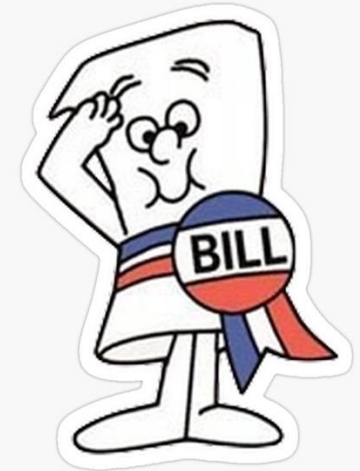


**Politics, how it can kill your  
CCC Program if you are not  
paying attention**



# Politics, how it can kill your CCC Program if not paying attention

- Issue in North Carolina
- Working with others within the industry to educate North Carolina legislatures
- Examine North Carolina State rules and Regulations
- Meeting with North Carolina State EPA, aka, North Carolina Department of Environmental Quality (NCDEQ)

# North Carolina Senate Bill 166 is a 71-page bill with 2 pages on backflow

1. (a) No public water system owned or operated by a local government unit, as that term is defined in G.S. 159G-20(13), shall require a customer to install a backflow preventer on an existing nonresidential or residential connection, including multifamily dwellings, not otherwise required by State or federal law except where the degree of hazard from the customer's connection is determined to be high by the Department (NCDEQ).
2. (c) A public water system owned or operated by a local government unit, and its employees, including the Cross Connection Control Operator in Responsible Charge, is immune from civil liability in tort from any loss, damage, or injury arising out of or relating to the backflow of water into potable water supply systems where a backflow preventer is not required by State or federal law, or where the degree of hazard from the customer's connection is not determined to be high by the Department (NCDEQ).
3. (f) No public water system owned or operated by a local government unit shall require periodic testing more frequently than once every three years for backflow preventers on residential irrigation systems that do not apply or dispose chemical feeds.



## What should we do?

We have this bill: we need to find a way to education our legislatures ASAP!

Partnership-created and a presentation for legislatures. Emails went to all NC Senate and House members and their assistants.



# Talking Points



- What are cross-connections?
- What is backflow?
- What causes backflow?
- The risks cross-connections introduce
- How is backflow mitigated?
- The importance of annual backflow preventer testing
- Q&A





# What Are Cross-Connections?



A cross-connection is the physical connection between drinking water and non-drinking water supplies



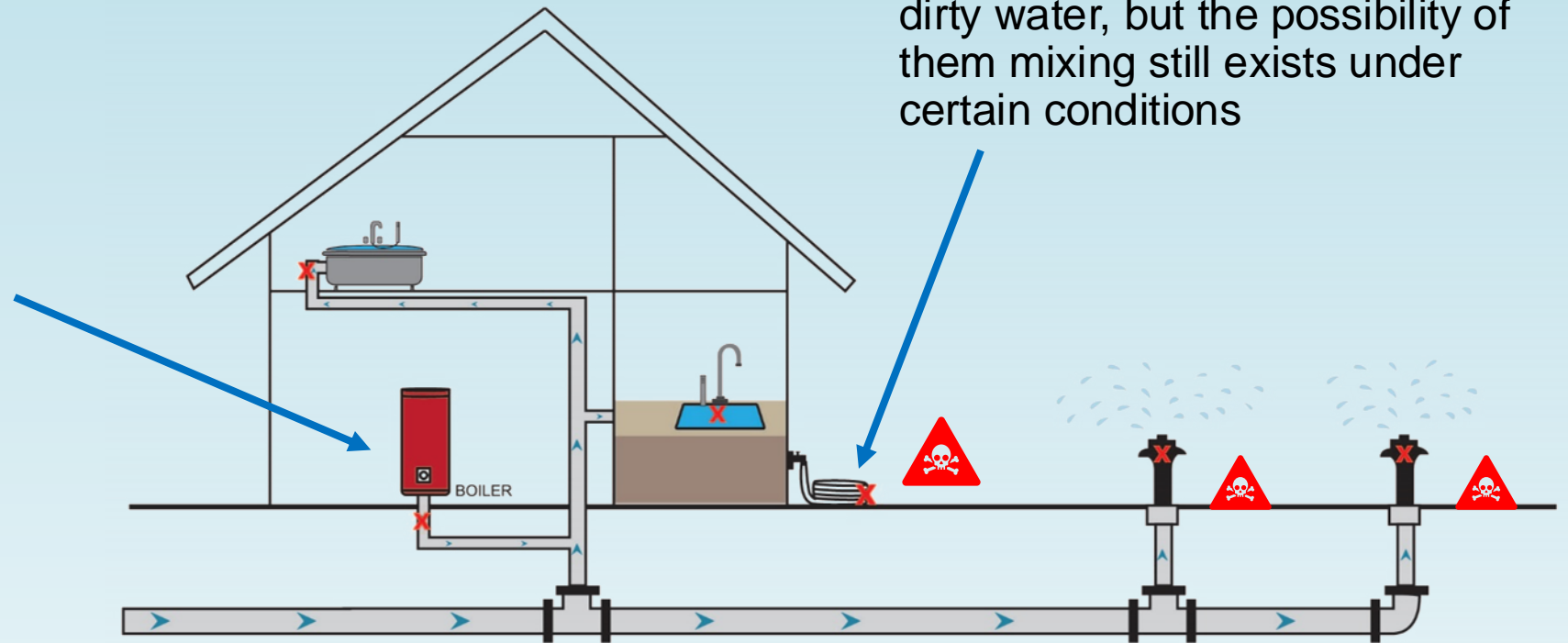
# Types of Cross Connections

## Direct Cross-Connection

When clean and dirty water can mix because they're directly linked without any protection in between

## Indirect Cross-Connection

When there's some separation or gap between the clean and dirty water, but the possibility of them mixing still exists under certain conditions



X Potential Cross Connection

# What is Backflow?

**Backflow:** the reverse flow of water or other liquids, mixtures or substances into the distributing pipes of a drinking water supply



# What Causes Backflow?



Backflow happens when water in a pipe flows the wrong way, which can cause contaminated water to mix with clean drinking water

