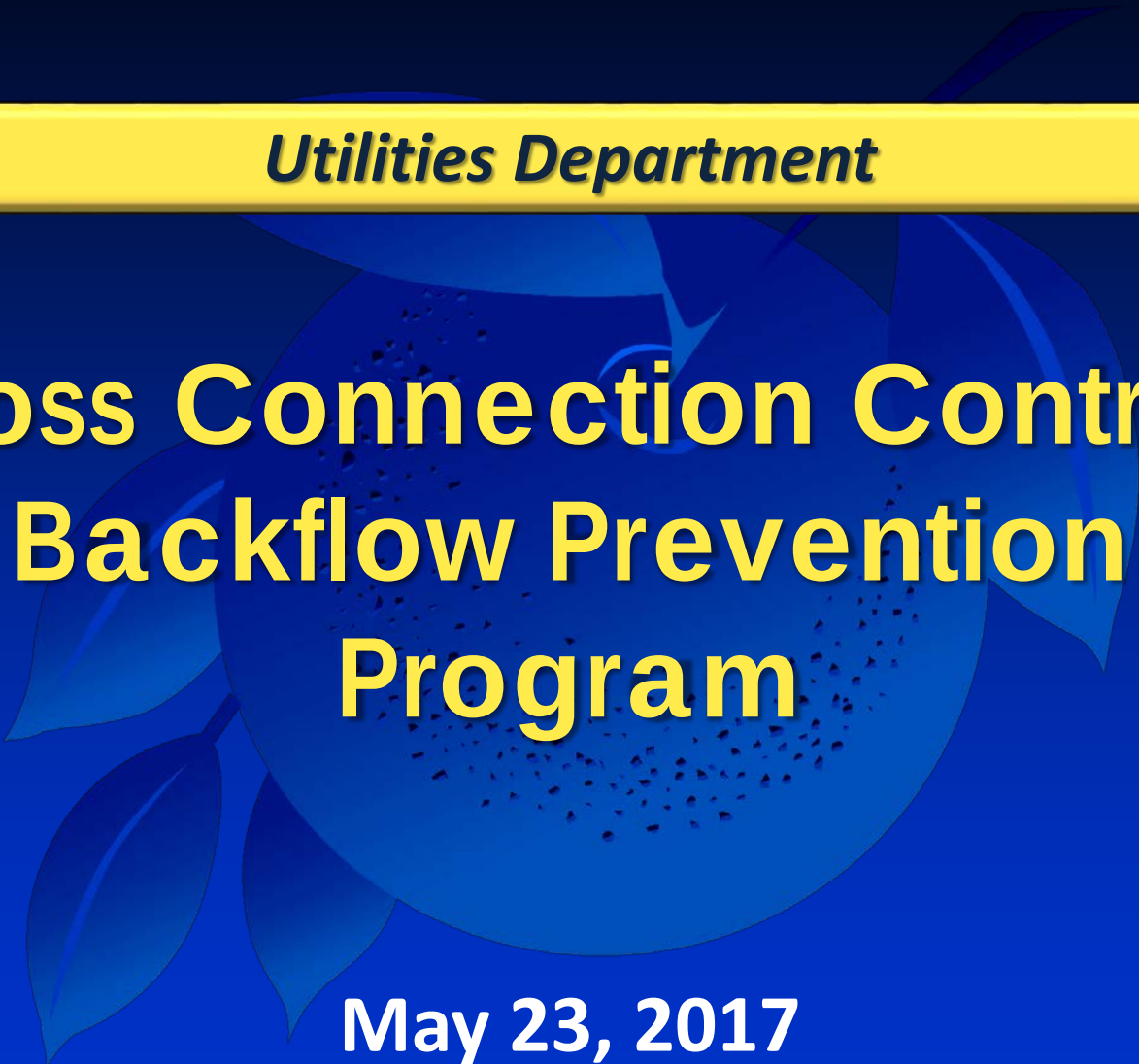




Utilities Department

Cross Connection Control/ Backflow Prevention Program

May 23, 2017



Presentation Overview

- Background
- Current Program Overview
- Comparison With Other Utilities
- Compliance Needs
- Proposed Program Revisions
- Next Steps



