

ISSUE BRIEF



KENTUCKY DRINKING WATER

2011 Kentucky Grade: B

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Kentuckians need to be aware of the quality of their drinking water and the reliability of their drinking water infrastructure. Deteriorating drinking water infrastructure adversely impacts public health. In some communities, a reliable and abundant drinking water supply provides water for fire protection and is critical for business and economic development.

CURRENT CONDITIONS

The coordination of community-based planning for drinking water infrastructure statewide is under the direction of the Kentucky Infrastructure Authority (KIA). KIA serves as a clearinghouse for federal and state funding of drinking water projects, including the state revolving loan program, as well as state grant and loan programs authorized by the Kentucky Legislature. KIA also manages drinking water grant program of the American Recovery and Reinvestment Act of 2009.

KIA maintains an up-to-date inventory of water system infrastructure. This inventory is managed in a statewide geographic information system (GIS) database, known as the Water Resources Information System (WRIS). WRIS is updated annually with information provided by water utilities to regional water management councils.

Through an extensive utility assessment, KIA has quantified areas of Kentucky not served by a potable water system (unserved areas) and deficient water systems (underserved areas). The U.S. Environmental Protection Agency (EPA) defines a potable water system as a water system that meets established drinking water standards.

Since 2000, the state expanded water service from approximately 37,000 miles of water main to 56,500 miles. A significant portion of these additional mains has increased the percentage of the state's population of 4.3 million being served by a public water supply system. The percentage has increased from 85 percent in 2000 to 95 percent in 2010. Less than five percent—215,000 residents or approximately 65,000 households—are without access to a public drinking water supply. Kentucky is among the top five of all states for percent of population served. The goal of the state is to provide access to a public drinking water supply to all Kentuckians by 2020.

Drinking Water Compliance

Kentucky has 464 public water systems (401 community and 63 non-community water systems), a reduction from 595 public water systems in 2002. A 22 percent reduction indicates a proactive approach to consolidating systems to improve drinking water quality and efficiencies. The Kentucky Division of Water reviews public water systems annually for compliance with the Safe Drinking Water Act. Drinking water violations are identified in five categories, including a maximum contaminant level violation, a treatment technique violation, failure to properly monitor water quality, failure to report water quality information, and failure to notify the public of a drinking water violation. In Kentucky, the vast majority of violations are reporting and monitoring violations. As illustrated in *Figure 1*, the total number of drinking water violations has declined from 1,407 in 2006-07 to 817 in 2008-09, a 42 percent improvement.