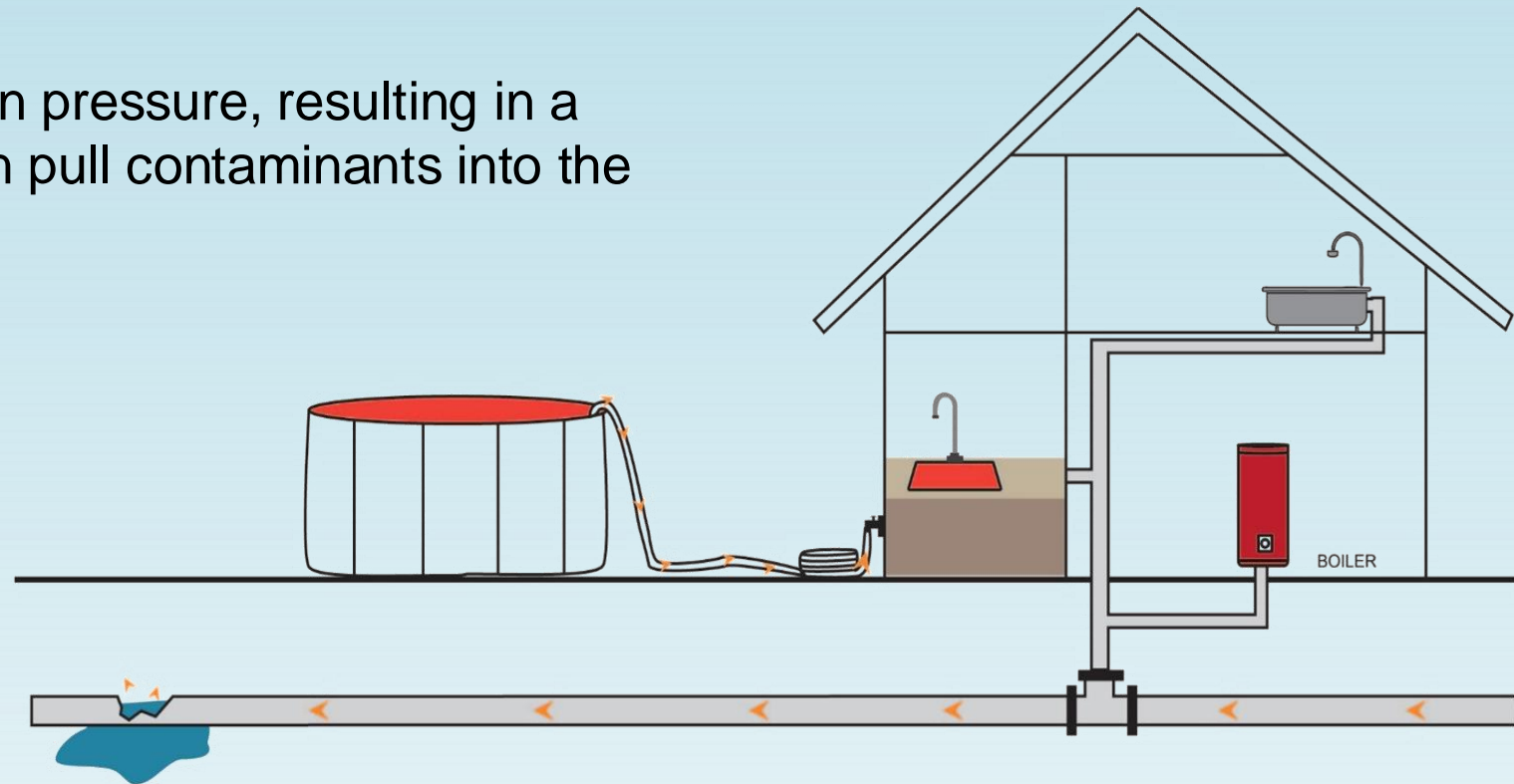
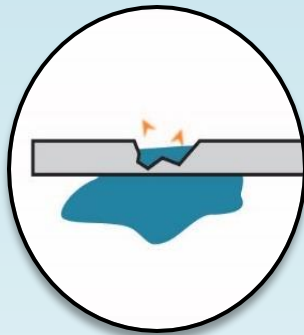
Backflow occurs for one of two reasons:

1. Backsiphonage
2. Backpressure

# What is Backsiphonage?

## Backsiphonage

Backflow caused by a drop in pressure, resulting in a vacuum-like effect which can pull contaminants into the drinking water supply

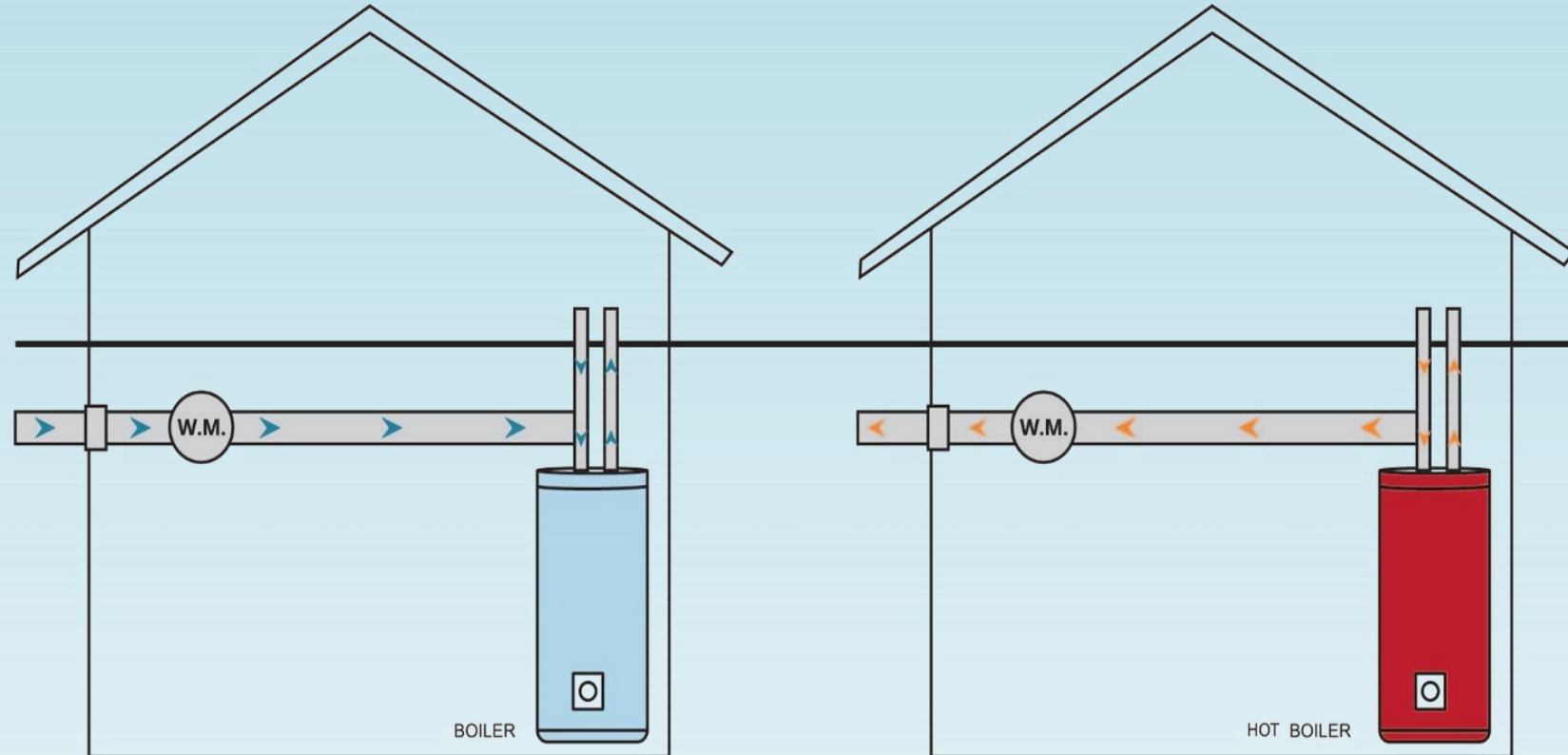




# What is Backpressure?

## Backpressure

Backflow caused by an increase in the building's pressure above the supply side pressure. This usually occurs because of pumps or thermal expansion





# Backflow Incident Repercussions

# 2010 Massachusetts Incident



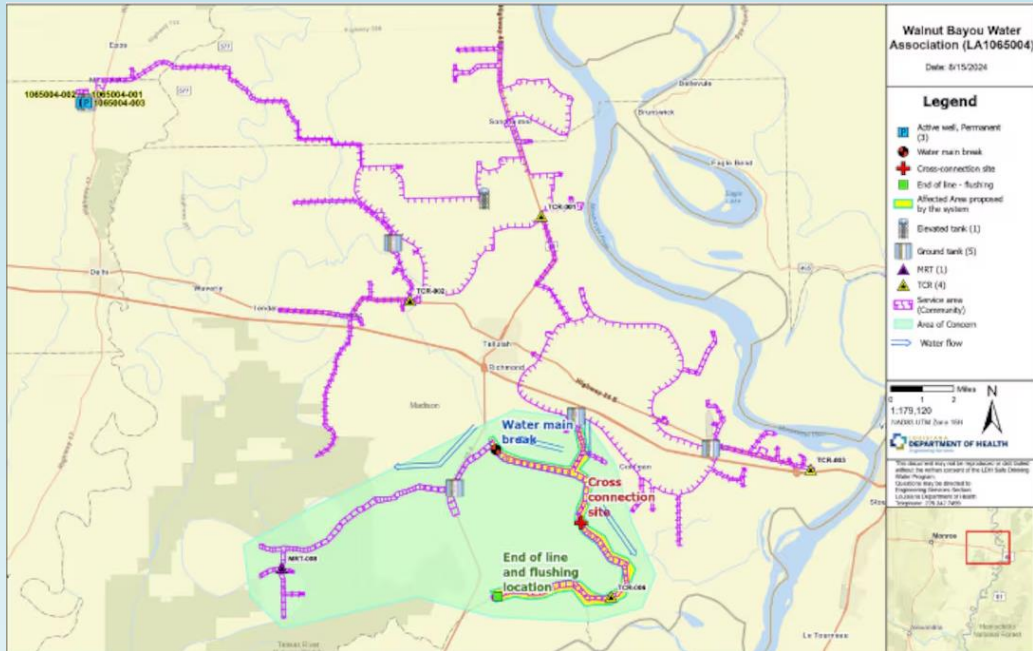
- A boil-water order was issued in 30 communities
- The incident affected nearly two million residents
- The broken pipe caused a "catastrophic" leak, dumping eight million gallons of water per hour into the Charles River
- The Governor declared a state of emergency and mandated the boil-water order for Boston and nearby communities.



