

Altoona Water Authority Infrastructure Overview

Mission Statement

As stewards of the community's water system, our mission is to provide a clean, safe, reliable water supply and to collect and treat wastewater in a manner that protects public health and the environment.

Our commitment is to ensure a cost-efficient operation, render the highest standard of customer service, and maintain an active role within the community.



History

- The Altoona City Authority was created by the City of Altoona in 1946 for the purpose of financing capital improvement projects.
- The Authority assumed operational responsibility of the water system from the City in 1981 and of the wastewater system in 1986.
- In 2009, our name was officially changed to the **Altoona Water Authority**.



About Us

- We are the largest dual-operating authority (water and wastewater) between Pittsburgh and Harrisburg.
- Over the last 25 years, the Altoona Water Authority has constructed 40+ major capital improvement projects to comply with government-mandated regulations, at a cost approaching \$200,000,000.



Water Service Overview

- The Altoona Water Authority supplies public water to 60% of Blair County. The water system extends from Tyrone Borough in the north to Duncansville in the south.
- The water system serves a population of about 70,000 people, with approximately 23,000 customer accounts in eleven municipalities.
- In addition to domestic water service, the Authority maintains public, commercial, and industrial accounts.
- The Authority also sells water in bulk to Hollidaysburg, Bellwood, Blair Township, and Freedom Township.



**Altoona Water
Authority**



Water Service Area

- Major Road
- Municipal Boundary
- County Boundary



Administrative Office
(900 Chestnut Ave
Altoona, PA 16601)



Water Treatment Plant

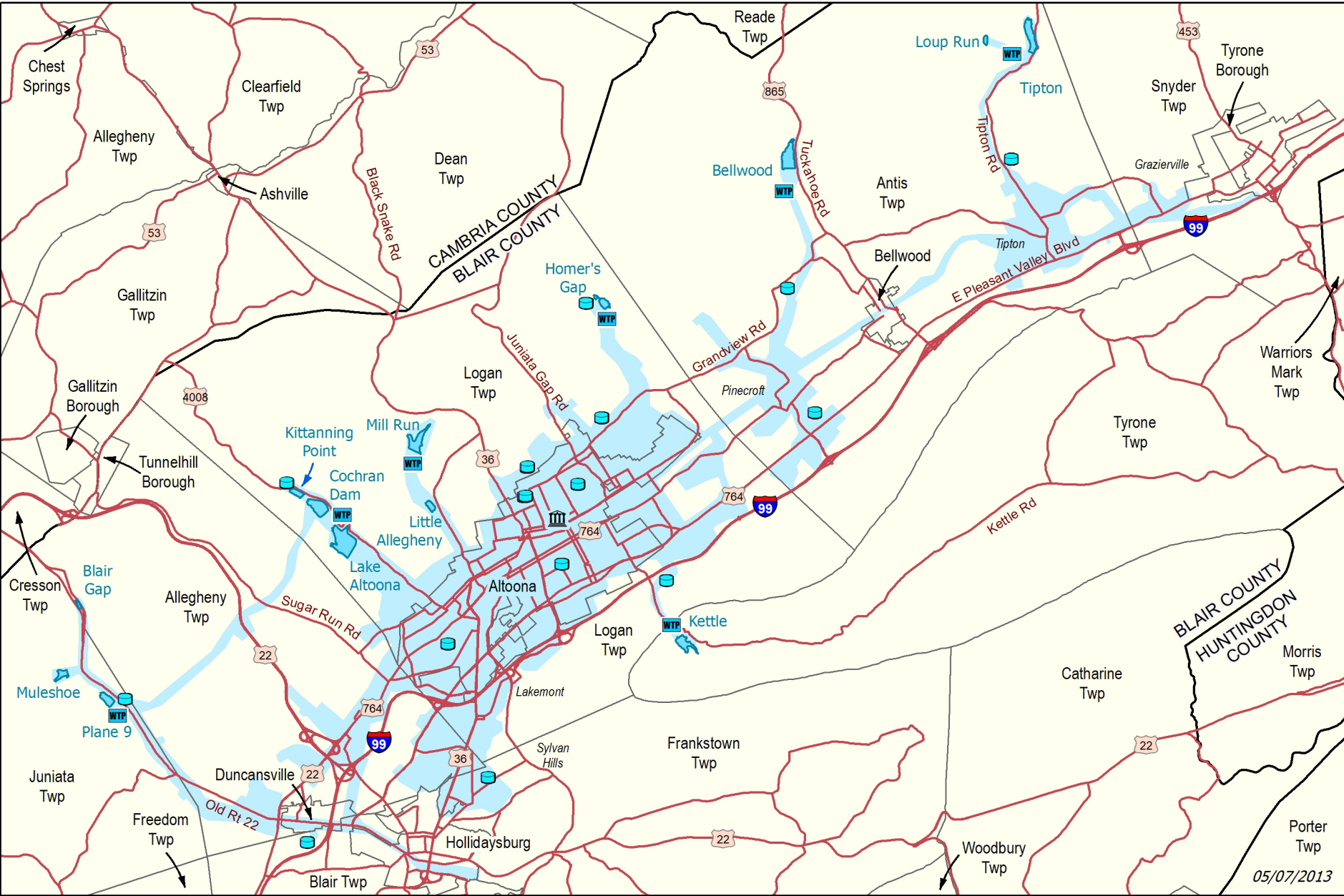
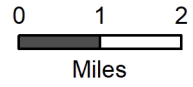