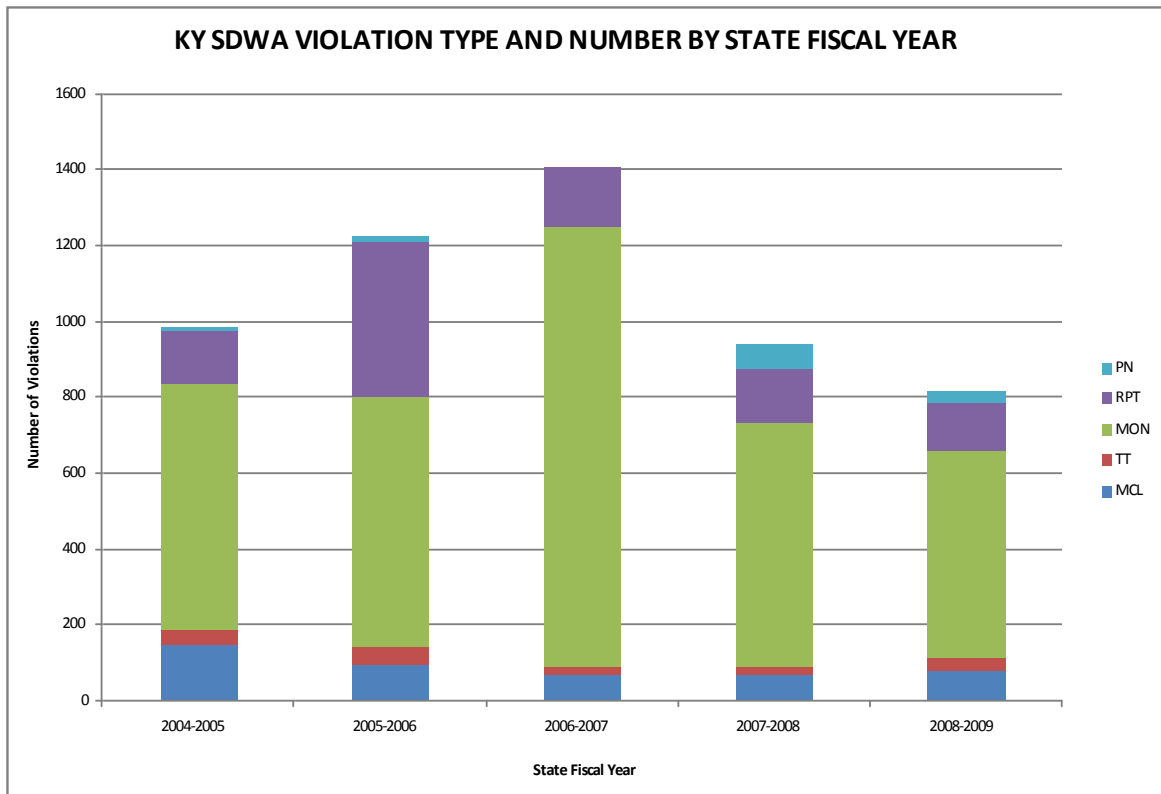


Figure 1 – Drinking water compliance. The abbreviations for drinking water violations are: PN: Public Notification, RPT: Reporting, MON: Monitoring, TT: Treatment Technology, MCL: Maximum Contaminant Level.

The Kentucky Division of Water established a unique partnership with the drinking water industry in Kentucky. In 2007, a stakeholders group was established with representatives from regulatory agencies, funding agencies, water utilities and industry associations. The Drinking Water Stakeholders Group meets quarterly to discuss regulatory compliance and industry best practices. This collaborative approach has led to proactive development of regulations for capacity development, water quality, permits, operator certification and engineering design standards.

Investment Needs

In the 2007 Drinking Water Infrastructure Needs Survey and Assessment, the EPA identified a need for \$4.9 billion of investment for Kentucky's drinking water infrastructure over the next 20 years. Kentucky is in the process of updating of both the Drinking Water Management Plan and the Drinking Water Needs Survey and Assessment. Final reports are expected to be published in 2011 and these reports will update the EPA estimate for investment need in Kentucky's drinking water infrastructure.

In order to effectively plan and manage Kentucky's investment in drinking water in infrastructure, 15 water management councils (see *Figure 2*) were established throughout the state. Annually, area water management council's identify drinking water system needs on a regional basis.

