

Town of Markham

Backflow Prevention Program

**Presented by:
Waterworks Department
November, 2008**



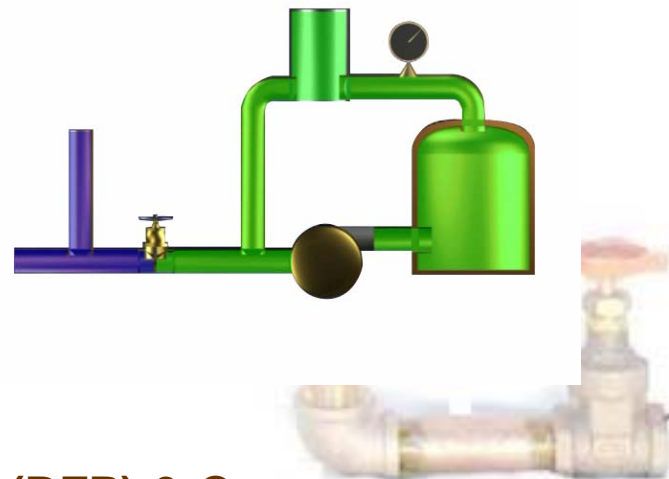
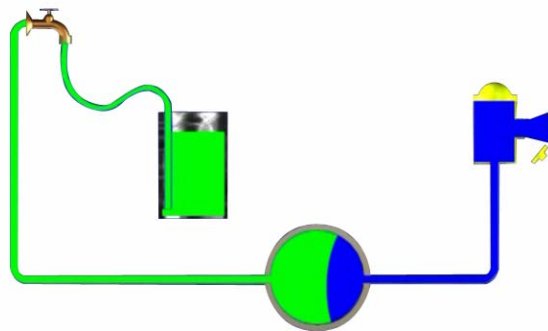
Summary

- What is Backflow & Cross-Connection?
- Background
- By-law Applications & Requirements
- Backflow Prevention Program
- Questions



What is Backflow & Cross-Connection?

Backflow is the unwanted flow of non-potable water from any source back into the consumer's plumbing system and/or the Town's drinking water system. This flow reversal can happen during everyday activities. There are two types of backflow; **back siphonage** and **back pressure**.



Note: AWWA Backflow Prevention (BFP) & Cross-Connection Control (CCC) video (optional)

What is Backflow & Cross-Connection? (Cont.)

