

An Update on Louisville MSDs Basement Backflow Prevention Program 15 Years and 9,000 Installations Later

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The Problem

Customer basement flooding due to surcharged sewers from wet weather events in the combined sewer area

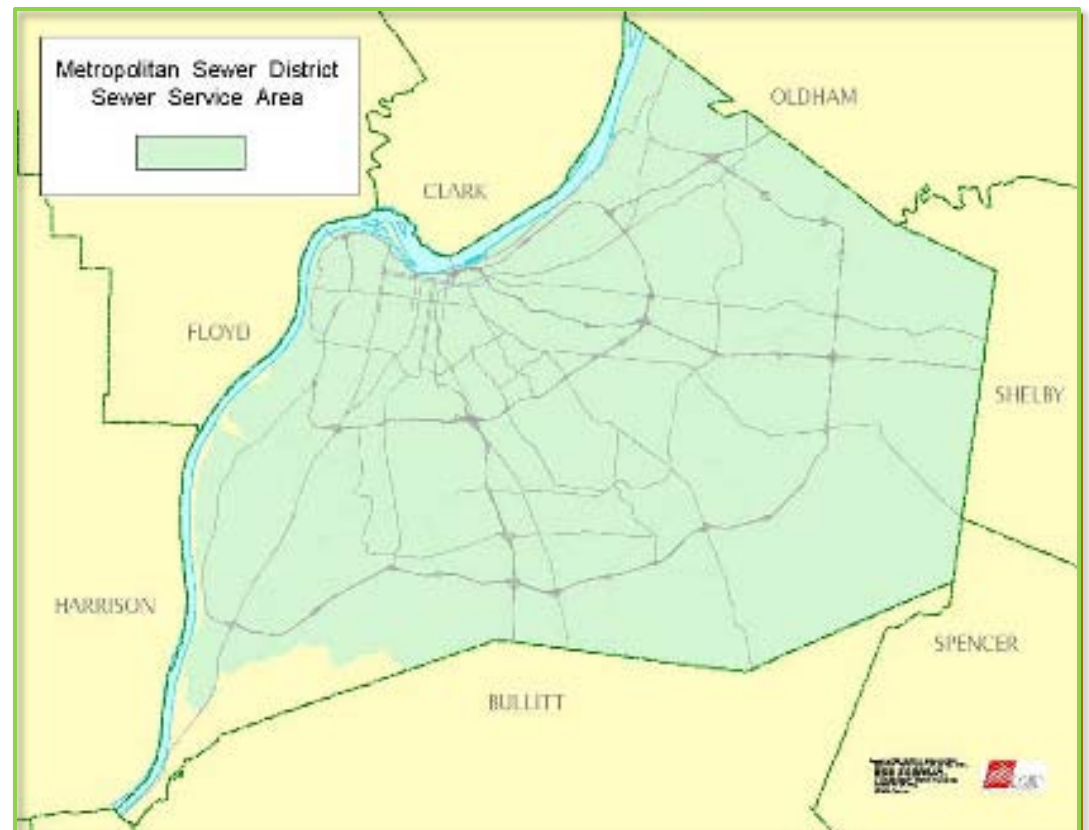
The Solution

The Plumbing Modification Program:

- Began in 1993
- Pays for installation of modifications protecting against basement flooding
- 9,000 installations completed
- \$15 million construction cost

Louisville KY Metropolitan Sewer District (MSD)

- Created as a Special District in 1946, by KRS 076
- Responsible for storm water and wastewater service in Louisville, KY metropolitan area