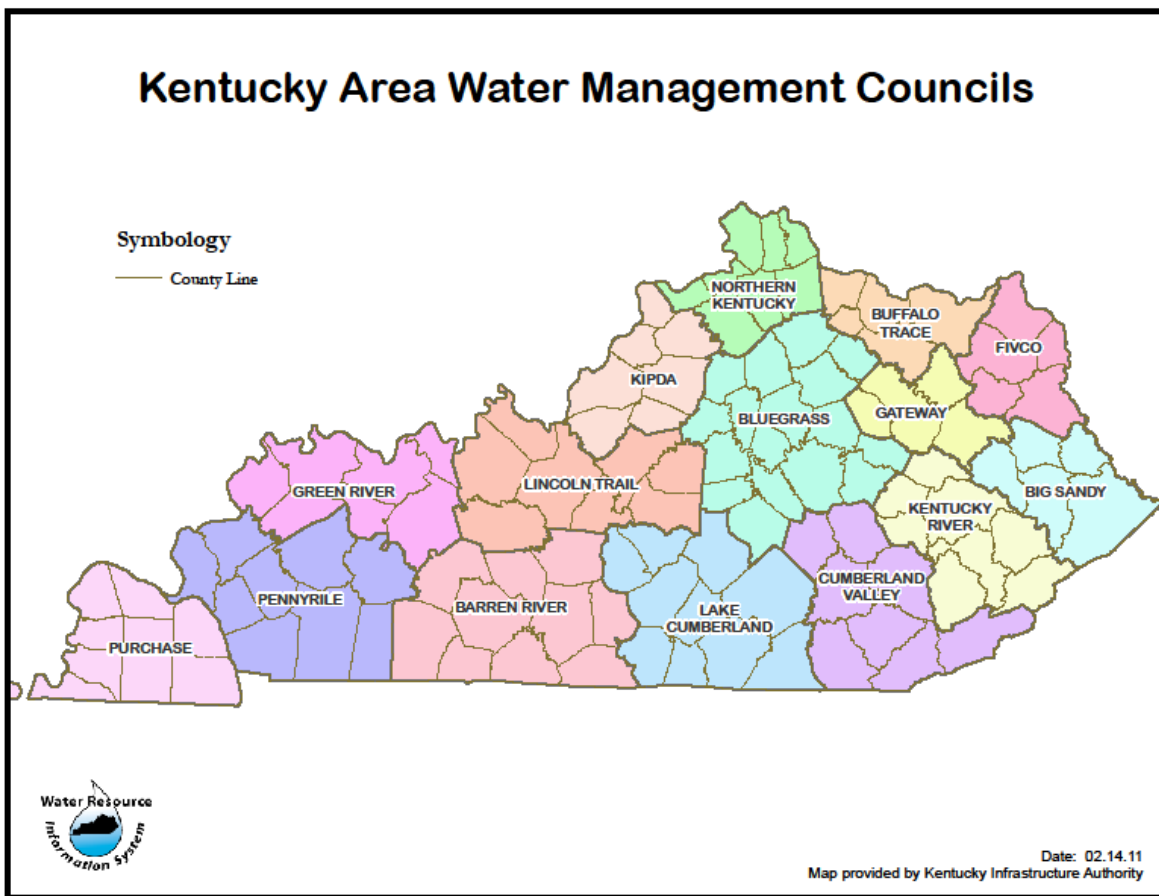


Figure 2 - Kentucky Regional Water Management Councils

Water projects are developed for these areas using a 20-year planning horizon. Each water management council prioritizes projects on a regional basis with input from water providers and elected officials. The councils develop a statewide priority list, and projects are selected for funding. Using this process from 2000 to 2010, the Kentucky Legislature awarded \$806 million

in grants for 2,135 drinking water improvement projects. In addition, more than \$153 million has been awarded through the state revolving loan fund (SRF), bringing the total grant and loan investment in drinking water to \$959 million.

In *Figure 3*, the blue lines represent 20,000 miles of water main improvement projects since 2000. These projects improved water service to over 1.5 million people in Kentucky with project funding from water rates, grants, and loans.