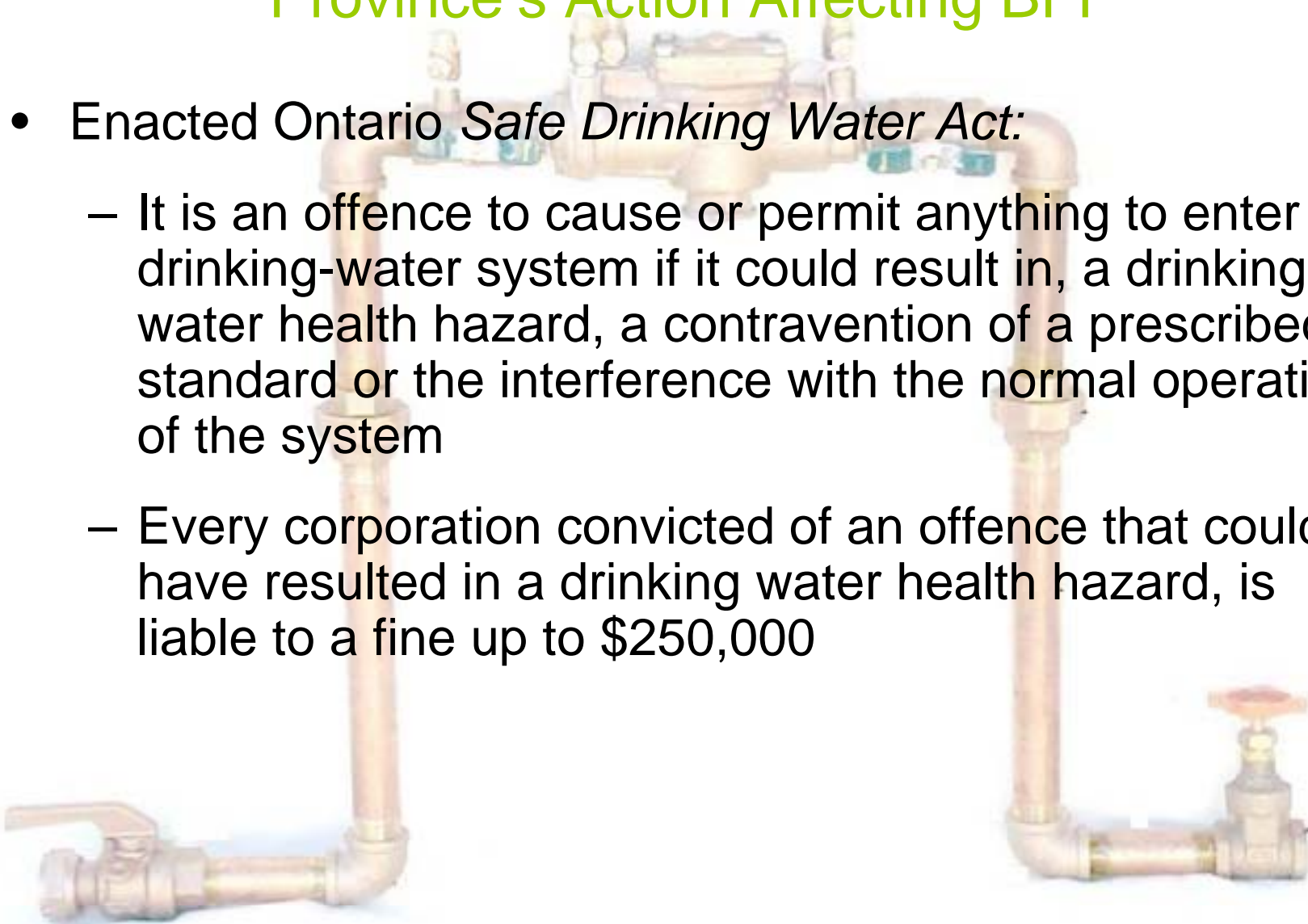
- “**Cross-Connection**” means any actual or potential connection between a *potable water* system and any source of pollution or contamination and includes any bypass, jumper connection, removable section of pipe, swivel or changeover device and any other temporary or permanent connecting arrangement through which *backflow* may occur



Background

Province's Action Affecting BFP

- Enacted Ontario *Safe Drinking Water Act*:
 - It is an offence to cause or permit anything to enter a drinking-water system if it could result in, a drinking-water health hazard, a contravention of a prescribed standard or the interference with the normal operation of the system
 - Every corporation convicted of an offence that could have resulted in a drinking water health hazard, is liable to a fine up to \$250,000



Background (Cont.)

Province's Action Affecting The Town

Ministry of Environment (MOE) Inspectors 2004, 2005 & 2006 Annual Reports recommended:

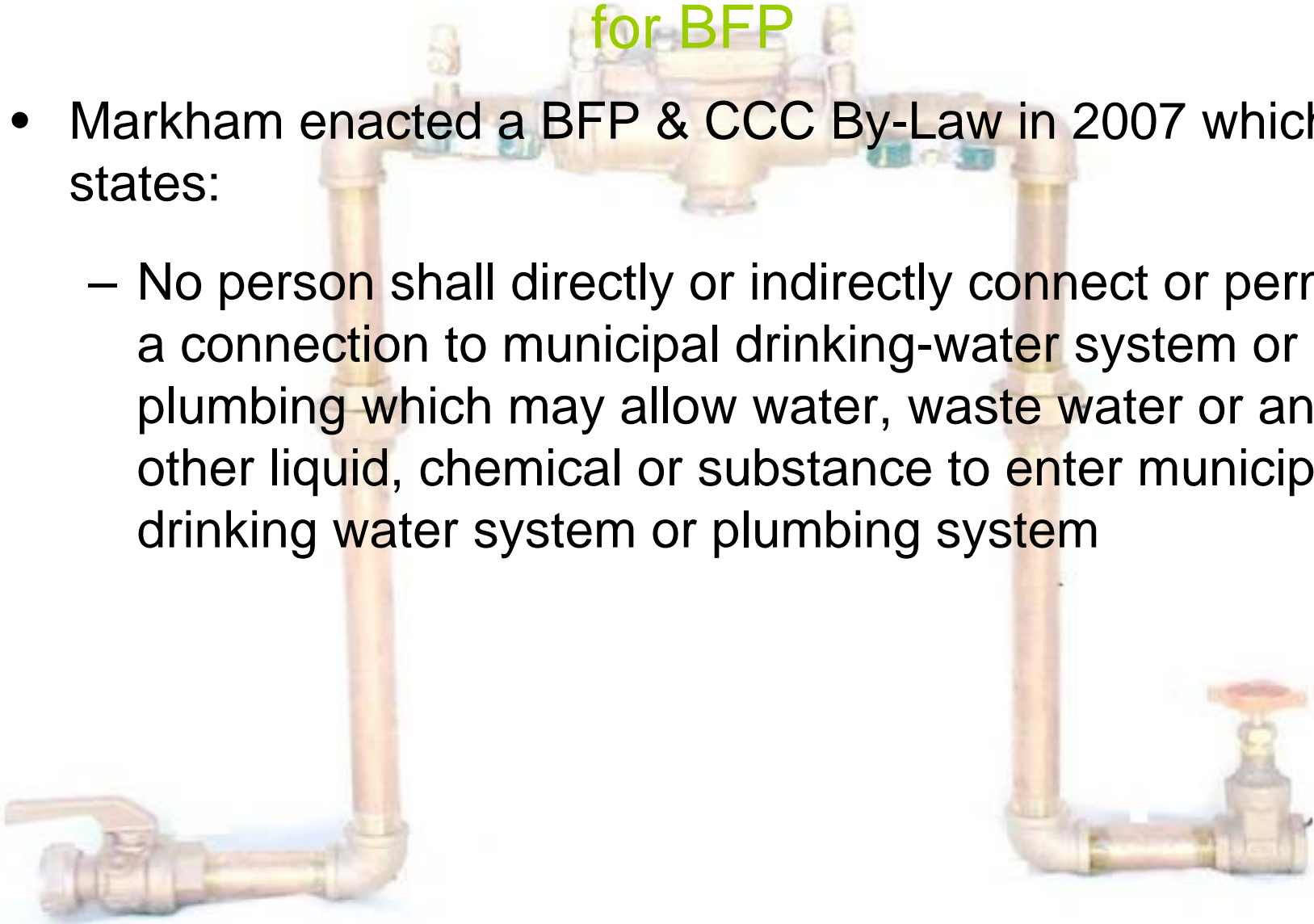
- Development and implementation of BFP program.
- Enacting & implementing BFP/CCC By-Law.



Background (Cont.)

Markham's Response to MOE Recommendation for BFP

- Markham enacted a BFP & CCC By-Law in 2007 which states:
 - No person shall directly or indirectly connect or permit a connection to municipal drinking-water system or plumbing which may allow water, waste water or any other liquid, chemical or substance to enter municipal drinking water system or plumbing system



By-law Application & Requirements

Who is Impacted?

The By-Law Applies to:

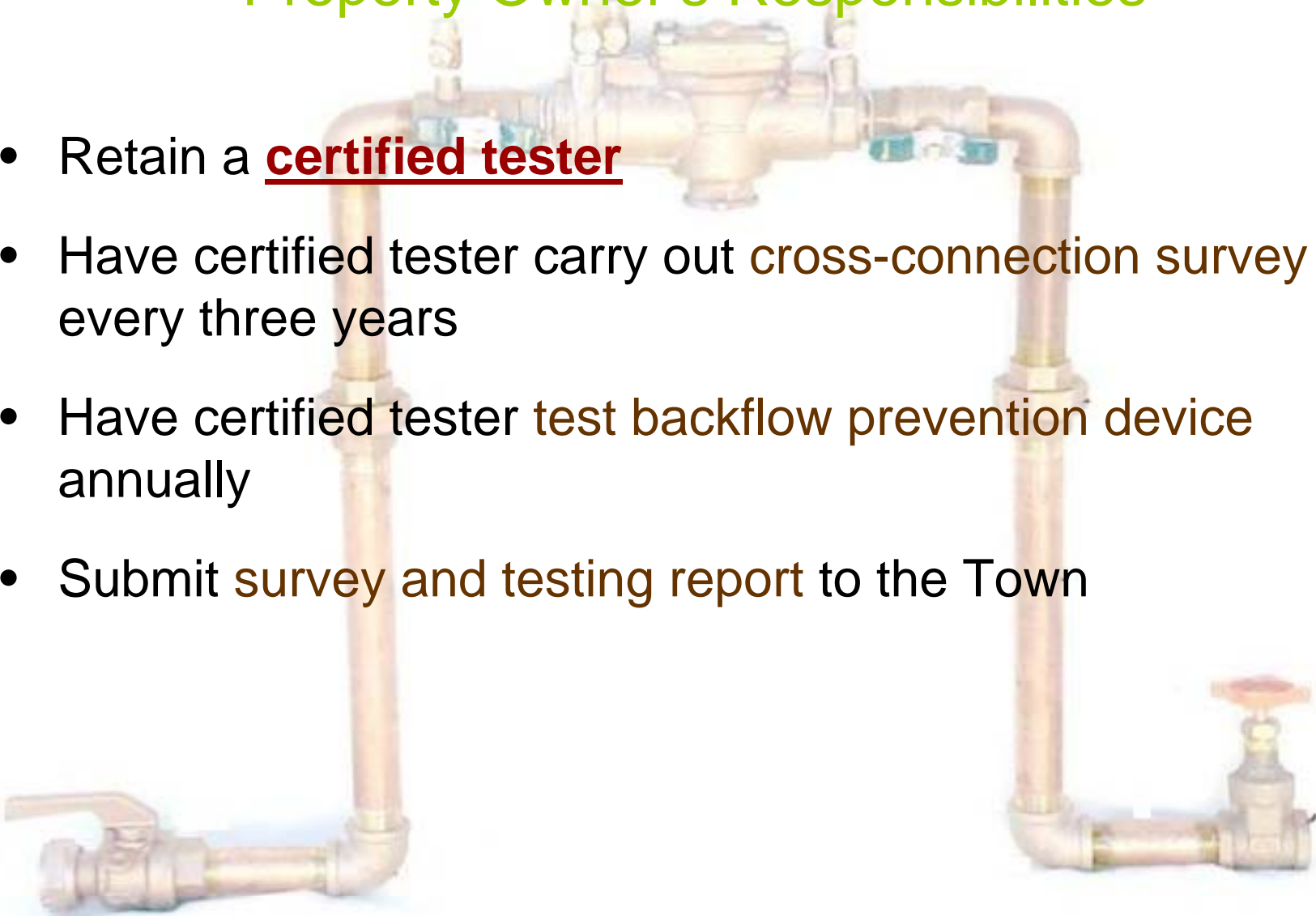
- All industrial, commercial and institutional properties in Markham.
- Residential buildings and structures which are individually serviced through 50mm or greater connection
- Residential properties with connections to fire protection or lawn sprinkler or any other supply.



By-law Application & Requirement (Cont.)

Property Owner's Responsibilities

- Retain a **certified tester**
- Have certified tester carry out cross-connection survey every three years
- Have certified tester test backflow prevention device annually
- Submit survey and testing report to the Town

