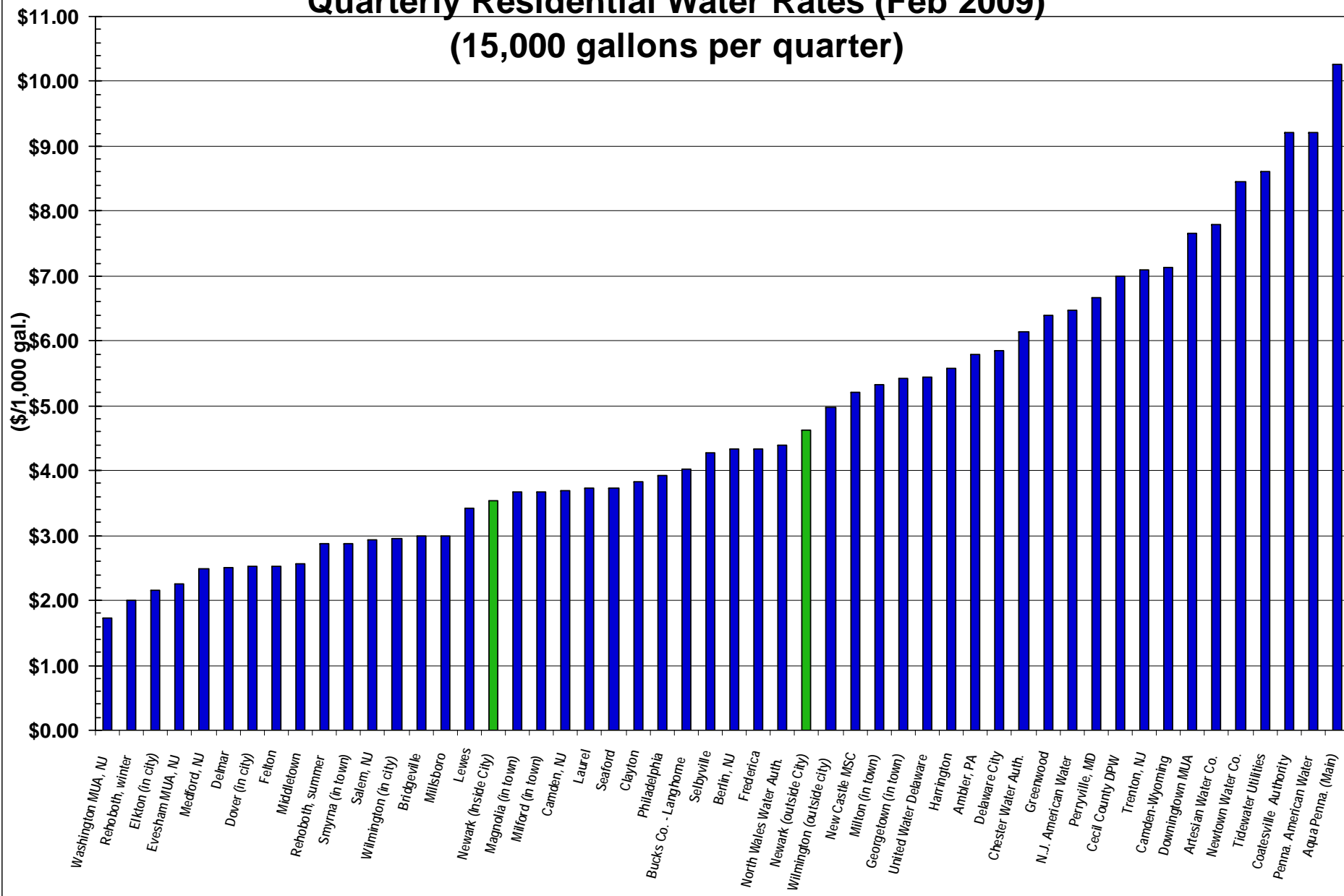


1886 – Dean Woolen Mills fire, first Newark water system.
 1903 – Main St. water main (10")
 1931 – North wellfield Academy St

1956 - South wellfield South Chapel St.
 1968 - South wellfield South Chapel St.
 1971 – Laird wellfield Fairfield

1990 –White Clay Creek intake
 2003 - South well treatment plant
 2006 – Newark Reservoir

Quarterly Residential Water Rates (Feb 2009) (15,000 gallons per quarter)



Introduction

Thank you Mayor and Council. Good evening.

My name is Gerald Kauffman, Director of the University of Delaware, Water Resources Agency. I am a member of the faculty in the Department of Civil and Environmental Engineering and School of Urban Affairs and Public Policy. I am a Registered Professional Engineer in Delaware and have been a P. E. in three other states – New Jersey, Illinois, and Wisconsin. In addition, since the drought of 1999 I have served as Temporary Water Coordinator as appointed by Governor Carper in accordance with the Delaware Water Supply Coordinating Council Act of 2000. By far though, my toughest job ever has been President of the Newark American Little League at the field right out back here.