# 2024 Louisiana Incident



LDH issues 'do not use' water advisory for some Madison Parish residents



- The Louisiana Department of Health issued a 'do not use' water advisory for Madison Parish residents
- The advisory was prompted by backflow of the herbicide paraquat into the water supply while a farmer was filling a tank

# 1997 Charlotte Incident

- A chemical leak contaminated the drinking water in Mecklenburg County, North Carolina
- The incident occurred during a firefighting drill at Charlotte/Douglas International Airport, where a truck accidentally flushed a chemical into the water system
- 29 schools in the affected area faced closures due to the contamination
- Residents were advised to avoid drinking the water until further notice.

FOOD, 1E NATION, 5A

# The Charlotte Observer

www.charlotte.com WEDNESDAY, SEPTEMBER 3, 1997 METRO EDITION 50¢

## Dow has best day since '91, gains 257 'incredibly good' economy plays role

By TED REED Staff Writer

Wall Street's August correction is over. The Dow Jones industrial average rose 237.86 points Tuesday, staging its biggest point gain ever, on the first day of trading after a 7.3-percent drop in August, its worst month since August 1990.

"We had a sell-off for a couple of weeks, but the economic outlook is incredibly good. I will

## Chemical leak taints water

### Up to 29 schools may not open today

By LEIGH DYER Staff Writer

More than two dozen Charlotte schools might not open this morning because of a chemical leak that contaminated drinking water Tuesday across a quarter of Mecklenburg County.

Officials warned residents of the county's southwest quadrant not to drink tap water until further notice.

Charlotte-Mecklenburg Schools officials hadn't decided early today whether to close any schools.

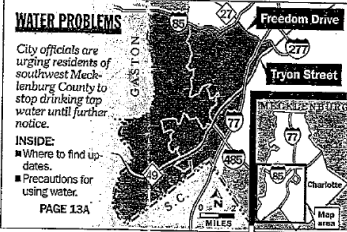
"It could take all night to figure out where we stand," said Superintendent Eric Smith. "We need verification that the water is safe. If not, we have to determine whether we can provide enough bottled water for everyone. And if we can assure that lunch can be prepared safely."

The chemical leaked Tuesday at Charlotte/Douglas International Airport during a firefighter training exercise. Firefighters were flushing out a truck loaded with the chemical when the liquid backed up through the fire hose and into a water hydrant.

Charlotte-Mecklenburg Utility Department customers in the southwestern portion of Mecklenburg, bordered by the Catawba River, Interstate 85, Freedom Drive, Interstate 77 and the southern county line, shouldn't drink the water, wash dishes or brush their teeth with the water.

Updates on chemical levels in the water will be available this morning on The Observer's on-line

Please see **CHEMICAL** / page 13A



**WATER PROBLEMS**

City officials are urging residents of southwest Mecklenburg County to stop drinking tap water until further notice.

**INSIDE:**

- Where to find updates.
- Precautions for using water.

PAGE 13A

BRENDA PINNELL/Staff

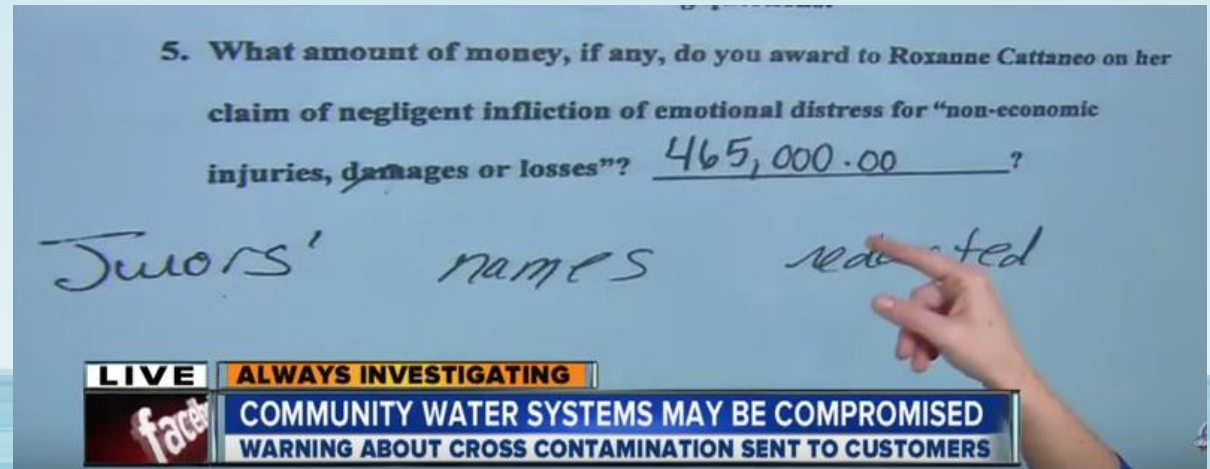
# Financial Impact of Backflow Events



- Labor Costs – 494 hours to remediate an incident
- Payouts from lawsuits

## A Mundane Menace Emerges

**NO ONE THINKS TWICE ABOUT THE HEALTH HAZARD OF DRINKING TAP WATER. BUT WHEN WATER IS CONTAMINATED, NO ONE IS SAFE. OVER THE PAST 31 YEARS, DIRTY DRINKING WATER HAS BEEN BLAMED FOR MORE THAN 12,000 CASES OF ILLNESS. FEW, IF ANY, INSURERS HAVE POLICIES COVERING CONTAMINATED TAP WATER. OVER THE PAST FEW YEARS, INSURERS HAVE PAID MORE THAN \$20 MILLION TO SETTLE WITH VICTIMS SICKENED BY BACKFLOW. BY KRISTINE SORENSEN GRIFFIN**





# How is Backflow Mitigated?

- Utilizing backflow preventers with a cross-connection control plan

## What is a Backflow Preventer?

A device to prevent water from flowing backward and contaminating the clean water supply.

Ensure that water only flows in one direction—from the clean water supply system to the outlets, such as faucets, irrigation systems, or other water-using devices.



# Why do Backflow Preventers Need to be Tested



Backflow preventers work 24/7/365 and should be inspected annually to ensure proper functionality



Like fire safety equipment and medical gas systems, annual testing is critical to ensure public health and safety



A malfunctioning backflow preventer could be contaminating the clean water supply, potentially sickening thousands of people before being identified

# Why do Backflow Preventers Need to be Tested



FOUNDATION FOR CROSS-CONNECTION CONTROL  
AND HYDRAULIC RESEARCH LABORATORY

19 June 2024

Charlotte Water  
5100 Brookshire Blvd.  
Charlotte, NC 28216  
Attn: Ms. Kathy Riley  
Backflow Compliance

Dear Kathy,


This is to provide you with the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (Foundation) position on the frequency of testing the backflow prevention assemblies (assemblies). The Foundation was founded to work on the problem of cross-connections in 1944. Since that time, the Foundation has developed a standard for backflow prevention assemblies and has an approval program for backflow prevention assemblies, which is widely accepted across the nation.