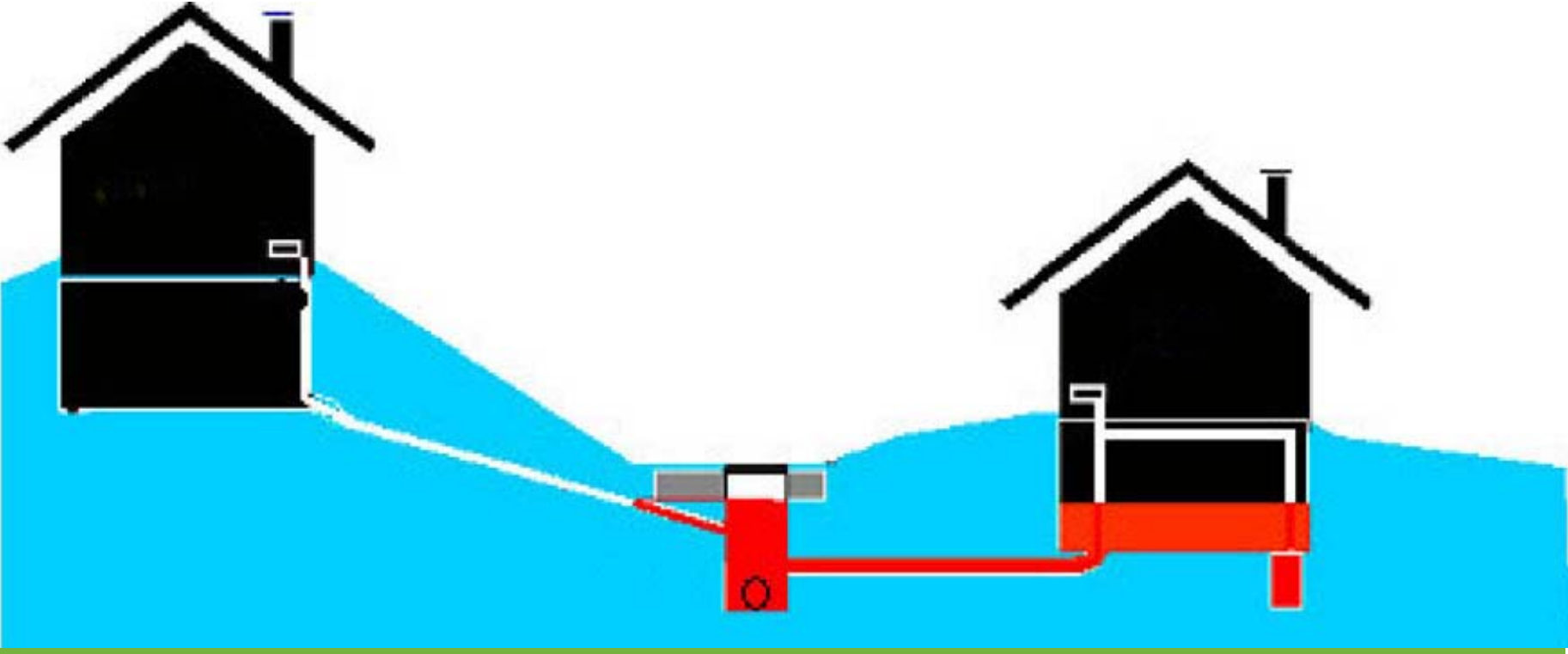


Basement Backflow Prevention Program

- Flooded Basements



Surcharged Sewer Causing Basement Flooding



Options

- Larger pipes & larger WWTP => \$\$\$ and time
- Storage basins => \$\$\$ and time
- Individual back-up elimination installation => Risk

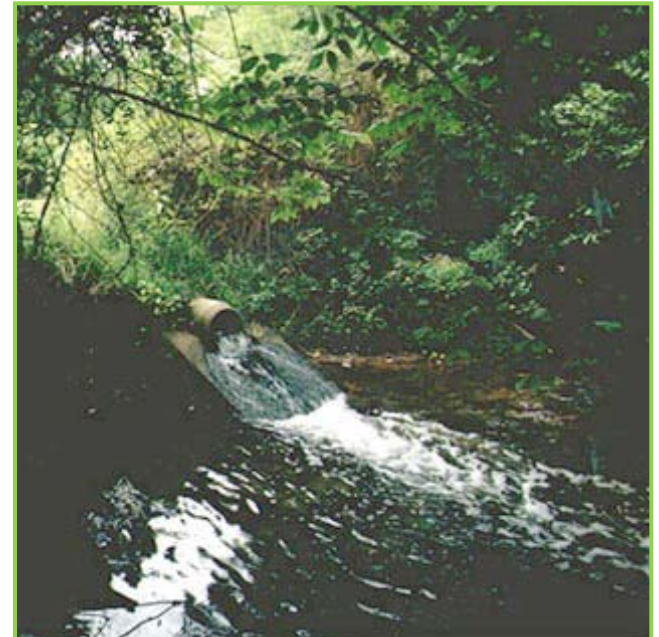


Potential Program Risks

- Identified initial Plumbing Modification Program risks
 - ▶ Construction liability
 - ▶ Budget impacts: total dollars; pace of spending
 - ▶ Public dollar spending concerns
 - ▶ Customer education
 - › proper operation and maintenance
 - ▶ Confined space entry avoidance - no external installations
 - ▶ On-going maintenance
 - › customers not taking ownership