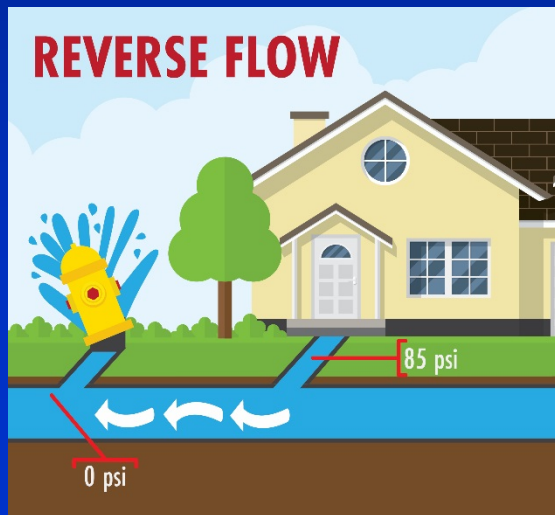
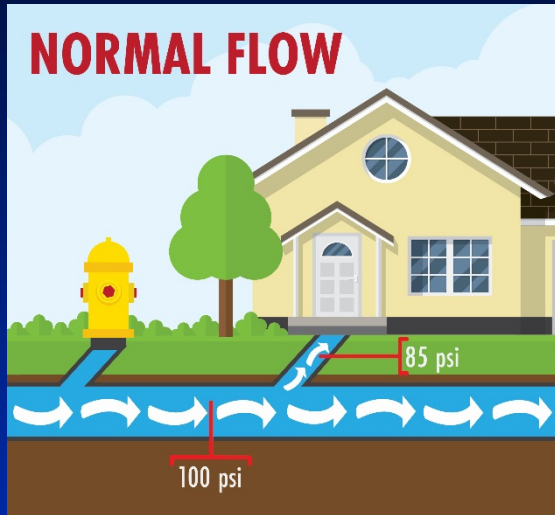


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Background



- **What is a Cross Connection?**
 - Any physical connection between a possible source of contamination and drinking water system piping
- **What is Backflow?**
 - Unwanted flow from any domestic, industrial or institutional piping system into the potable water distribution system



Background

- **Cross Connection Control Programs**
 - **Required by Regulations and Industry Standards**
 - Florida Administrative Code 62-555 and 62-610
 - Plumbing Codes
 - American Water Works Association M14 Manual
 - **Established to Protect Public Health**
 - **Provide a Systematic Way to Manage Risk to the County's Water System**

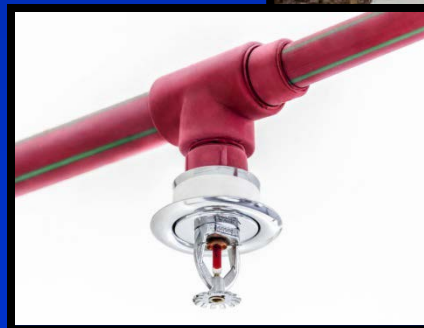
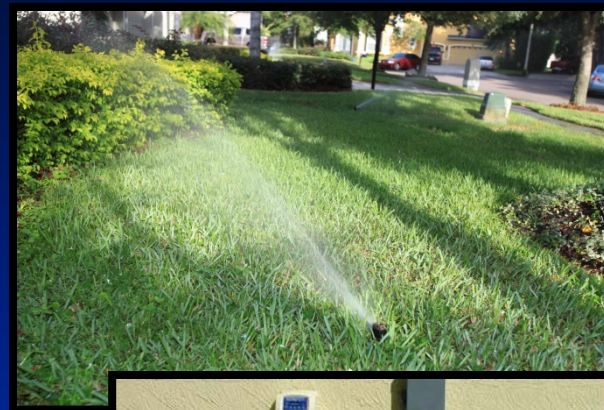


Background

- **Why is Cross Connection Control Important?**
 - June 2010 - 74 children in Flushing, NY became sick when propylene glycol from an air conditioning system cross connection contaminated the drinking water in their school
 - April 2011 - Minnesota DOH reported a metro area ethyl ether contamination affecting 390,000 people
 - June 2015 - *E Coli* and coliform contamination from a kitchen in Syracuse City, NY contaminated the public water system resulting in a boil water notice for the entire city

Background

- **Types of Cross Connections**
 - Irrigation systems
 - Private wells
 - Pool equipment
 - Fire systems
 - Industrial/commercial equipment
 - Can be planned or inadvertent