Field testing backflow prevention assemblies identifies whether assemblies are functioning properly. Like any other mechanical type of device, assemblies are subject to failure. Since all assemblies are installed to protect the public from pollutants or contaminants; field testing the assemblies on a scheduled basis becomes critical in maintaining safe drinking water.

The standard practice of care in the cross-connection control and backflow prevention industry is to field test these assemblies on an annual basis. Annual field testing is the general recommendation in the Foundation's Manual of Cross-Connection Control, Tenth Edition. This is also supported in the Water Research Foundation (AWWARF) report 90928F, Impacts of Cross-Connections in North American Water Supplies, where 88% of the responding water suppliers required field testing on an annual basis. In fact, there are many states throughout the country that have regulations requiring the annual testing of the assemblies.

The Foundation's annual testing recommendation originates from its Approval Program for backflow prevention assemblies. As part of the program, all assemblies, having passed the laboratory evaluation, are required to successfully complete a one-year field evaluation. Therefore, the Foundation is confident in making a recommendation of annual field testing for assemblies. Field testing assemblies regularly helps ensure that, once assemblies are installed, they continue to operate properly, protecting the public health by protecting the drinking water.

I hope this information is helpful. If you have any questions or need additional information, please let us know.

Yours truly,  
  
Henry W. Chang  
Chief Engineer

The University of Southern California established the Foundation for Cross Connection Controls and Hydraulics Research Laboratory

- Responsible for certifying all backflow prevention devices on the market
- Recommend backflows should be tested annually at minimum.

The Foundation's annual testing recommendation originates from its Approval Program for backflow prevention assemblies. As part of the program, all assemblies, having passed the laboratory evaluation, are required to successfully complete a one-year field evaluation. Therefore, the Foundation is confident in making a recommendation of annual field testing for assemblies. Field testing assemblies regularly helps ensure that, once assemblies are installed, they continue to operate properly, protecting the public health by protecting the drinking water.

July 5<sup>th</sup>, 2024

RALEIGH

Governor Roy  
Cooper vetoed  
the following  
bill:

Senate Bill  
166: 2024 Bldg.  
Code Regulatory  
Reform.



# Legislature Overrides Governor Cooper's Veto and now becomes law 😞

September 16, 2024

The 2024 NC General Assembly has provided yet another blow to reasonable environmental and energy policy. Both legislative chambers have now voted to override Governor Roy Cooper's veto of SB 166, which sabotages common-sense efforts to improve energy efficiency standards for new housing construction.

As Governor Cooper said in his veto message on July 5, "By limiting options for energy efficiency and electric vehicles, [SB 166] prevents North Carolina's building code from adopting innovations in construction and mobility that save consumers money. This bill also removes subject matter experts from the building code council, including architects, active fire service, a coastal expert, local government officials, and public at large membership, and limits the knowledge and practical experience of the body tasked with ensuring

**all buildings are safely designed."**





**September  
24th, 2024**

Meeting with  
ORC within the  
State of North  
Carolina.  
Meeting lasted  
almost 3 hours.

OPINION

## ***New laws help home builders save money, but with big risks | Opinion***

By Ned Barnett

September 15, 2024 1:16 AM |  2



September 15, 2024. As North Carolina resists code changes to reduce builders' expense, it will cost the state millions in federal dollars. The federal government will not pay for rebuilding after natural disasters if a state is following older and weaker building codes.

**What happened a few weeks after the bill was overturned?**



# Hurricane Helene hits Western North Carolina

- North Carolina was severely impacted by Hurricane Helene during late September 2024, primarily in its western Appalachian region, causing at least 96 reported deaths and significant destruction of infrastructure and residential areas across several settlements.




# Rebuilding North Carolina hits the news

10/29/24, 1:54 PM

How North Carolina Republicans Left Homes Vulnerable to Helene - The New York Times

## *How the North Carolina Legislature Left Homes Vulnerable to Helene*

Under pressure to control housing costs, Republican lawmakers rejected standards meant to protect against disasters, experts say.

 Listen to this article - 8:39 min [Learn more](#)



**By Christopher Flavelle**

Christopher Flavelle is a climate reporter who has covered building codes for almost a decade.

Oct. 3, 2024



The amount of rain that Tropical Storm Helene unleashed over North Carolina was so intense, no amount of preparation could have entirely prevented the destruction that ensued.

But decisions made by state officials in the years leading up to Helene most likely made some of that damage worse, according to experts in building standards and disaster resilience.

Over the past 15 years, North Carolina lawmakers have rejected limits on construction on steep slopes, which might have reduced the number of homes lost to landslides; blocked a rule requiring homes to be elevated above the height of an expected flood; weakened protections for wetlands, increasing the risk of dangerous storm water runoff; and slowed the adoption of updated building codes, making it harder for the state to qualify for federal climate-resilience grants.

<https://www.nytimes.com/2024/10/03/climate/north-carolina-homes-helene-building-codes.html>

1/9

## **ASHEVILLE CITY WATER IS FULLY RESTORED AND SAFE**

AS OF TODAY, NOV 18 AT 11 AM, THE BOIL NOTICE HAS BEEN LIFTED. CITY OF ASHEVILLE WATER CUSTOMERS CAN SAFELY CONSUME TAP WATER AGAIN. ALL TESTS CAME BACK NEGATIVE FOR BACTERIA, INCLUDING ECOLI AND COLIFORM.

**REMEMBER, FLUSH COLD WATER TO ELIMINATE RISK OF LEAD IF YOUR PIPES ARE 1988 OR OLDER**



**SAGE TURNER, ASHEVILLE CITY COUNCIL**

On November  
18th, 2024  
water restored  
in Asheville



# News coming out about our water supply

BY DAVID L. HOWARD

**Editor's note:** *This Opinion piece was written in response to "Charlotte has one chance to get its transit plan right. This isn't it," (Aug. 26 Editorial). The writer is a former Charlotte City Council member, former NC DOT official and a Federal Highway Administration appointee.*

The recent Charlotte Observer editorial critiquing Charlotte's proposed transit plan missed a critical point: We must generate the necessary local funds to unlock substantial federal dollars available in the Bipartisan Infrastructure Law.

Without a local match, our community risks leaving millions, if not billions, of federal dollars on the table — money that could be used to expand transit options, reduce congestion and improve the overall quality of life for all residents.

As a former executive at the U.S. Department of Transportation and the North Carolina Department of Transportation, I can attest that the stars rarely align for cities as they are now for Charlotte

infrastructure projects often work. The broad outlines are set, funding is secured, and then the details are hammered out with input from all stakeholders.

The alternative — waiting for a perfect plan — could mean missing out on federal dollars and watching other regions leap ahead while Charlotte is left playing catch-up.

The success of regional transit hinges on collaboration and compromise. What's at stake is far greater than a single transit line or a specific project: it's the long-term viability of a regional transportation network that can reduce congestion, enhance connectivity, and promote sustainable growth.

The key is to design a system that is adaptable and forward-looking, capable of evolving as the city grows and transit needs change.

It's incumbent on all stakeholders to come to the table and work out the details, rather than risk losing out on billions of dollars in federal funding. To fully leverage these



KAITLIN MCKEOWN kmckeown@newsobserver.com

Omar Martinez, 6, smiles while splashing in the water in the Eno River on Monday, June 24, 2024, in Durham, N.C.

## *If NC won't protect water quality, the EPA should*

BY NED BARNETT

week. They petitioned the federal Environmental Protection Agency to protect fishing and wildlife habitats. The state's unregulated environmental commissions. In the





December 10<sup>th</sup>,  
2024 meeting with  
North Carolina  
Department of  
Environmental  
Quality, (NCDEQ)

# **Carolina's Chapter American Backflow Prevention Association (ABPA)**

**Speakers: Nissa Pauley  
Kathy Riley**

# What is backflow and how will SB166/SL 2024-49 impact NC public water systems?

## Talking Points

- What are cross connections? Backflow? What causes it?
- The risks cross connections introduce
- How do we prevent backflow events?
- How will SB166/SL 2024-49 impact NC public water systems?
- Solutions
- Q&A

# What Are Cross Connections?



A cross connection is the physical link or connection between drinking water (potable) and non-drinking water (non-potable).