Implementing the Program

- The Plumbing Modification Program began in 1993
 - ▶ Tests conducted to choose the best option
- Concern over the program's acceptance and success
- Selection of designated areas for implementation
 - ▶ Chronic problem site selection
 - ▶ Customer notification and education
 - ▶ Extensive communication effort
 - ▶ Geographic distribution



Public Education and Plumber Training

- Customer education
 - ▶ Letters mailed
 - ▶ Door hangers
 - ▶ Political involvement
- Plumber education
 - ▶ Details reviewed to assure competitive bidding



Steps of the Initial Program

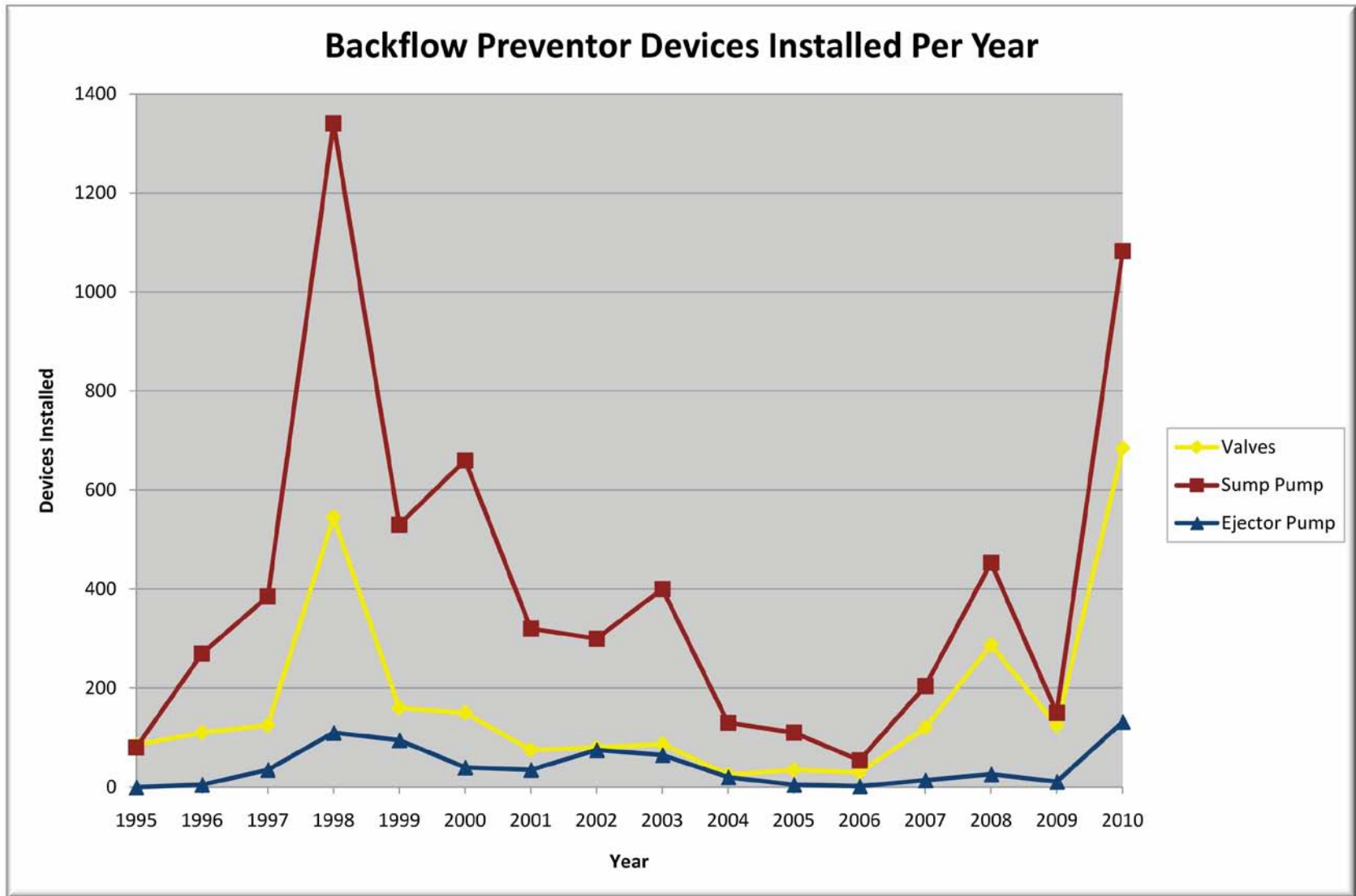
- MSD designated specific areas
- MSD mailed letters
- MSD database containing customer information
- Packets of information mailed
- Customer solicit 3 bids from licensed plumbers
- MSD review bids
- Approval letters sent
- Homeowner contact plumber
- Plumber obtain permits
- Plumber contact inspector and MSD for inspection
- Check sent to plumber