Water Storage Tank



Reservoir

Extent of Water Distribution System



Water System History

- The present surface water sources were once two separate systems. The Altoona City Authority acquired the Blair Gap system in 1981.
- The dams and reservoirs original to the Authority are: Lake Altoona, Cochran Dam, Kittanning Point, Little Allegheny, Mill Run, and Homer's Gap. They were constructed from the 1870s to the 1950s.
- The former Blair Gap system was constructed by the Pennsylvania Railroad from 1880 to 1920. Its reservoirs were: Tipton, Bellwood, Kettle, Blair Gap, and Plane 9. It also included Muleshoe Reservoir, which is now owned by Hollidaysburg Borough.



**Altoona Water
Authority**

Water Production and Treatment

- The Authority's eleven surface water reservoirs have a combined storage volume of 2.85 billion gallons, and in total are capable of yielding up to 14.6 million gallons of water per day.
- The Authority's seven water treatment plants have a combined treatment capacity of 28.5 million gallons daily, which is almost two times the net safe yield of the reservoir systems. In 2012, their combined production averaged 8.7 million gallons of water each day.



**Altoona Water
Authority**



Kittanning Point Reservoir



William L. Cochran Impounding Dam



Lake Altoona



Andronic Pappas Water Treatment Plant



Mill Run Reservoir



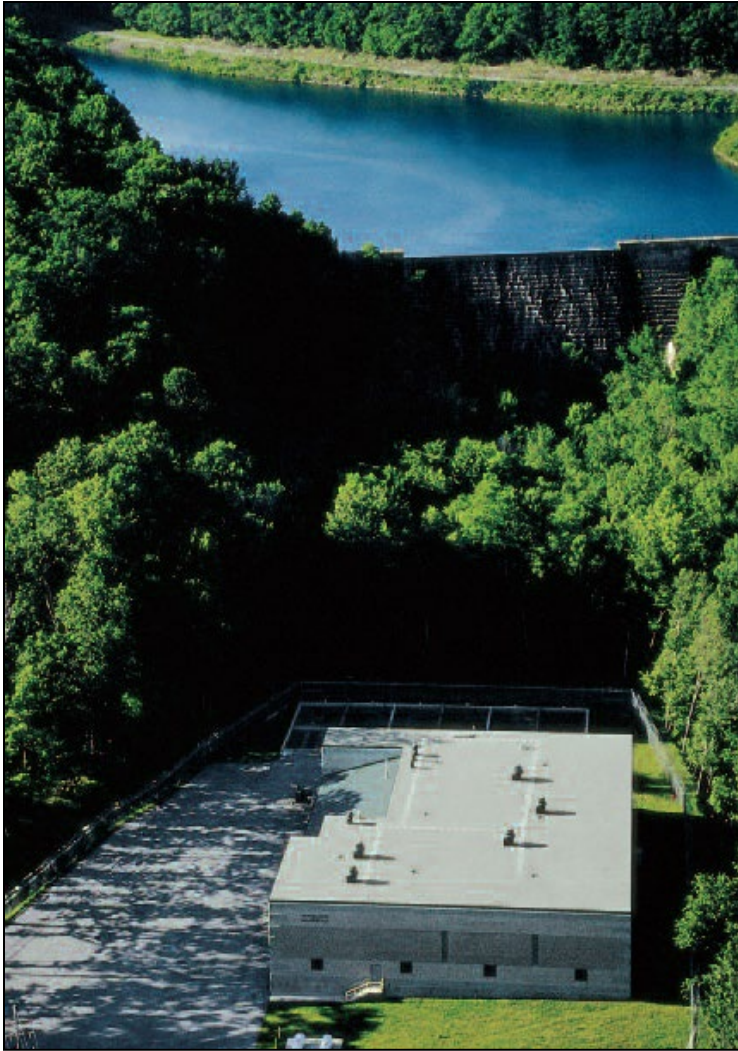
Plane 9 Dam & Water Treatment Plant



Kettle Reservoir & Water Treatment Plant



Homer Gap Water Treatment Plant



Tipton Dam, Reservoir, and
Water Treatment Plant



Tipton Dam



Blair Gap Dam

Water Production and Treatment

- The Altoona Water Authority has one of the most technologically advanced water treatment systems in the eastern United States. Our treatment techniques include:
 - Ozonation
 - Direct filtration
 - Continuously backwashed / filter-to-waste / mixed media filters
- In 1999, the Authority received the *Governor's Award for Environmental Excellence in Technology Innovation* for its water treatment facilities.



**Altoona Water
Authority**



Ozone Generators



Traveling Bridge Filters



Ozone & Rapid Mix



Chemical Addition

Water Storage and Distribution

- The Authority operates sixteen finished water storage tanks, with a combined storage capacity of 28.3 million gallons.
- The water system is comprised of about 390 miles of transmission and distribution main piping, ranging in diameter from 4” to 24”.
- The water system has more than 1900 hydrants for fire protection.
- The Authority operates nine pumping stations throughout the system for various purposes, such as:
 - Filling storage tanks
 - Transferring water from one service area to another
 - Maintaining hydraulic gradient



**Altoona Water
Authority**



Oakton Water Storage Tanks



Prospect Water Storage Tank



Plane 9 Water Storage Tank



Fairview Hills
Water Storage Tank



Prospect Water Storage Tank



Pumping Station Interiors



Installation of a fire hydrant

Wastewater Service Overview

- The Altoona Water Authority wastewater collection system serves a population of about 50,000 people, with approximately 19,000 customer accounts in the City of Altoona and in parts of Logan and Allegheny Townships.
- The Logan Township and Allegheny Township collection systems are also connected to and treated by the Altoona Water Authority's wastewater system.