By last fall, the WSCC has implemented over 2 billion gallons of additional water supply storage in northern Delaware, a significant achievement with economic benefits attractive to new business to our State. The City of Newark has built 400 million gallons of that total with the new water treatment plant at the south well field and the Newark Reservoir. These new projects are a significant economic investment in our City. Newark is well positioned in water supply as it is the only water purveyor in Delaware that has the reliability from both ground and surface water supplies.

I am pleased by the turnout this evening particularly attendance by Senator Peterson, Representative Kowalko, and Representative Ramone. This is representative democracy in action. Watersheds and water supplies transcend political boundaries. I think tonight is about issues on both sides of the line in our watershed.

The mission of the Water Resources Agency at UD is to provide unfettered water resources policy assistance to governments in Delaware and the Delaware Valley through the land grant public service, education, and research role at the University. The WRA is a regional partnership of the State, New Castle County, Newark, and Wilmington that started in 1977. We have watersheds that start upstream in Pennsylvania and Maryland and come down into Delaware. Our aquifers stretch from New Jersey through Delaware to Maryland. We have 6 interconnected municipal and private water companies in northern Delaware. Our role for over 3 decades has been to coordinate water resources management between these various jurisdictions.

History

The issue of water rate setting for customers inside and outside of the City is really about the history of community ownership and investment by residents in the Newark water system for over a century.

Ever since Newark was granted a charter in 1758, the City has grown between the banks of the White Clay and Christina Creeks. The city exists here at the head of navigation because of cheap mill power provided by these steep Piedmont creeks and the wells dug in the sandy coastal plain aquifers to the south.

In 1848 the Nonantum Mills (later to become the Curtis Paper Mill) were built along the White Clay Creek and named after the Indian name for the founder's home in Newton, Mass. In 1886, fire destroyed the Dean Woolen Mills (at present day Timothy's) leading to an outcry to build first Newark water well for fire fighting purposes in 1888.

In 1903, the City drilled a well at the east end of Main St. near the site of the old Senior Center and constructed a 10 inch water main under Main Street that connected with the first water tank on the hill across from the Newark Country Club. For 30 years, as the University of Delaware grew, this single water tank controlled water pressure in Newark

In 1931, during the Great Depression, the city drilled the North well field at the south end of Academy Street near the Pennsylvania Railroad. This water tank here was one of the first in the USA to add fluoride for dental health.

Newark experienced a post - war building boom. Chrysler opened up the tank plant in 1951. The population in 1940 was 5,000 and increased to 20,000 by 1970. The Delaware Water Geology Survey explored the paleochannels (the ancient White Clay Creek bed) under Delaware Stadium and found the sandy aquifers held a lot of water. In 1956, the City drilled wells 11, 12, 13, and 14 in the South well field along South Chapel Street south of Route 4. In 1968, the City drilled wells 15, 16, and 19 behind Scottfield along South Chapel Street near I-95. In 1971, the City drilled wells 23 and 25 in the Piedmont rocks near the Fairfield Swim Club downhill from Country Club Drive and New London Road. In 1990, the City sunk Piedmont rock wells 20 and 21 along Creek Road. By 1990, the City population was over 27,000 and Newark wells yielded 3.5 mgd from the Piedmont and Coastal Plain aquifers.

With a booming population after the Second World War, the City and County began looking at surface water supplies to add to the wells. During the 1950's, the Pennsylvania Railroad began buying up land in the White Clay Valley to build a reservoir and provide water for their steam locomotives. The DuPont Company bought the land from the railroad and proposed a 12 billion gallon main stem reservoir about 3 miles upstream from Newark. The reservoir plan was abandoned after the drought of 1966 and DuPont donated the lands to the State to become White Clay Creek State Park.

By 1990, the City population was 27,000 and Newark purchased the Curtis Paper Mill raceway and lagoons for a municipal water intake. In 1992, the City completed the 3 mgd White Clay Creek water treatment plant and Newark became the first and only conjunctive use groundwater/surface water system in the State providing up to 6.5 mgd to the customers.

A reserve source of water storage was needed as 3 droughts occurred in rapid succession – 1995, 1999, and the record drought of 2002. In 1999, City Council adopted the Water Supply Plan that recommended construction of a new iron treatment plant along South Chapel Street and a new reservoir. The City acted quickly in 2000 and purchased the Koelig Farm property for the new reservoir. In 2003, the City completed the new \$2 million South well field iron treatment plant. In May 2006, the City opened the new reservoir, the first major reservoir built in Delaware in over 70 years since the Col. Hoopes Reservoir in 1933. In the dry months of 2007 alone, only a year after it was built, use of reservoir water saved almost \$1 million in reduced water sales from adjacent purveyors

During the century since the first water main was built down Main Street in 1903, Newark residents have invested in their water system in a way that is unmatched by any municipality in the State and are now the only water system in that State to draw water from both ground and surface water supplies.