Flood of 1997 - “The Program Expands”

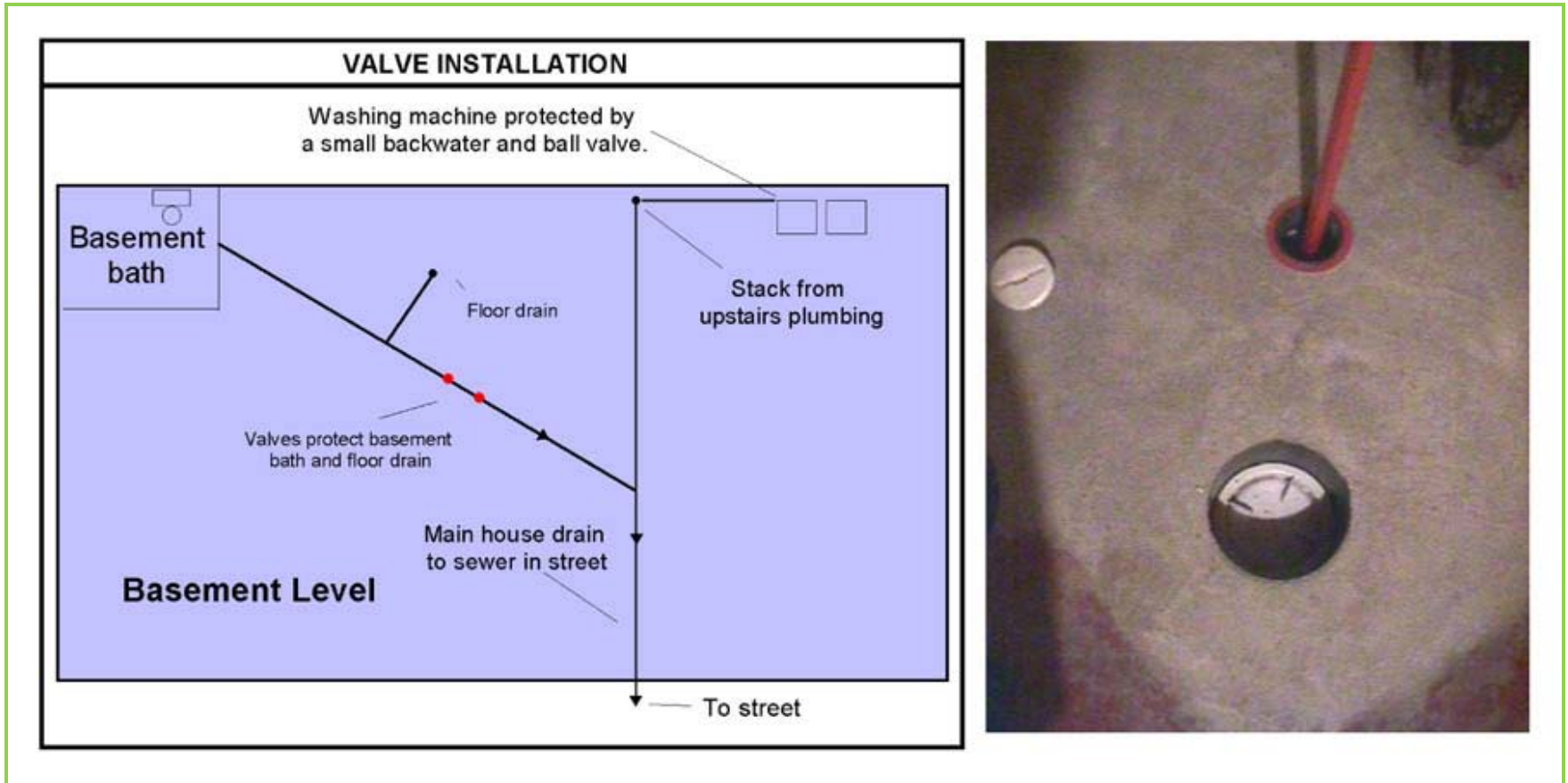
- Over 12 inches of rain fell from February 28 until March 2
- Sixth worst Ohio River flood on record
- \$85 million in property loss
- Result: Plumbing Modification Program opened to MSD customers throughout Jefferson County