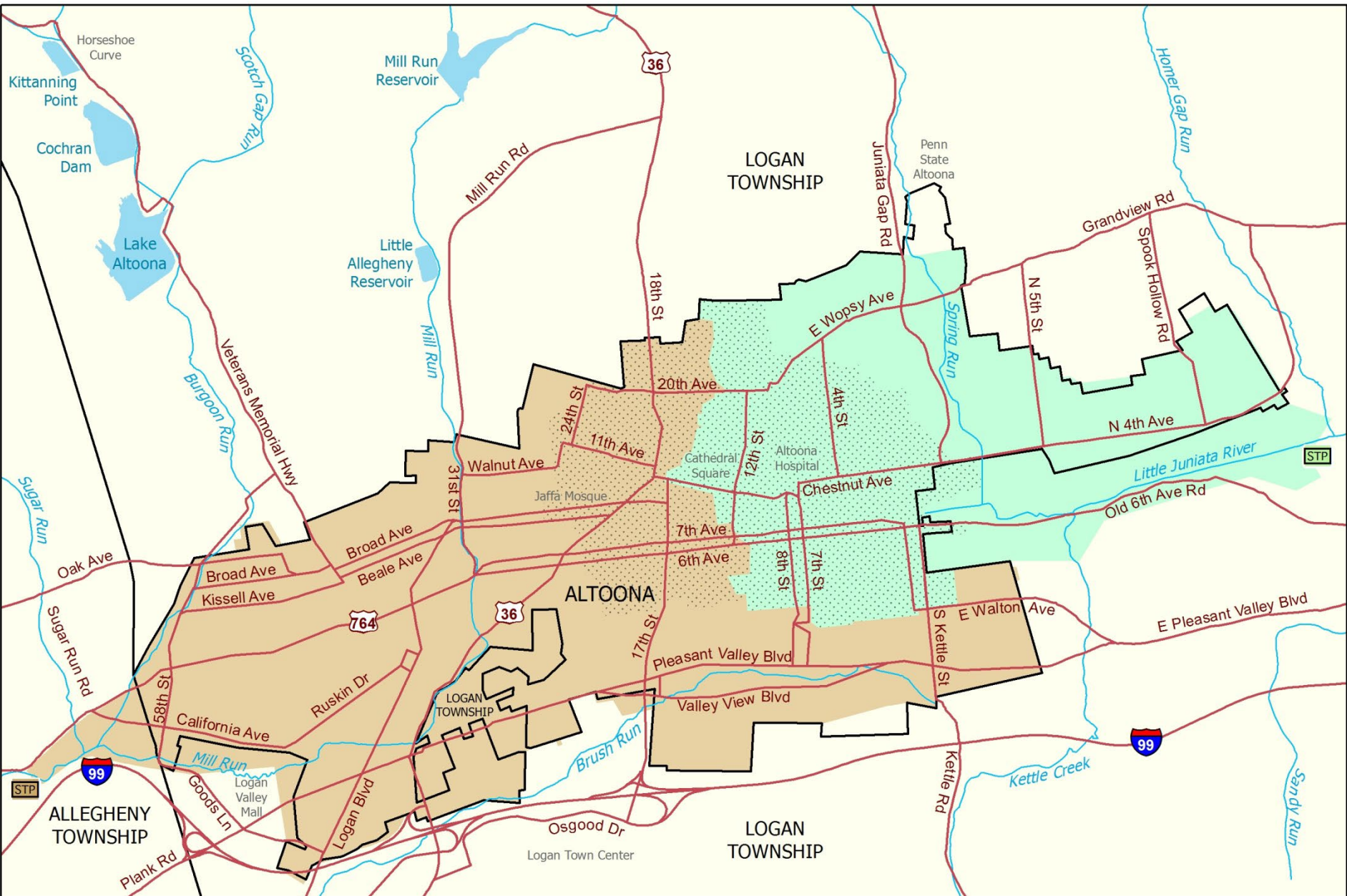
**Altoona Water
Authority**

Wastewater Service Overview

- The wastewater collection system is divided into two drainage basins: the Westerly and the Easterly. Each basin has its own treatment plant.
- In a portion of central Altoona, the wastewater system is combined—it collects storm water as well as sanitary sewage.



- | | | |
|---|--|--|
|  Easterly (Sanitary Only) |  Easterly (Storm & Sanitary) |  East Sewage Treatment Plant |
|  Westerly (Sanitary Only) |  Westerly (Storm & Sanitary) |  West Sewage Treatment Plant |



Wastewater Collection and Treatment

- Portions of the sewer system were constructed more than 125 years ago.
- The wastewater system is comprised of over 230 miles of collection and conveyance sewers, ranging in size from 4” to 80”.
- The system is accessible via approximately 4200 manholes.
- The Authority operates 3 wastewater pumping stations (Spring Run, East Juniata, and Logan Hills).



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Wastewater Collection and Treatment

- During wet weather events, the Authority utilizes two Combined Sewer Overflows (CSOs) to capture the “first flush” from the combined (storm/sanitary) portion of the system. The CSOs have a 2.9 million gallon storage and pumping system to release wastewater to our treatment plants at a controlled rate.
- The Altoona Water Authority system was one of the first in the United States to integrate the treatment of wet weather flows, combined sewer overflow discharges, and normal wastewater flows.



