, E, P	215-728-7900	http://www.foxchasefarm.org
Friends of the Tacony Creek Park	A, C, E, P, T	215-745-8903	http://friendsoftaconycreekpark.org
Friends of the Manayunk Canal	A, C, E, P, T	215-466-4587	http://www.manayunkcanal.org
Schuylkill Environmental Education Center	A, B, C, E, P, T	215-482-7300	http://www.schuylkillcenter.org
Partnership for the Delaware Estuary	A, B, C, E, P, S,T	1-800-445-4935	http://www.delawareestuary.org
Environmental Alliance for Senior Involvement	A, C, E, P, T	703-241-4927 x218	http://www.easi.org
Philadelphia Canoe Club	R, F, T	215-487-9674	http://www.philacanoec.org
Friends of Fairmount Fish Ladder	F	215-683-3608	email: epac99@aol.com
Cobbs Creek Environmental Education Center	A, C, E, P, T	215-685-1900	http://www.cobbscreekcenter.org
Wissahickon Restoration Volunteers	A, C, E, P, T	215-951-0330 x2101	http://wissahickonrestorationvolunteers.org
Wissahickon Valley Watershed Association	A, C, E, P, T	215-646-8866	http://www.wvwa.org
Lower Merion Conservancy	A, C, E, P, T	610-645-9030	http://www.lmconservancy.org
Philadelphia Water Department Water Quality Education Citizens Advisory Council	A, E	215-685-6300	http://www.phila.gov/water
Schuylkill Action Network	A, B, C, E, L, P, T	800-445-4935 x109	http://www.schuylkillwaters.org
Schuylkill Banks	B,E,L	215-222-6030 x103	http://www.schuylkillbanks.org
Senior Environment Corps	A, C, E, P, T	215-848-4072	http://www.centerinthepark.org/progsec.html
Tookany/Tacony-Frankford (TTF) Watershed Partnership	A, C, E, P, T	215-208-1613	http://ttfwatershed.org/

ACTIVITY TYPES

- A:** Environmental activism
- B:** Business-related protection and education activities
- C:** Clean-up of trash and litter
- E:** Environmental education
- F:** Fishing or fish recreation activities
- L:** Land conservation and management
- P:** Planting trees and streambank repair/protection
- R:** Rowing, canoeing and related boating activities
- S:** Storm drain marking
- T:** Water quality testing

WATER Wheel



Philadelphia
PWD
Water Department

Update/2012

The U.S. Environmental Protection Agency Paves the Way for Green City, Clean Waters to Become National Model for Stormwater Management!



The City of Philadelphia and the U.S. Environmental Protection Agency signed a landmark partnership agreement on April 10, 2012 to invest \$2 billion over the next 25 years that will transform Philadelphia into the greenest City in the nation. Green City, Clean Waters is the Department's long-term plan to use green infrastructure – such as tree trenches, green roofs and rain gardens – to restore water quality in our local rivers and streams by absorbing rain water into the ground, mimicking natural processes that intercept and infiltrate rain water before it enters the sewer. This unique Federal-State-City-community partnership aims to ensure the success of Green City, Clean Waters and make Philadelphia's waterways and communities safer, cleaner and healthier.

The City of Philadelphia is leading the development of green strategies to manage urban stormwater runoff – one of the 21st century's greatest challenges to the health of our nation's rivers and streams. Unlike traditional underground infrastructure, green tools function above ground to capture stormwater from streets, sidewalks, public and commercial buildings, schools and homes to reduce the effects of pollutants and flooding in Philadelphia's waterways. The Green City, Clean Waters plan promises to lead the way for communities across the nation to protect their health and safeguard their waters.

Officials present at the signing ceremony included (from left to right): Shawn Garvin, Administrator for EPA's Mid-Atlantic Region; Mayor Michael A. Nutter; U.S. Congresswoman Allyson Y. Schwartz; U.S. EPA Administrator Lisa Jackson; Deputy Mayor Rina Cutler and PWD Commissioner, Howard Neukrug.





Soak It Up, Philly! Philadelphia's Streets are Going Green!

Update/2012



Soak It Up, Philly!

Soak It Up, Philly, is the newest component of the Water Department's Green City, Clean Waters plan to bring Philadelphia's streets back to life! During each Thursday in March and one in April, the Water Department travelled to several different neighborhoods around the city to unveil its latest green infrastructure tool – Green Streets.

Philadelphia's streets, sidewalks and hard surfaces are made up of the largest single category of public impervious cover (surfaces that don't absorb water) in the City. To address the negative impacts of street stormwater runoff on our waterways, PWD has developed Green Street designs that provide stormwater management, while maintaining the primary function of the street for vehicles and pedestrians.

Mayor Michael Nutter – along with several members of City Council, City officials, community leaders and residents – came out to cut the ribbons and learn how these new Green Streets can help improve the health of Philadelphia's waterways.

As of April 2012, there are 32 Green Streets in Philadelphia and by the end of this year, PWD will have started construction on approximately 215 Green Streets, with hundreds more planned.

PWD teams up with a host of dedicated partners – from civic and community development groups to private industry and through City agencies – to ensure that we can successfully become an environmentally and socially sustainable City; as Mayor Nutter stated, "The greenest City in the nation!"

The Soak It Up, Philly Civic and City partners included New Kensington CDC, Tookany/Tacony-Frankford Watershed Partnership, East Falls Development Corporation, Northern Liberties Neighbors Association, Mayor's Office of Transportation and Utilities, Mayor's Office of Sustainability, Philadelphia Parks & Recreation, Department of Streets, Mural Arts Program, Pennsylvania Environmental Council and Pennsylvania Horticulture Society.

For more information on Green City, Clean Waters, please visit www.phillywatersheds.org.