Background

- Preventing Impact From Cross Connections
 - Eliminate the cross connection
 - Install/maintain an approved backflow prevention device



Background





Background

■ FDEP Requirements

- Inventory of all backflow devices in your system
 - Inspections
 - Testing
 - Repairs/Replacement
- Enforcement provisions
- Annual/bi-annual inspection and testing
- Annual status report to FDEP



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Current Program Overview

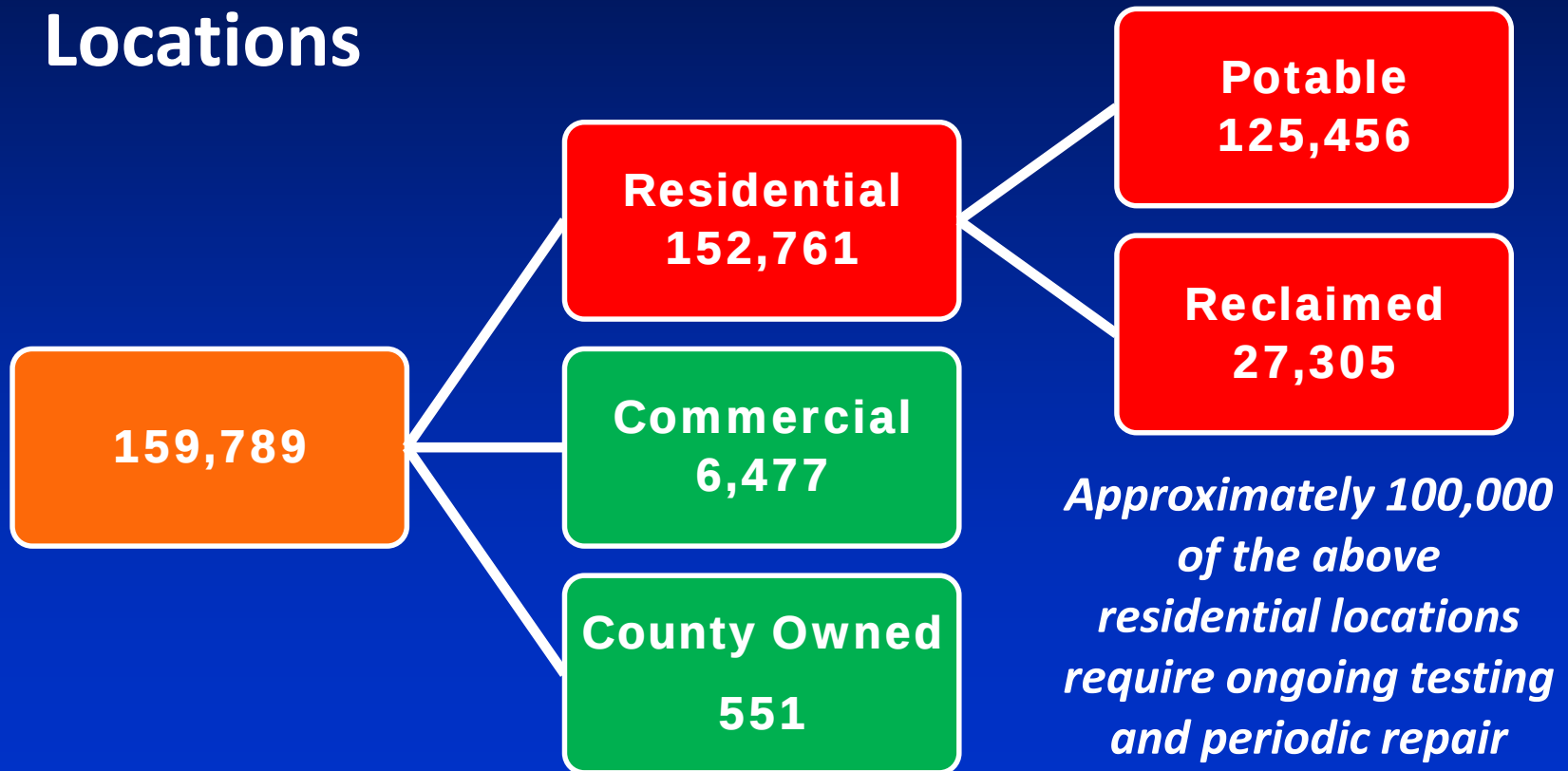
- Program developed in 2001; updated in 2002 and 2009
 - FDEP inspections identified need for program enhancement
 - Enforcement challenge
 - Only enforcement option is to discontinue service
 - Burdensome/costly to customers
 - Cross connections must be managed immediately upon discovery