**Altoona Water
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Wastewater Collection and Treatment

- The Easterly Wastewater Treatment Plant treats an average of 4.1 million gallons daily.
- The Westerly Wastewater Treatment Plant treats an average of 5.9 million gallons daily.
- During wet weather events, **each** facility is capable of treating up to 20 million gallons per day.



Wastewater Collection and Treatment

- Both of our state-of-the-art wastewater treatment plants provide advanced secondary treatment capability, normally removing 95% of organic and suspended solids via the single stage nitrification, activated sludge process.
- In 2013, the American Academy of Environmental Engineers awarded its *Top Environmental Project in the US* for the Authority's upgrades to its Westerly Wastewater Treatment Plant.



Altoona Water
Authority



66" Combined Sewer
Installation, Union Ave



Spring Run Wastewater Pumping Station



Storage Tank Construction,
Bellwood Ave CSO



Discharge Pumps,
Bellwood Ave CSO

Westerly Wastewater
Treatment Facility

Just off Route 764

144 Westerly Treatment
Plant Rd, Duncansville PA



Easterly Wastewater
Treatment Facility

1522 Old 6th Ave Rd, Altoona PA



Bar Screens & Grit Removal



Overflow Storage Tanks



Ultraviolet Disinfection Tanks



Biological Aeration Tanks



Flow/Air Distribution Channel



Sludge Digestion Tanks



Operation & Control Building



Pipe Gallery Tunnel

For More Information

Please visit our website:

<http://www.altoonawater.com>

Or contact Customer Service:

900 Chestnut Ave

Altoona PA 16601

(814) 949-2540