## Common Cross Connections:

- Lawn Irrigation, Swimming pools
- Chemical Stations
- Fire sprinklers
- Boilers, Chiller, any other HVAC Equipment
- Pedicure bowls
- Lab, Kitchen, Dental Equipment



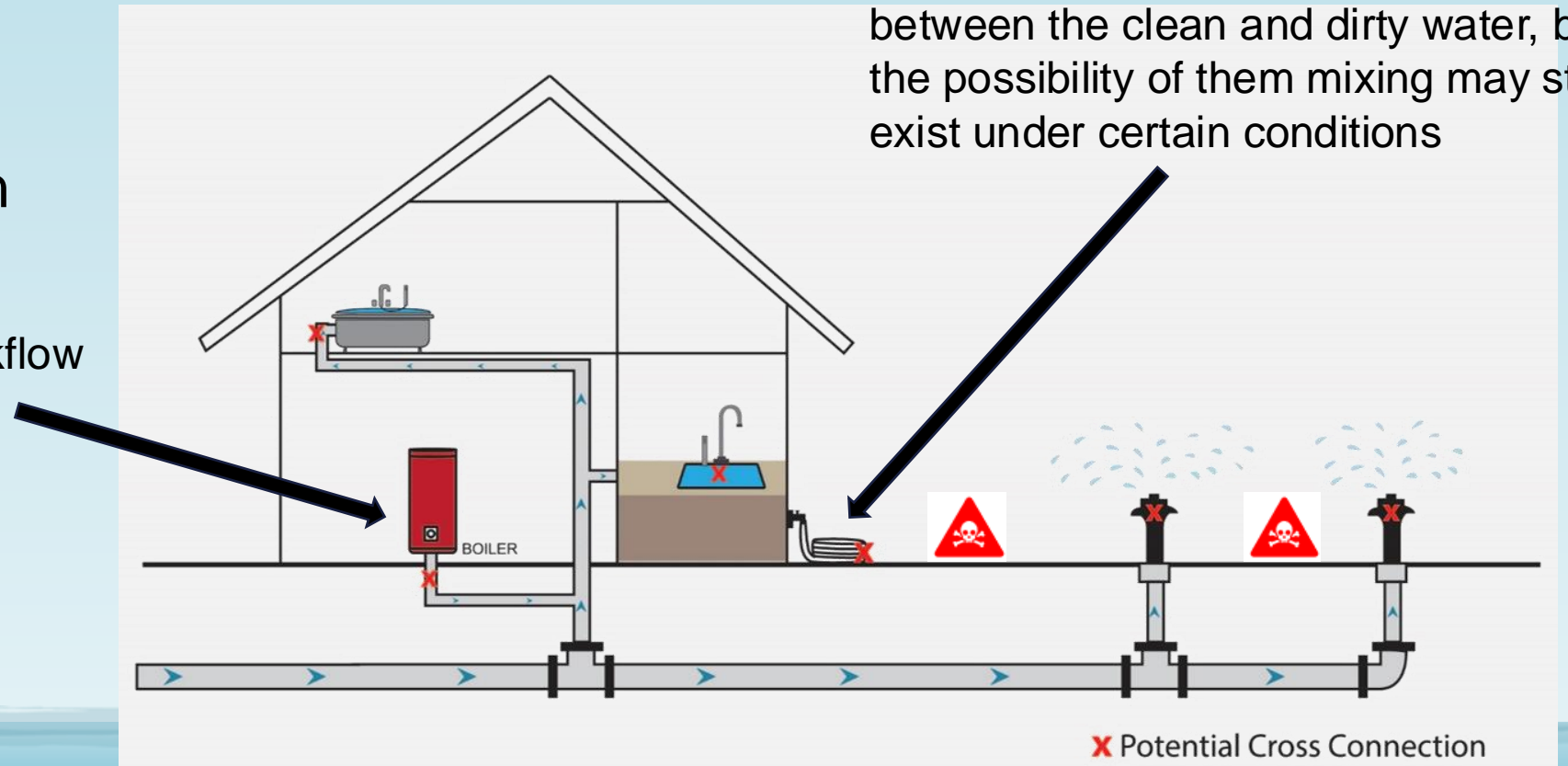
# Types of Cross Connections

## Direct Cross Connection

When clean and dirty water are **directly connected** without backflow protection in between them

## Indirect Cross Connection

When there's a separation or gap between the clean and dirty water, but the possibility of them mixing may still exist under certain conditions





## What is Backflow?

- **Backflow:** the reverse flow of water or other substance into a public water system from an unintended source.

# What Causes Backflow?

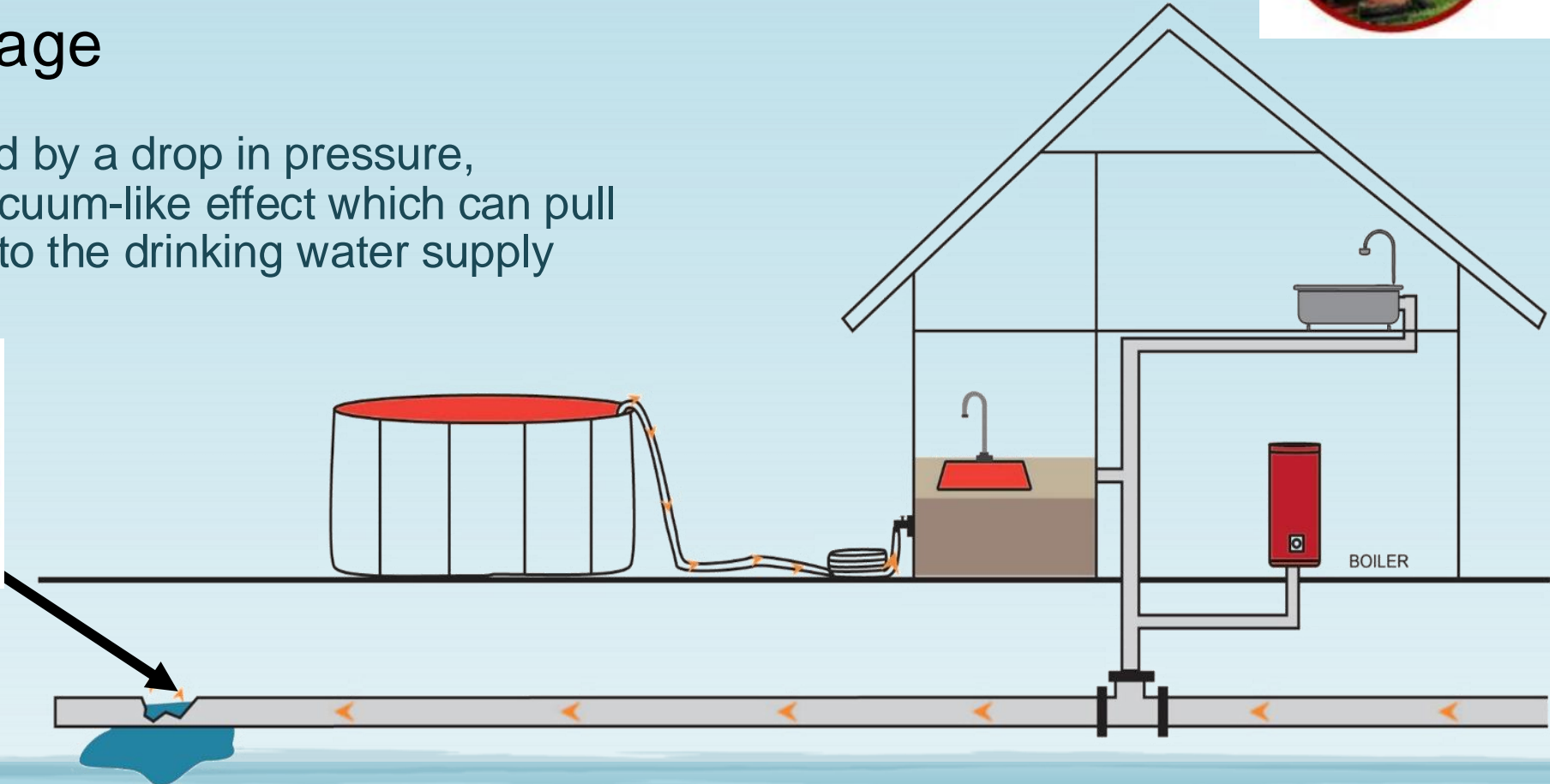
Backflow events occur when water in a pipe flows in the opposite direction, which can cause contaminated water to mix with clean drinking water. Backflow occurs for one of two reasons:

1. Backsiphonage – water is **sucked** backwards in the wrong direction.
2. Backpressure – water is **pushed** backwards in the wrong direction.

# What is Backsiphonage?

## Backsiphonage

Backflow caused by a drop in pressure, resulting in a vacuum-like effect which can pull contaminants into the drinking water supply

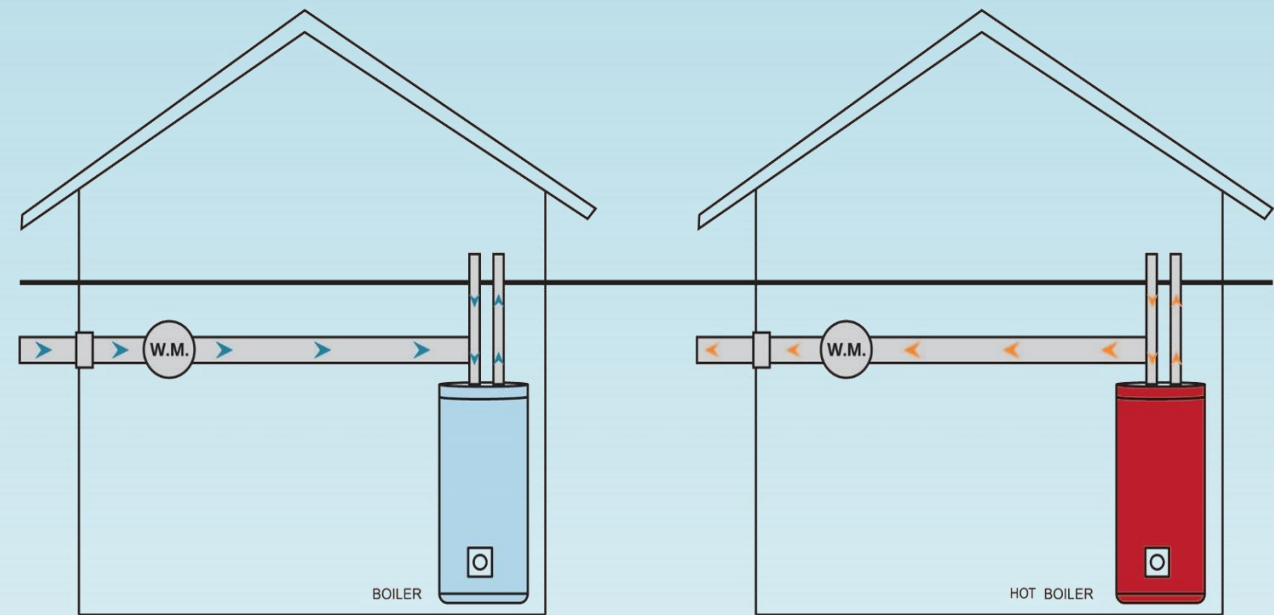




# What is Backpressure?

## Backpressure

Backflow caused when the customer's plumbing side water pressure is **HIGHER** than the supply side. This usually occurs because of pumps, thermal expansion, or even lawn sprinkler systems on a sloped area.



# How Do We Prevent Backflow Events?

## What is a Backflow Preventer?

A device or assembly to prevent water from flowing backward and contaminating the clean potable water supply.

Backflow preventers ensure that water only flows in one direction—from the clean potable water supply system to the outlets, such as faucets, irrigation systems, or other water-using devices.

Mechanical equipment like backflow preventers need regular maintenance and repair just like our vehicles to ensure they are working properly.



# What is a Cross Connection Control Program?

Under the provisions of the safe drinking water act of 1974, the federal government has established through the EPA, national standards for safe drinking water. The states are responsible for the enforcement of these standards. Water purveyors are held responsible for this compliance.

**GOALS: Protect, reduce, control, and comply with all State & Federal Requirements**

- **Containment** Program – this approach utilizes a **minimum** requirement and protects at the meter.
  - This approach protects the Water Purveyor but not the customers internal plumbing
- **Isolation** Program – this approach protects the customers internal plumbing. This is mostly covered by the NC Plumbing Code

# What did North Carolina Administrative Code (NCAC) Title 15A say?

**OLD** NCAC Title 15A, Subchapter 18C, Sections .0300 and .0406, and Appendix B, Figure 2

- KEY Verbiage, section .0709 “Prevention of Backflow and Back-siphonage”
- KEY Verbiage, “**Public water suppliers may adopt more stringent requirements.**” This is because water purveyors are granted primacy in the Safe Drinking Water Act.
- KEY Verbiage, under “Facilities that require the installation of a backflow preventer, Most commercial establishments.” This is a CONTAINMENT (at the meter) Program that 100% of water purveyors do.

## FIGURE 2 NORTH CAROLINA GUIDELINES CROSS CONNECTION CONTROL IN WATER DISTRIBUTION SYSTEMS

These guidelines are supplemental to Section .0406(b). These guidelines are intended as a minimum requirement. Public water suppliers may adopt more stringent requirements. Each supplier of water shall conform to the minimum requirements established in these guidelines.

### I. Degree of Hazard:

- A. Severe: Actual or potential threat of contamination that presents an imminent danger to the public health with consequence of serious illness or death.
- B. Moderate: One that presents foreseeable and significant potential for pollution, nuisance, aesthetically objectionable or other undesirable alterations of the drinking water supply.

### II. Backflow Prevention Assembly Requirements:

Degree of hazard	RPZ*	DCVA**	Air Gap
Severe	X	-----	X
Moderate	-----	X	-----

- \* Reduced pressure zone
- \*\* Double check valve assembly
- \*\*\* This is not intended to be an exhaustive list

### III. Facilities that Require Installation of a Backflow Preventer\*\*\*:

#### A. Moderate hazard - DCVA:

1. Fire sprinkler systems without booster pump facilities or chemical additives.
2. Connection to tanks, lines and vessels that handle non-toxic substances.
3. Lawn sprinkler systems without chemical injection or booster pumps.
4. **Most commercial establishments.**
5. Automatic service stations, bakeries and beauty shops with no health hazard and bottling plants with no back pressure.
6. etc.

#### B. Severe hazard - RPZ or air gap:

1. **Lawn sprinkler systems with chemical injection or booster pump**
2. Wastewater treatment plants
3. Connection to an unapproved water system or unapproved auxiliary water supply
4. Connection to tanks, pumps, lines, steam boilers or vessels that handle sewage, lethal substances, toxic or radioactive substances



# What does NCAC Title 15A say now?

## **CURRENT** NCAC Title 15A, Subchapter 18C, Sections .0300 and .0406, and Appendix B, Figure 2

- [Revised Rules](#) (Effective July 1, 2019)
- [15A NCAC 18C.0406 (a)] states that no person shall create an unprotected cross connection to the public water system.
- [15A NCAC 18C.0406 (a2)] “Where required, the supplier of water shall install or require to be installed an appropriate testable backflow prevention assembly prior to making the service connection.” NC Plumbing Code does not define a containment backflow preventer. Plumbing code doesn’t apply until 5 ft of the foundation wall and internal plumbing.