Current Program Overview

Locations





Current Program Overview



Risk Assessment *County*

- All properties must be surveyed every 10 years
- Determine if a “hazard” or actual cross connection exists

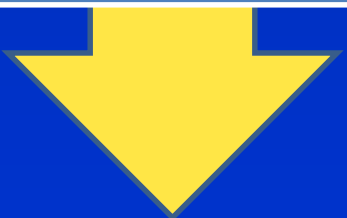
Install Device *Customer*

- An approved backflow prevention device is required at any property where a “hazard” exists

Test Device *Customer*

- Most devices require testing every one to two years
- Some devices can be replaced in lieu of testing

Repair or Replace the Device *Customer*



- Devices that do not pass testing must be either repaired or replaced by a certified technician

*Orange County, as a community water system,
is responsible for compliance of all phases*



Current Program Overview

Risk Assessment
County

Install Device
Customer

Test Device
Customer

Repair or Replace
the Device
Customer

■ Challenges

- Customers securing/coordinating services for testing, repairing, and replacing devices
- Cost of services when purchased individually
- Compliance and enforcement
- County reporting of customer activities



Presentation Overview

- Background
- Current Program Overview
- **Comparison With Other Utilities**
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Comparison With Other Utilities

*Funding approaches observed
are highly variable – rate
funded, dedicated fee, cost
reimbursement*

Utility
Repair / Replace

Utility Responsibility Quadrant

- OUC
- Hillsborough County
- Tampa
- Clearwater
- Deland
- Port Orange
- Collier County
- Apopka
- St. Cloud

Customer Testing

Utility Testing

Customer Responsibility Quadrant

- Volusia County
- Clermont
- Casselberry
- Toho Water

Customer
Repair / Replace

Mixed Responsibility Quadrant

- Altamonte
- Maitland



Presentation Overview

- Background
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- Comparison With Other Utilities
- **Compliance Needs**
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Compliance Needs

- **Commercial Customers**
 - Commercial program requires no substantial changes
- **Residential Customers**
 - Complete remaining residential site surveys
 - Ensure devices are installed where needed
 - Complete bi-annual (2-yr) residential testing or periodic (6 yr +/-) device replacement where allowed
 - Ensure devices repaired/replaced as required



Presentation Overview

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- **Proposed Program Revisions**
- Next Steps



Proposed Program Revisions



Risk Assessment *County*

- Remains as a County activity
- Currently funded, no changes needed

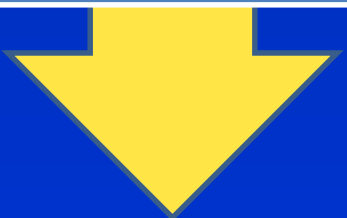
Install Device *Customer/County*

- Fund current device needs with a capital project
- New devices remain the responsibility of the customer (new homes, adding irrigation systems, etc.)

Test Device *County*

- County manages testing activity using private contractors
- Funding choice – water rates vs. cross connection fee

Repair or Replace the Device *County*



- County assumes repair and replacement obligations
- Cross connection control program fee necessary to cover costs, applies to customers who require a device



Proposed Program Revisions

- **Benefits of Program Revisions**
 - Customers are not required to arrange testing/repair
 - Improved compliance rate
 - Volume buying power and operational efficiencies lower total cost to the customer
 - Retain market engagement by using contractors
 - Avoid larger periodic repair costs for customers
- **Potential Challenges of Program Revision**
 - Adoption of a program fee
 - Ownership transfer of existing devices



Proposed Program Revisions

■ Cost Summary

- Risk Assessments – addressed in existing rate/budget
- Device Installation to close current compliance gap
 - 27K installs @ \$250 each (\$6.7 million capital project)
- Testing (\$700K/yr) – address through water rate/budget
- Ongoing Repair and Replacement (\$3.6M/yr)
 - \$3/month fee for customers with devices



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- **Next Steps**



Next Steps

- Complete the Risk Assessments (2017)
- Implement CIP program to install devices at known risk areas (2017 - 2020)
- Revise Chapter 37 to reflect program revisions
- Institute fee structure and initiate OCU program implementation
- Public engagement and communications





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