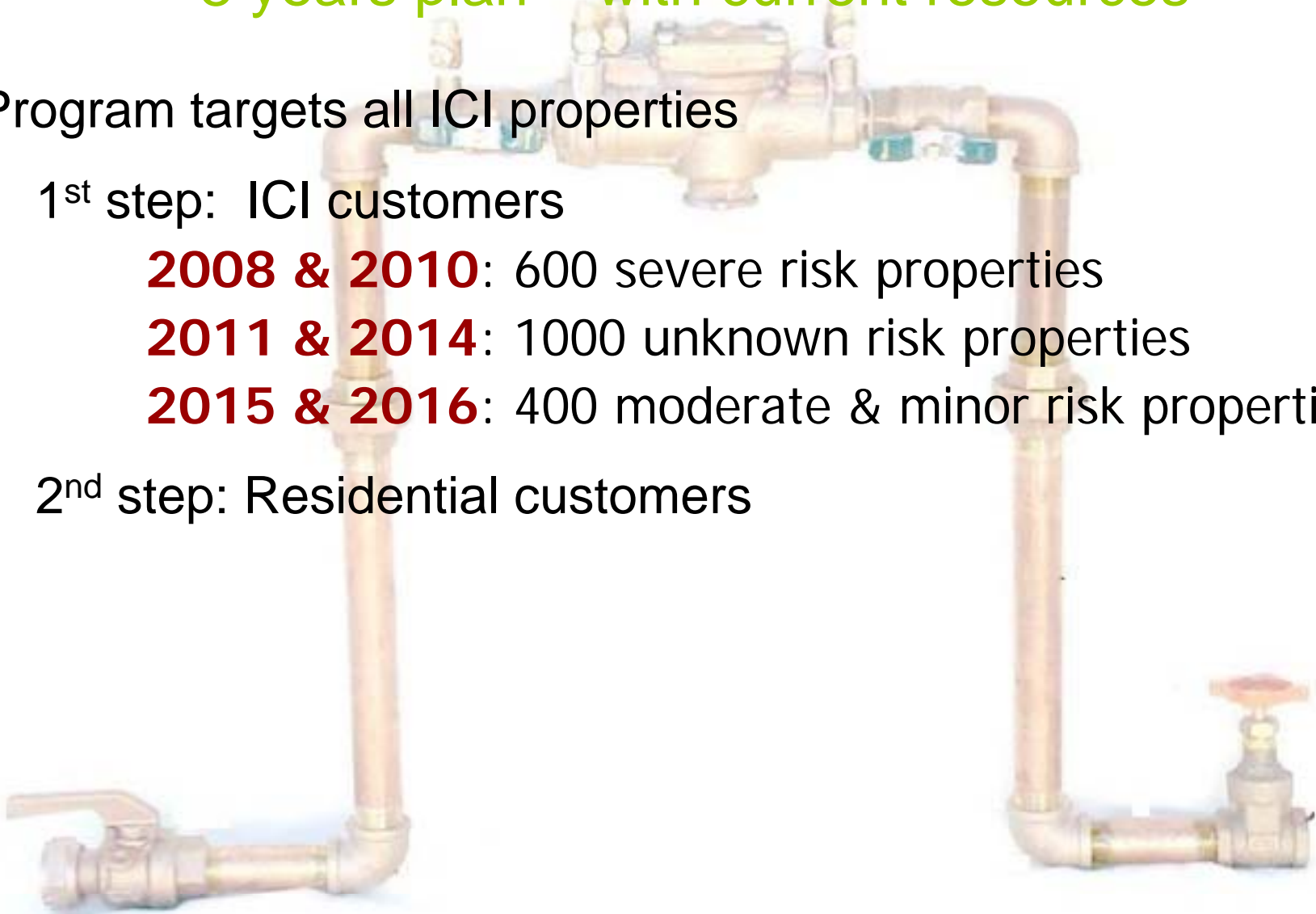


Backflow Prevention Program

8 years plan – with current resources

Program targets all ICI properties

- 1st step: ICI customers
 - 2008 & 2010:** 600 severe risk properties
 - 2011 & 2014:** 1000 unknown risk properties
 - 2015 & 2016:** 400 moderate & minor risk properties
- 2nd step: Residential customers



Backflow Prevention Program (Cont.)

Public Communication / Education

- Holding **workshops / information sessions** for property owner
- Developing BFP Program **webpage** for property owner and testers. www.markham.ca
- **Direct mailing** of education materials and By-law compliance request
- **Newspaper notices** in the community newspapers
- The Town maintains **a list of certified testers** who can meet the By-law requirements for property owner's convenience, not required to use.

Backflow Prevention Program (Cont.)