Water Rate Survey

Every 4 years (2000, 2004, and 2008) the Water Resources Agency surveys water rates for over 50 water systems in Delaware and surrounding states.

The 2008 water rate survey indicates that Newark rates are \$3.50/1000 gal (inside city) or \$210/yr, 33rd percentile, and \$4.60/1000 gal (outside city) or \$270/yr, 58th percentile, based on an average use of 60,000 gallons per year. Newark water rates are low, at least half of investor-owned water purveyors such as Pennsylvania American Water Co. and Aqua Pennsylvania with rates over \$500/yr, Artesian Water Co. at \$460/yr., and Cecil County Dept. of Public Woks and Perryville, MD at \$420/yr. New York City has the highest water rates along the Atlantic Seaboard at \$800/yr.

Based on a comparative market approach, the adjusted new rates will bring Newark to 50th percentile, not too low, not too high. Water rates will be substantially below their neighbors in investor owned service areas and well below adjacent water systems such as Cecil County, MD and Aqua Pennsylvania in Kemblesville and Kennett Square, PA. Newark's drinking water is affordable and a good deal!

Engineering Justification

Periodic adjustments to water rates are necessary to fund systematic operation and maintenance improvements to the water supply system. Water treatment chemicals and energy costs are increasing. Without system investments, the default philosophy is deferred maintenance which is counter to modern water supply engineering. Deferred investments in O & M will end up with larger expenditures to replace aging infrastructure. Systematic preventative maintenance is much less expensive then paying for large system failures and replacements down the road.

Benjamin Franklin, America's first environmentalist, who left money in his will to pay for the nation's first municipal water system in Philadelphia said: "An ounce of prevention is worth a pound of cure". This adage applies here.

Additional revenues are needed to fund infrastructure improvements to supply water for economic development in Newark. Investments are needed to be ready to deliver water supply to the new firms that come with the Aberdeen base realignment and a rejuvenated Chrysler plant for green industry, electric car plant, wind power assembly, and/or a brewery. If Newark serves 1 mgd to the Chrysler site, that would be worth between \$1.0 and \$1.5 million annually in water sales.

AWWA Principles

The American Water Works Association (AWWA), the national water supply professional organization, provides guidance on setting water rates in the industry standard of practice "Principles of Water Rates, Fees, and Charges".

The AWWA manual reads that many government water utilities recognize the differences in the costs of serving water users outside city limits versus citizens living inside corporate limits. A government utility is considered the property of citizens within the city. Customers within the city are considered owners of the city water system because they have invested in building the infrastructure over time. Outside city customers are non-owner customers and bear different responsibility for costs than inside city, owner customers. The costs borne by outside city, non-owner customers are similar to those borne by customers of investor, private water utilities. Inside city rates are lower because the owners (city residents) benefit from their earlier investments over many decades and now own paid up equity in the system.

In Newark this means that in city residents have earned lower rates because these residents have invested in, paid for, and now own (through water rates and property taxes) most of the water supplies constructed since 1903 such as the North and South well fields, White Clay Creek water treatment plant, the South well field treatment plant, and almost all of the water mains, pump stations, and water tanks built over the last century.

The AWWA manual reports that expected outside city customer rate of return would be about 9% and inside city would be about 4.5%, a ratio of 2:1. The existing Newark outside/inside ratio is 1.3:1, less than this national standard. At 30% increase outside and 15% increase inside, Newark's proposed ratio of outside city to inside city water rates would be 1.5:1, in line with or less than other municipalities and well below the 2:1 national standard. A 15%/15% increase would keep the ratio at 1.3:1. The AWWA manual indicates that if differences between costs for inside city and outside city customers were not recognized, then inside city owner customers would be subsidizing the outside city customers.

The following table summarizes the ratio of outside city to inside city water rates (\$/1000 gal) for towns in Delaware.

<u>City</u>	<u>Inside</u>	<u>Outside</u>	<u>Ratio</u>
Magnolia	3.67	4.33	1.2
Newark	4.60	3.50	1.3
Georgetown	5.43	6.98	1.3
Lewes	2.46	3.20	1.3
Dover	2.70	3.93	1.5
Wilmington	2.15	1.19	1.8
Rehoboth	5.74	2.87	2.0
Smyrna	5.73	2.87	2.0
Elkton	2.15	4.30	2.0

So what should the ratio of proposed outside to inside city water rates be?

The following table summarizes the progression of Newark water rates based on average water use of 60,000 gallons per year.

<u>Year</u>	<u>Inside City</u> <u>(per yr)</u>	<u>Outside City</u> <u>(per yr)</u>	<u>Ratio</u>
2000	\$109	\$142	1.3
2001	\$200	\$267	1.3
2009?	\$230 (15%)	\$307 (15%)	1.3
2009?	\$230 (15%)	\$347 (30%)	1.5