(b) **Cross-Connections**. No person shall construct, **maintain**, or operate a physical arrangement whereby a public water system has a cross-connection without the use of proper backflow protection.

(1) No person shall introduce any water into the distribution system of a public water supply through any means other than from a source of supply duly approved by the Department or its **representatives** or make any physical connection between an approved supply and unapproved supply unless authorized in an emergency by the Department or its representative.

(2) **Service Connection Relation to Plumbing Code**. No supplier of water shall provide a service connection to any plumbing system that does not comply with the North Carolina State Building Code, Volume II, and **all** applicable local plumbing **codes**. **Where required, the** supplier of water shall install or require to be installed **an** appropriate testable backflow prevention assembly prior to making the service connection. Design of backflow prevention assemblies for service connections **shall** not require Department review.

# How will SB166/SL 2024-49 impact NC Public Water Systems?

The new Law makes Cross Connection Programs REACTIVE instead of Preventative.

This law directly impacts the water purveyors ability to perform their responsibilities in *maintaining* safe drinking water to each tap and undermines public health and safety. A water purveyor can monitor its source and provide treatment to ensure safe drinking water is provided, however we must also ensure that the water users do not affect water quality through unprotected cross connections. Without Backflow preventers, there's a heightened risk of contamination, endangering the health of consumers.

# Solution to §130A-330(a)

## § 130A-330. Local authority to require backflow preventers; testing.

(a) No public water system owned or operated by a local government unit, as that term is defined in G.S. 159G-20(13), shall require a customer to install a backflow preventer on an existing nonresidential or residential connection, including multifamily dwellings, not otherwise required by State or federal law except where the degree of hazard from the customer's connection is determined to be high by the Department.

- EDIT [15A NCAC 18C.0406 (a2)] to “Where required, the supplier of water shall ~~install or~~ require to be installed an appropriate testable backflow prevention assembly prior to making the service connection.”
- EDIT [15A NCAC 18C] “Appendix B”, “High Hazard Service Connections” # 5 to “Fire sprinkler systems with booster pump facilities, ~~or~~ chemical additives, ~~or~~ FDC connection.”
- ADD [15A NCAC 18C] “Appendix B”, “High Hazard Service Connections” list to include “All buildings connected to City water excluding single-family dwellings with no additional hazards.”

# Solution to §130A-330(d)

(d) The Department shall determine whether the degree of hazard for a service connection is high when the installation of a backflow preventer is not otherwise required by State or federal law. The Department shall provide notice of such determinations on its website.

- EDIT 15A NCAC 18C.0406 to include a **new** subsection to say “All water suppliers/water purveyors shall at a minimum follow the AWWA M-14 Backflow Prevention and Cross Connection Control.”
- EDIT 15A NCAC 18C.0406 to include a **new** subsection to say “All water suppliers/water purveyors shall at a minimum maintain a Containment Program as defined by the AWWA M-14.”
  - It currently says “where required”
- ADD [15A NCAC 18C] “Appendix B”, “High Hazard Service Connections” to include “All buildings connected to City water excluding single-family dwellings with no additional hazards.”



(f) No public water system owned or operated by a local government unit shall require periodic testing more frequently than once every three years for backflow preventers on residential irrigation systems that do not apply or dispose chemical feeds.

## NC Plumbing Code

- **608.1 General** A potable water supply system shall be designed, installed and maintained in “such a manner so as to **PREVENT** contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross connections or any other piping connections to the system.”
- **608.16.5 Connections to Lawn Irrigation Systems** The potable water supply to lawn irrigation systems shall be protected against backflow by an AVB, a PVB or RP type backflow prevention assembly. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a RP backflow prevention assembly

**\*\*SIDE NOTE: AVB, PVB, and RP type backflows are designated to HIGH hazard \*\***

- **301.7 Conflicts** Where conflicts between this code and the conditions of the listing or the manufacturer's installation instructions occur, the provisions of this code apply.  
**Exception:** Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and manufacturer's installation instructions shall apply.

# EPA & Manufacturer's installation, what do they say?

## EPA says:

### X. Periodic Testing

A. Reduced pressure principle backflow devices shall be tested and inspected at least semi-annually.

B. Periodic testing shall be performed by the Department's certified tester or his delegated representative. This testing will be done at the owner's expense.

C. The testing shall be conducted during the Department's regular business hours. Exceptions to this, when at the request of the owner, may require additional charges to cover the increased costs to the Department.

*Annual average irrigation failure rate is about 13-15% x 3 years = approx. 40%-45% failure rate. During the 3-year timeframe almost half of water customers would have compromised drinking water.*

## Manufacturer's says:

**Application** Designed for installation on water lines to protect against both backsiphonage and backpressure of contaminated water into the potable water supply. Assembly shall provide protection where a potential **health hazard** exists.

### **▲ WARNING**

**Need for Periodic Inspection/Maintenance:** This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. All products must be retested once maintenance has been performed. Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal and external components helps assure maximum life and proper product function.

# Solution to §130A-330(f)

(f) No public water system owned or operated by a local government unit shall require periodic testing more frequently than once every three years for backflow preventers on residential irrigation systems that do not apply or dispose chemical feeds.

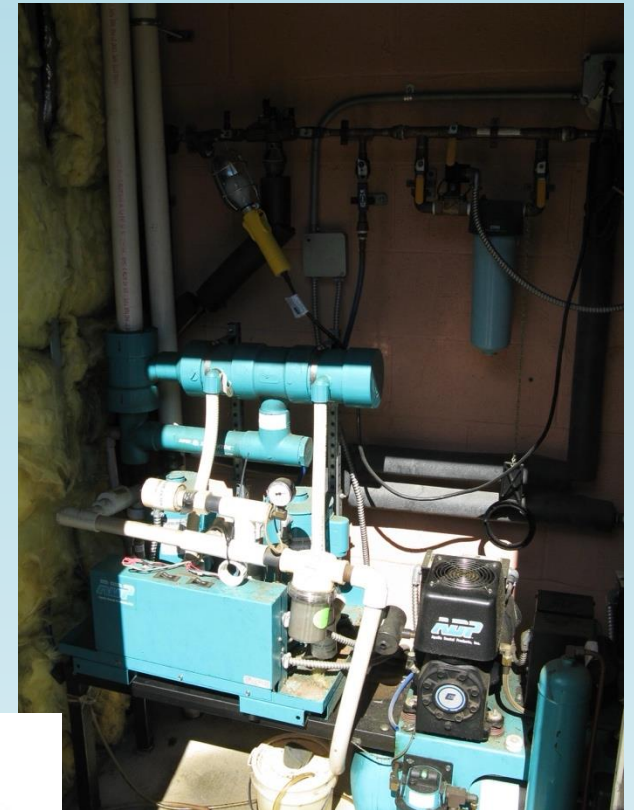
- EDIT 15A NCAC 18C.0406 to include a **new** subsection to say “All water suppliers/water purveyors shall at a minimum maintain an annual testing of backflow preventer assemblies in accordance with AWWA M-14.”
- EDIT [15A NCAC 18C] “Appendix B”, “High Hazard Service Connections” to say “**All** Lawn sprinkler systems ~~with chemical injection or booster pump~~.”

# Real Life Examples

## Example 1

Code official is called in because an *existing* dental office is complaining of pink water in their restrooms. The Code official finds that the vacuum system was installed **after** the certificate of occupancy was granted and the spittoons on the dental chairs are being recirculated through their internal plumbing and coming out in the sink in the restrooms. A backflow is required to isolate the dental spittoons from the drinking water in the suite.