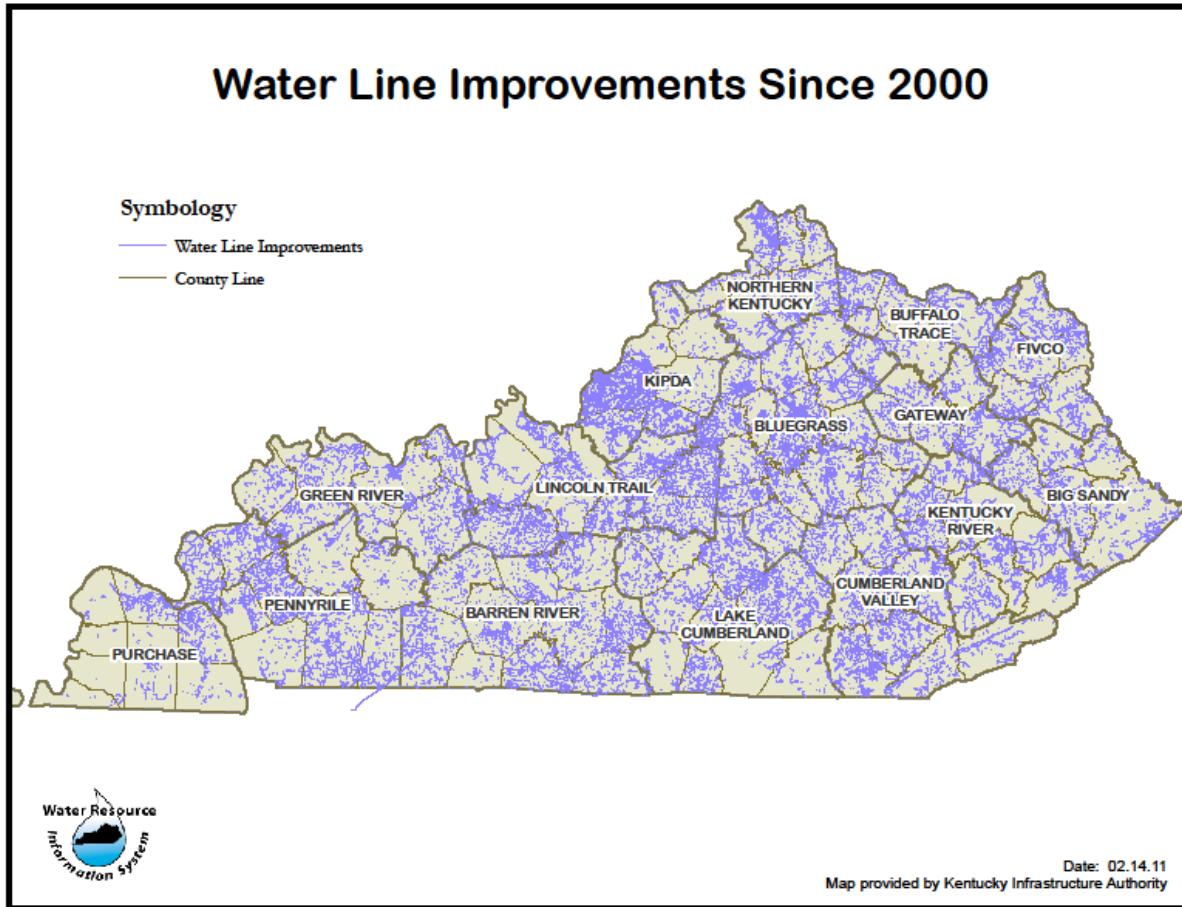


Figure 3 – Kentucky Water Line Improvement Projects from 2000 to 2010

The Commonwealth is making significant progress towards the goal of providing access to a public water supply for all Kentuckians by the year 2020. As this goal is achieved, Kentucky must begin a transition towards assessing aging water infrastructure. Kentucky has a total of 56,500 miles of water main with an estimated 2,500 miles over 60 years old (installed prior to 1950) and another 7,000 miles of water main with an unknown age. This is approximately 17 percent of the total distribution system pipe inventory. Over the next 25 years the age and condition of Kentucky’s water infrastructure will require investment to assure system reliability

and assure quality water reaches the customer. Proactive plans and programs need to be developed for condition assessment and upgrade of Kentucky's aging infrastructure.

RECOMMENDATIONS SUPPORTED BY ASCE

In order to continue the progress of improving Kentucky's drinking water systems, the following recommendations are supported by ASCE:

- Continue regional water planning and coordination of drinking water infrastructure
- Maintain the Water Resource Information System.
- Continue periodic updates of the state's Water Management Plan and 20-year Drinking Water Survey and Needs Assessment for un-served and under-served areas of the state every three to five years.
- Perform a comprehensive assessment of drinking water system condition and performance. Where appropriate, develop plans for replacing and upgrading aging drinking water infrastructure to assure system reliability and high quality water.
- Continue to promote cost-of-service water rate methods and annual water loss audits.
- Pursue water system mergers and regional solutions where economically beneficial.
- Continue loan programs offered by rural development and the state revolving loan program to improve the water supply.
- Continue Community Development Block Grants and Kentucky Economic Development Grants to improve the water supply.
- Annually fund the 2020 Drinking Water Program with a combination 20-year revolving low-interest loan and grant incentive fund program.
- Continue to monitor and report compliance statistics to determine the effectiveness of the programs to enhance drinking water quality in the state.

GRADE

In the 2009 *Report Card for America's Infrastructure*, a grade of D- was assigned to the nation's drinking water infrastructure. The 2003 Kentucky Infrastructure Report Card assigned a grade of C to the state's drinking water infrastructure. In 2010, the Drinking Water Committee recommended a grade of B for the state's drinking water infrastructure.

A well-managed improvement plan and a diversified funding program are in place. Funding is being coordinated by state agencies to ensure capital is invested wisely. Since 2000, Kentucky has invested nearly \$1 billion of grant and low-interest loan funds in drinking water infrastructure projects and significant progress has been made in extending potable water service throughout the state, with currently 95 percent of the population served. Progress has been made collaborating among industry representatives and drinking water regulators through a stakeholders partnership program. Drinking water regulatory compliance has significantly improved since 2007. In that time the number of violations has gone from 1,407 in 2006-07 to 817 in 2008-09, a 42 percent improvement.

Considering the significant progress since 2003 in planning, funding, implementation and compliance for drinking water systems in Kentucky, the state's drinking water infrastructure is assigned a grade of B.

ACKNOWLEDGEMENTS

The Drinking Water Sub-Committee wants to recognize the support from the Kentucky Division of Water and the Kentucky Infrastructure Authority for the resources provided in compiling the report card.

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SOURCES

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