

**Protecting Kentucky's Drinking
Water:
Why Kentucky Needs a Statewide
Backflow Prevention Program**

*Joint Committee on Veterans, Military Affairs, & Public
Protection
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What is Backflow Prevention – And Why Does It Matter?

- Backflow occurs when contaminated water reverses flow into a potable (drinking) water supply
- Common contamination sources include:
 - Irrigation systems
 - Fire suppression system
 - Industrial processes
- Without proper prevention, chemicals, bacteria and other hazards can enter the public water system — creating serious public health risks and significant fiscal liability for municipalities and utilities
- Properly tested, inspected, and maintained backflow prevention devices are essential to safe water in homes, businesses, and public facilities



When Backflow Prevention Fails

Bowling Green, Kentucky Backflow Incident:

- The absence of a backflow prevention assembly at an elementary school in Bowling Green, Kentucky allowed glycol, a chemical used in the HVAC system, to enter the drinking water
- When a contracting company attempted to pump water from the potable supply into geothermal pipes, pressure caused backflow of a small amount of chemicals into the drinking water
- To keep the drinking water safe in the future, workers installed a backflow preventer on the HVAC system lines



When Backflow Prevention Fails

North Carolina Clinic Backflow Incident

- A clinic reported a bitter taste and strong chemical odor in its drinking water
- Investigators traced the contamination to a garden hose submerged in an X-ray chemical mixing tank
- The hose was connected to a hose bibb without a vacuum breaker, creating an indirect cross-connection
- During water system maintenance, negative pressure in the water main caused back-siphonage
- X-ray developer and fixer chemicals were drawn through the hose and into the clinic's drinking water supply



What Goes Wrong Without Statewide Enforcement

- The state recognizes qualified professionals and accepted certifications, but testing and reporting requirements can vary significantly
- Without a statewide program:
 - Assemblies may not be tested annually
 - Failed assemblies may go unrepaired
 - Reporting can be inconsistent
 - Enforcement varies across jurisdictions
 - Water systems have limited visibility into compliance
- A backflow prevention assembly is only as effective as the program that ensures it is properly tested, inspected, maintained, and repaired.

Recommendation: Establish a Statewide Backflow Prevention Program

- Kentucky may recognize professional certifications for those who work on backflow, but without a consistent and enforceable statewide backflow prevention program, there is no guarantee that backflow assemblies are being properly installed, tested, maintained, or repaired
- A statewide program could:
 - Establish uniform professional standards
 - Provide accountability through oversight and enforcement
 - Ensure consistent testing and maintenance