**SB 166/SL 2024-49 would prohibit the water purveyor from making that water customer install a backflow. Legally, the water purveyor cannot perform the work because this is on private property.**





# Real Life Examples

## Example 2

Code official is called in to an existing pizza restaurant because they have purple soapy bubble water coming out of the drink dispensers. The Code official determines that **after** the certificate of occupancy was granted a janitorial company came in and hooked up their soap and degreaser unit to the internal water line causing the soap to backflow and ultimately coming out from the drink dispensers.

**SB 166/SL 2024-49 would prohibit the water purveyor from making that water customer install a backflow. Legally, the water purveyor cannot perform the work because this is on private property.**



(d) The Department shall determine whether the degree of hazard for a service connection is high when the installation of a backflow preventer is not otherwise required by State or federal law. The Department shall provide notice of such determinations on its website.

Federal Law	State Law
<ul style="list-style-type: none"> <li>SDWA of 1974 and the SDWA Amendments of 1986 states, individual states are responsible for enforcing the regulations and supervising public water systems (PWS). The water purveyor has the primary responsibility for <b>preventing the introduction</b> of pollutants or contaminants into the public drinking water distribution system, as outlined in the SDWA (United States Environmental Protection Agency [U.S. EPA] 816-F-04-030). To accomplish this, water purveyors must establish and implement a CCC program.</li> </ul>	<ul style="list-style-type: none"> <li>NCDEQ documents, <b>Rules Governing Public Water Systems</b>, which is comprised of the NCAC sections that are applicable to the management of PWSs.</li> <li>The sections of the NCAC that apply to CCC are provided in Title 15A, Subchapter 18C, Sections .0300 and .0406, and <b>Appendix B, Figure 2</b> of the Rules Governing Public Water Systems provides CCC minimum requirements and guidance.</li> </ul>
<ul style="list-style-type: none"> <li>The SDWA enables states to apply for and receive primacy for the enforcement and management of CCC. The State of North Carolina (NC) has applied for and received primacy based on the condition that the NC standards are at least as stringent as the SDWA and that these standards are enforced.</li> </ul>	<ul style="list-style-type: none"> <li>The NCAC requires water purveyors to establish a CCC policy (T15A:18C.0307.c.5.A) and implement an operations and maintenance plan for backflow preventers (T15A:18C.0307.d.3)</li> </ul>

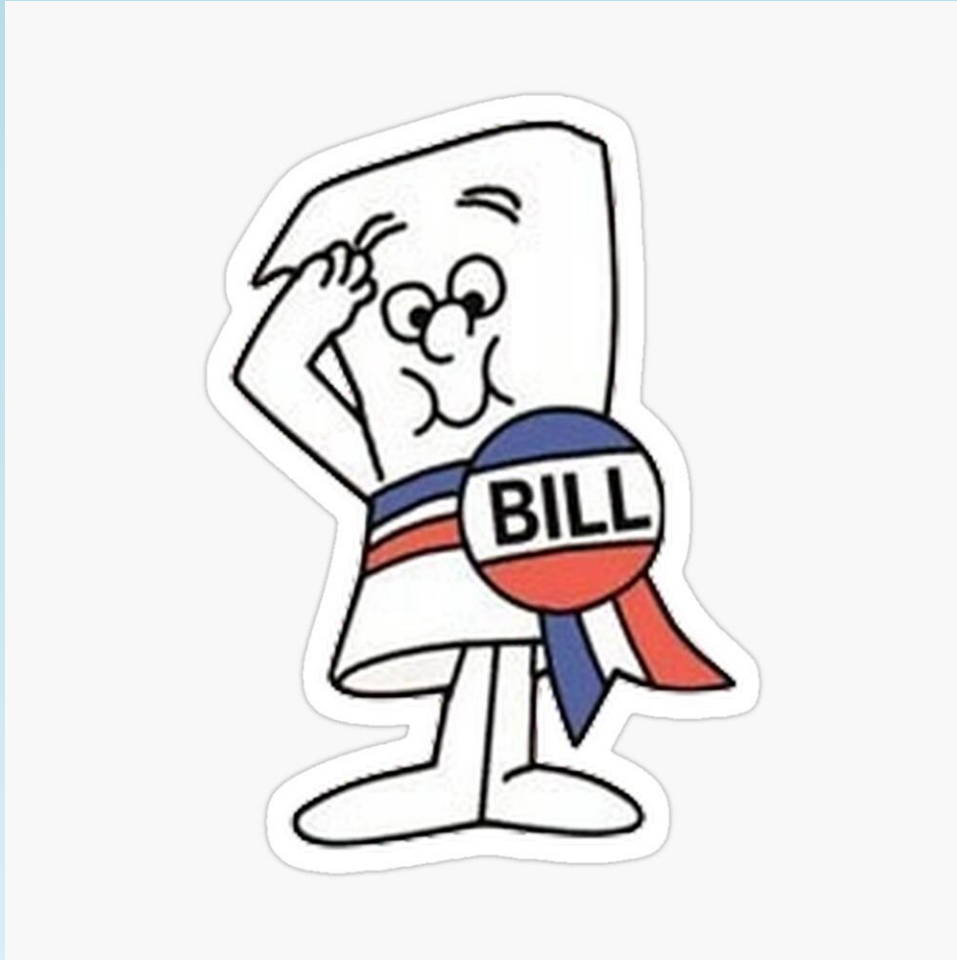
# AS OF DECEMBER 10TH 2024

- NCDEQ IS CURRENTLY UNDER CODE CHANGE THAT HAS TO FINALIZED BY MAY 2025. WERE HOPING OUR PROPOSED CHANGES GET INCORPORATED.
- EDIT 15A NCAC 18C.0406 to include a new subsection to say “All water suppliers/water purveyors shall at a minimum maintain an annual testing of backflow preventer assemblies in accordance with AWWA M-14.”
- EDIT [15A NCAC 18C] “Appendix B”, “High Hazard Service Connections” to say “**All** Lawn sprinkler systems including those **with chemical injection or booster pump**.”









January 29<sup>th</sup>, 2025

Possible introduction  
of a bill to amend  
Senate Bill 166.

# Don't Backslide on Backflow: Protect Your Family's and Neighbors' Drinking Water

Sponsored Content provided by [Jennifer Adams](#) - Chairwoman, Cape Fear Public Utility Authority

If your home has sprinklers or a swimming pool, you already know about backflow prevention assemblies. This device, usually covered by a plexiglass box and located at the side of your house, keeps contaminated water from your lawn or pool from flowing back into your home and public water supply.

But did you know about a new North Carolina state law that makes it even more important for you to keep up with regular inspections of your backflow device?

Until recently, North Carolina utilities like CFPUA could require homeowners to test their backflow devices annually. This was helpful for property owners and the community because regular inspection helps ensure backflow devices are functioning properly, which in turn protects our community's water supply from potentially harmful contaminants that can backflow into the system during a sudden drop in water pressure.

North Carolina Session Law 2024-49, which went into effect in September, changes how frequently water utilities can require these inspections. Now, utilities can only require homeowners to perform these important inspections every three years. The annual inspection requirement remains in place for businesses with backflow devices.

It may sound like this new law means homeowners have less responsibility to keep their backflow assemblies inspected. In fact, the law shifts legal liability for backflow-related contamination events onto homeowners.

Although CFPUA can no longer require you to have your backflow device tested yearly, we recommend you do.

[This Photo](#) by Unknown Author is licensed under [CC BY-NC](#)



# Questions?



**Little Rock Marriott**  
Nightly room rates from \$151

Conference Registration  
NOW OPEN!!!

**Join Us**

**ABPA CONFERENCE**  
LITTLE ROCK  
**2025 ARKANSAS**

**May 5th - 7th, 2025**

Conference Info



Please refer to the ABPA website for conference information.  
[www.abpa.org](http://www.abpa.org)

ABPA Annual Conference this May!

Roundtable discussion on this topic.



Politics, how it can kill your CCC Program if  
you are not paying attention

Thank you!

**Phone: 980-226-4304**

**Email: [Kathy.Riley@charlottenc.gov](mailto:Kathy.Riley@charlottenc.gov)**