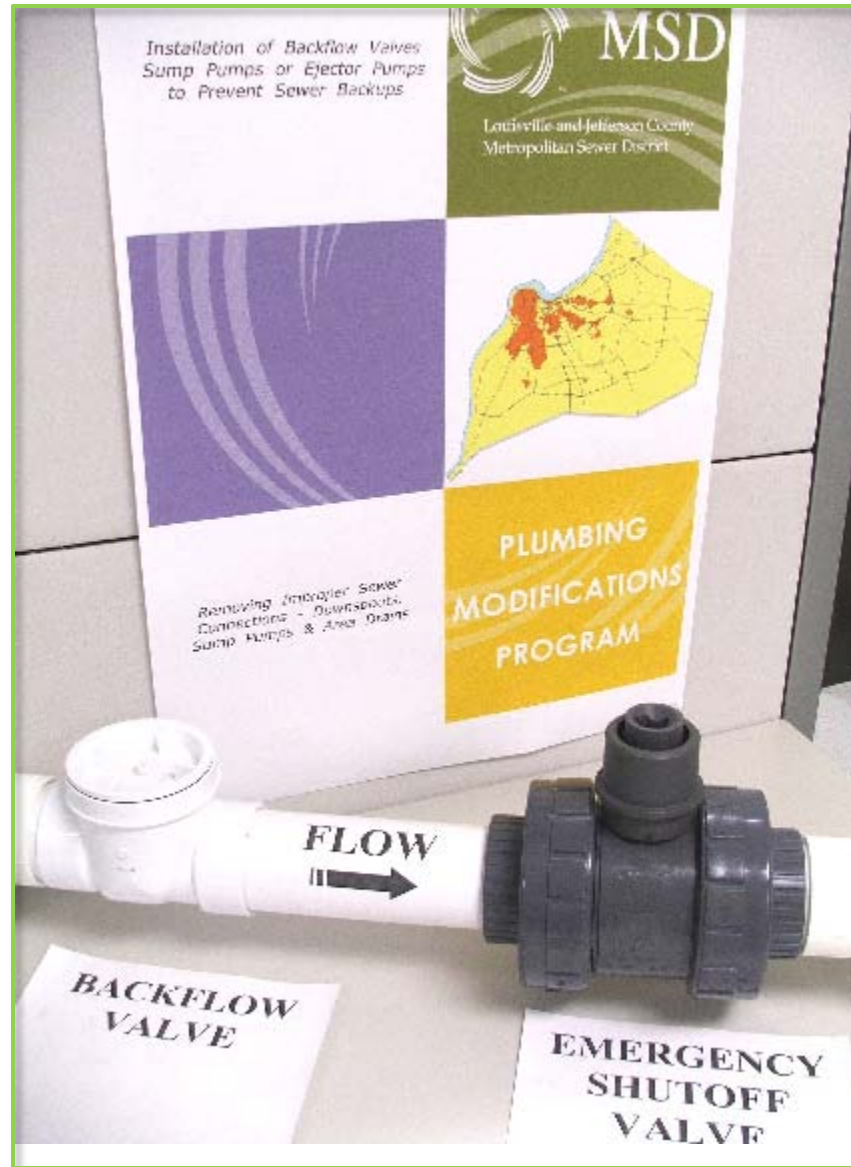
Summary of Types of Installations Each Year