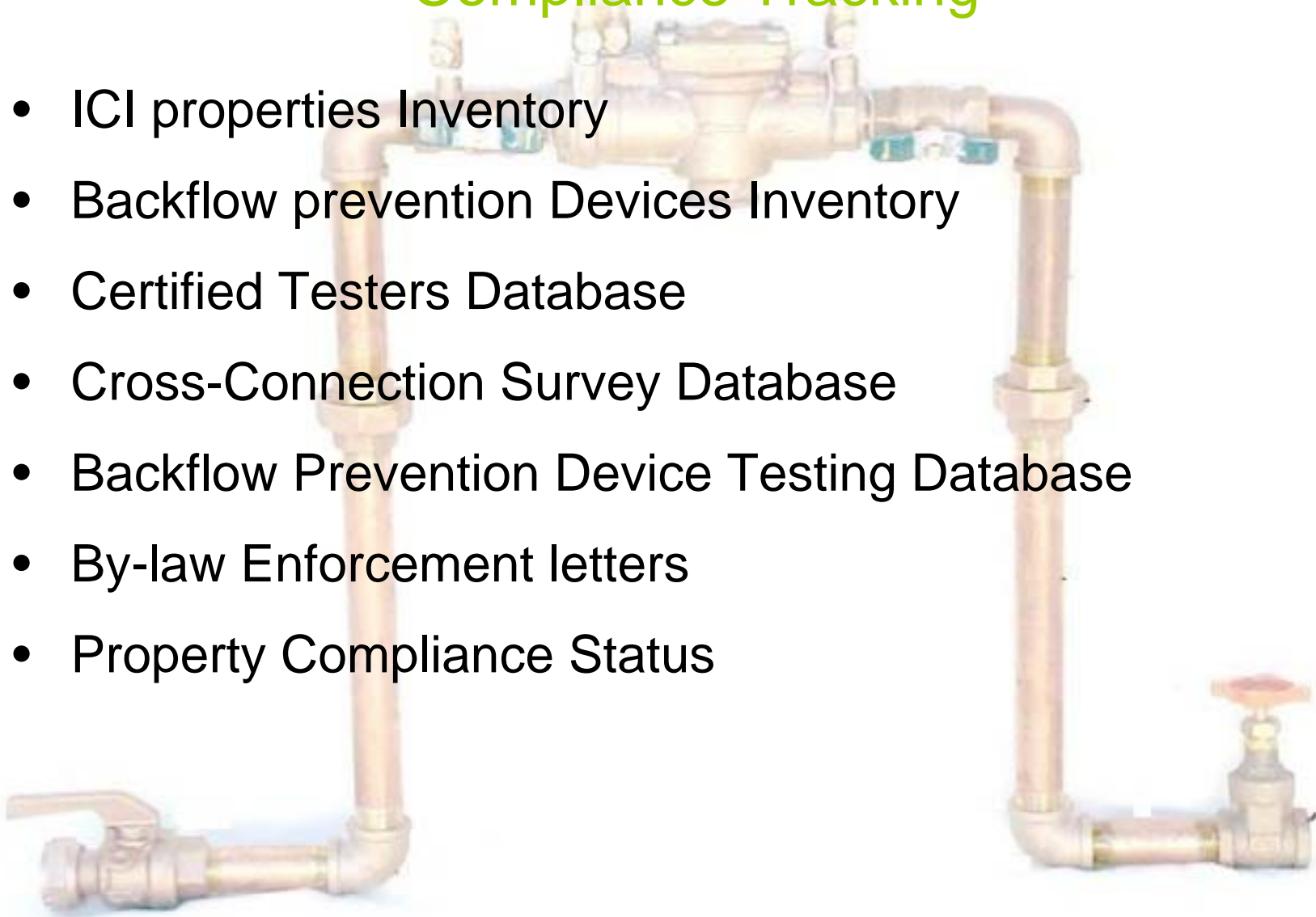
Progressive Compliance Encouragement Steps

- **Waterworks Department** will send out:
 - 1st registered letter to property owner – outlining their responsibilities under our By-Law (600 letters was sent out on Oct 17, 2008)
 - 2nd registered letter to property owner – after 4 months from 1st letter – will include penalty information
 - 3rd registered letter to property owner – after 3 months from 2nd letter – include penalties, notify them regarding potential water shut off
 - Waterworks personnel to visit non-compliant property owners to seek compliance
- **By-Law Department** will enforce the By-law by issuing orders to comply or will lay charges

Backflow Prevention Program (Cont.)

Compliance Tracking

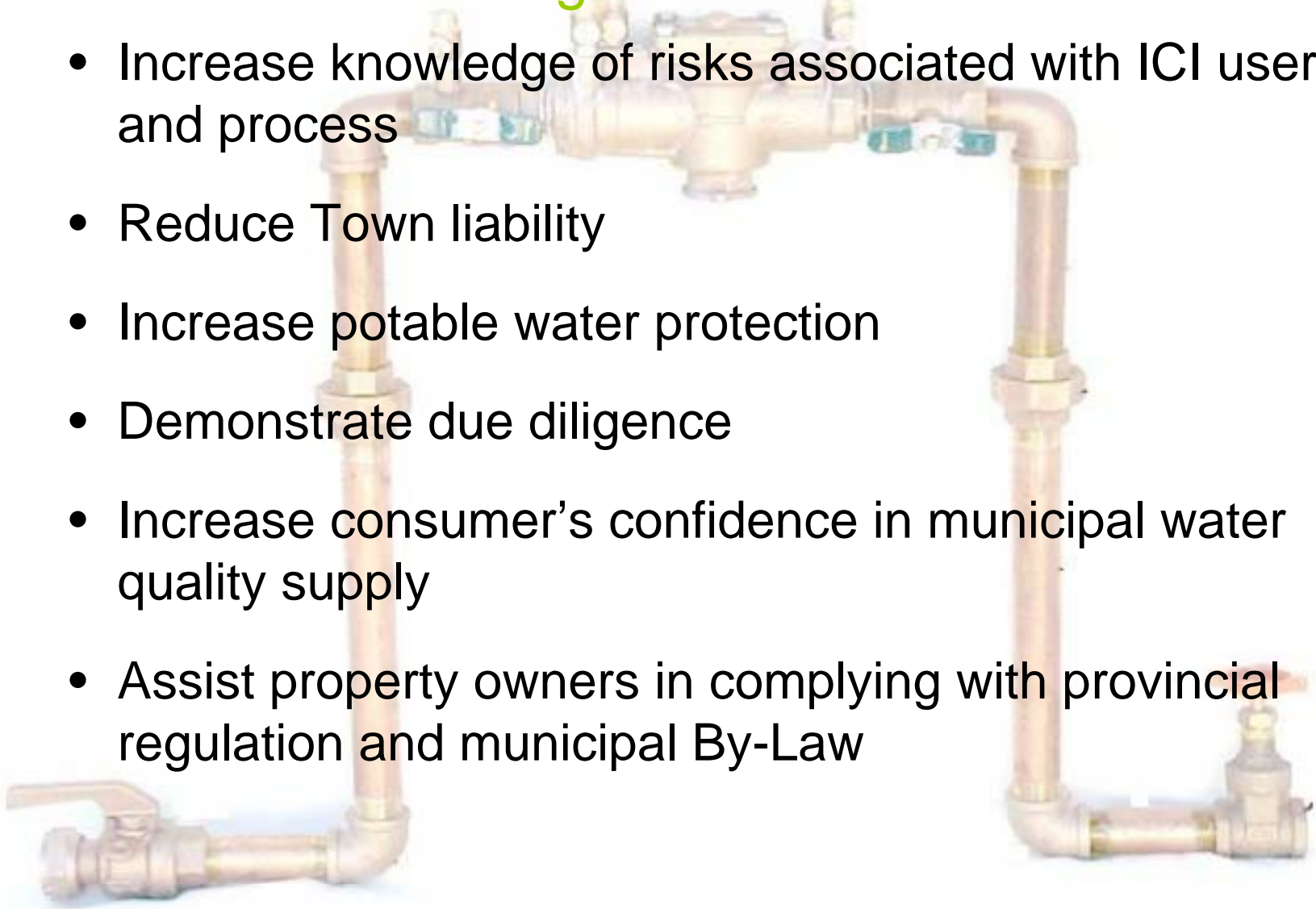
- ICI properties Inventory
- Backflow prevention Devices Inventory
- Certified Testers Database
- Cross-Connection Survey Database
- Backflow Prevention Device Testing Database
- By-law Enforcement letters
- Property Compliance Status



Backflow Prevention Program (Cont.)

Program Benefits

- Increase knowledge of risks associated with ICI users and process
- Reduce Town liability
- Increase potable water protection
- Demonstrate due diligence
- Increase consumer's confidence in municipal water quality supply
- Assist property owners in complying with provincial regulation and municipal By-Law





The image shows a brass differential pressure sensor assembly. It consists of a central brass body with two vertical tubes extending downwards. Each tube has a 90-degree elbow at the bottom, leading to a valve. The left valve has a horizontal handle, and the right valve has a red-handled wheel. The central body has several small ports at the top. The entire assembly is made of polished brass and is set against a plain white background.

Questions?