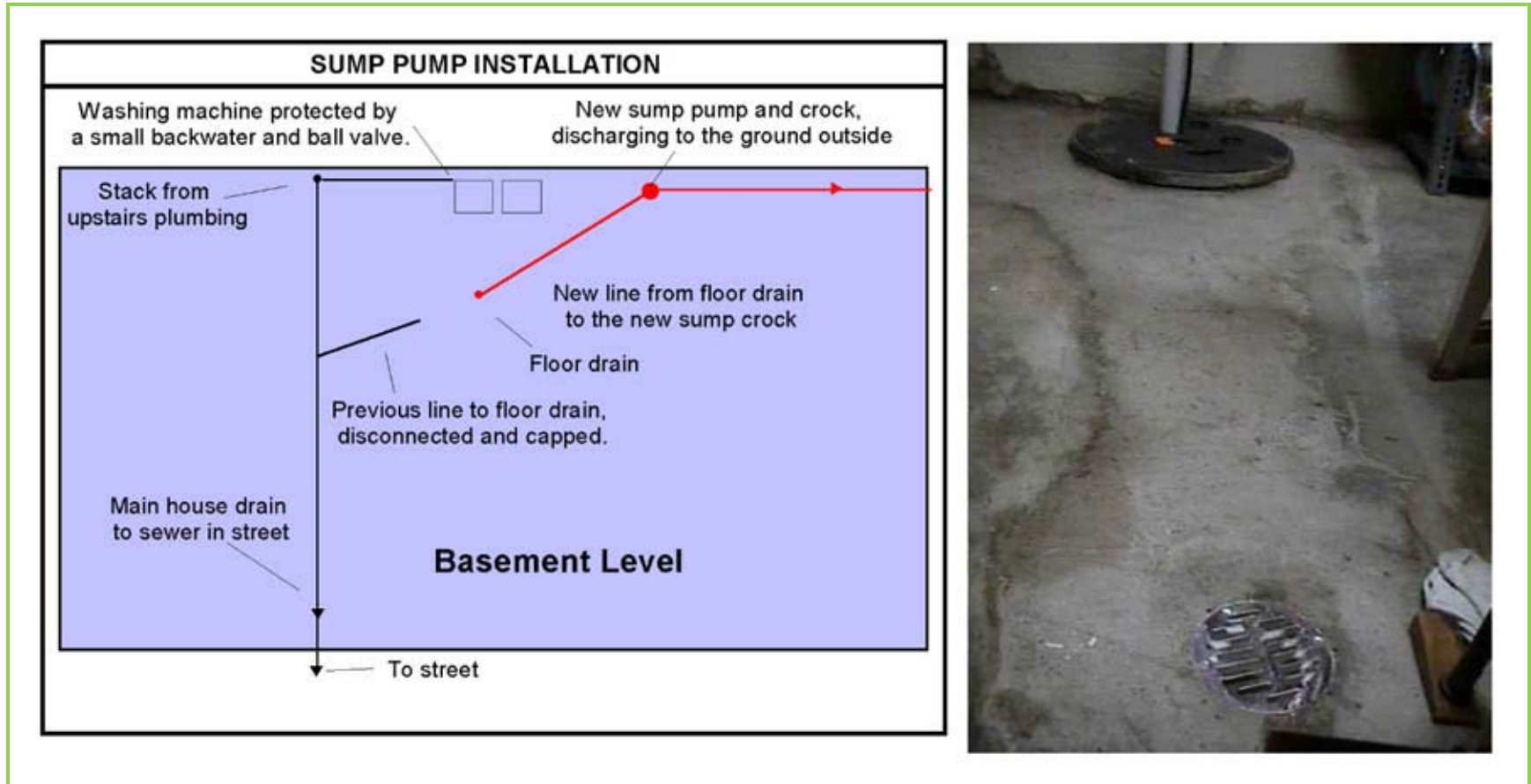
Valve Installation



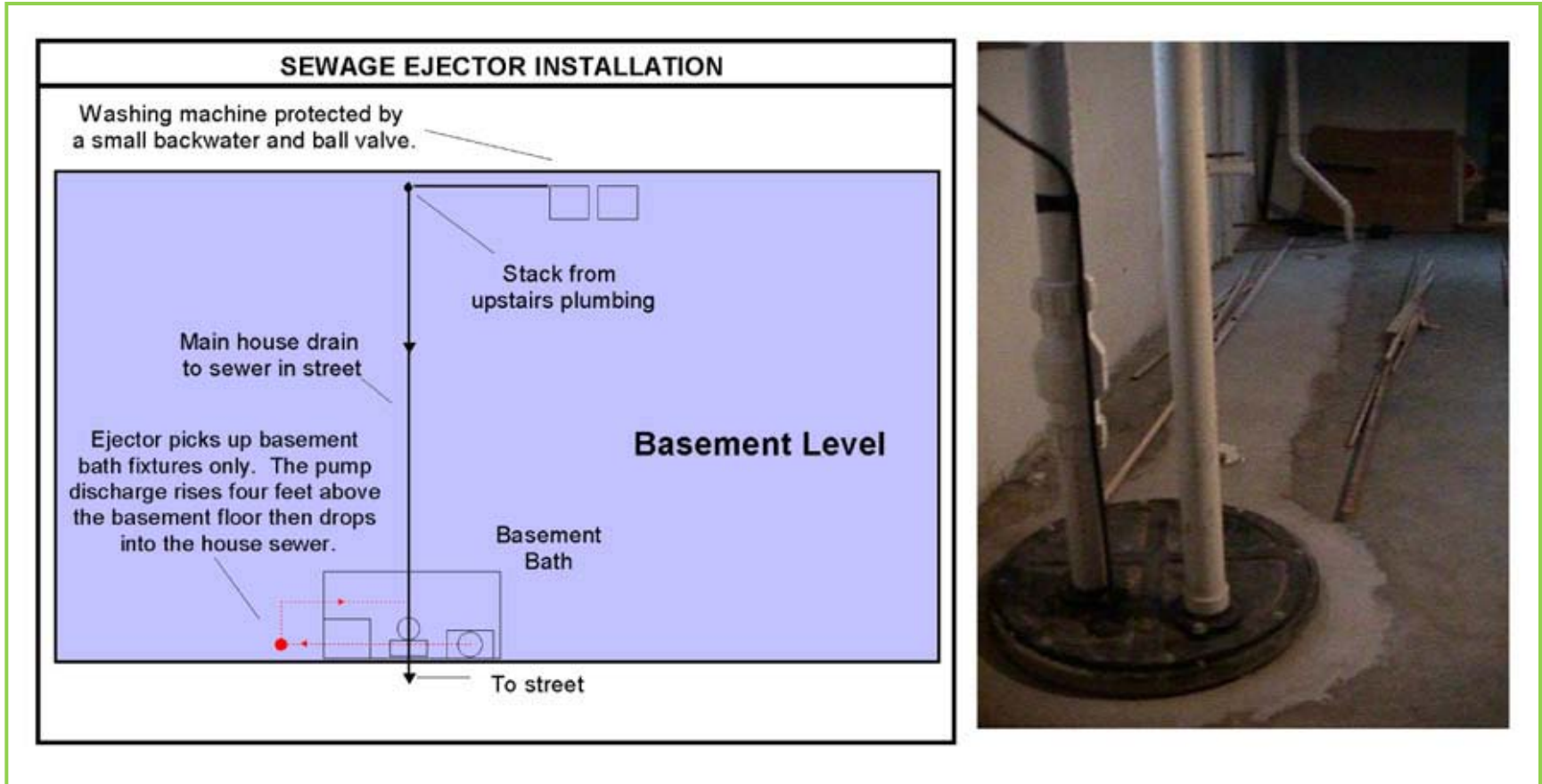
Valve Installation



Sump Pump Installation



Ejector Pump Installation



Cost of Installation

Initial program cost

\$5000

Today's average costs

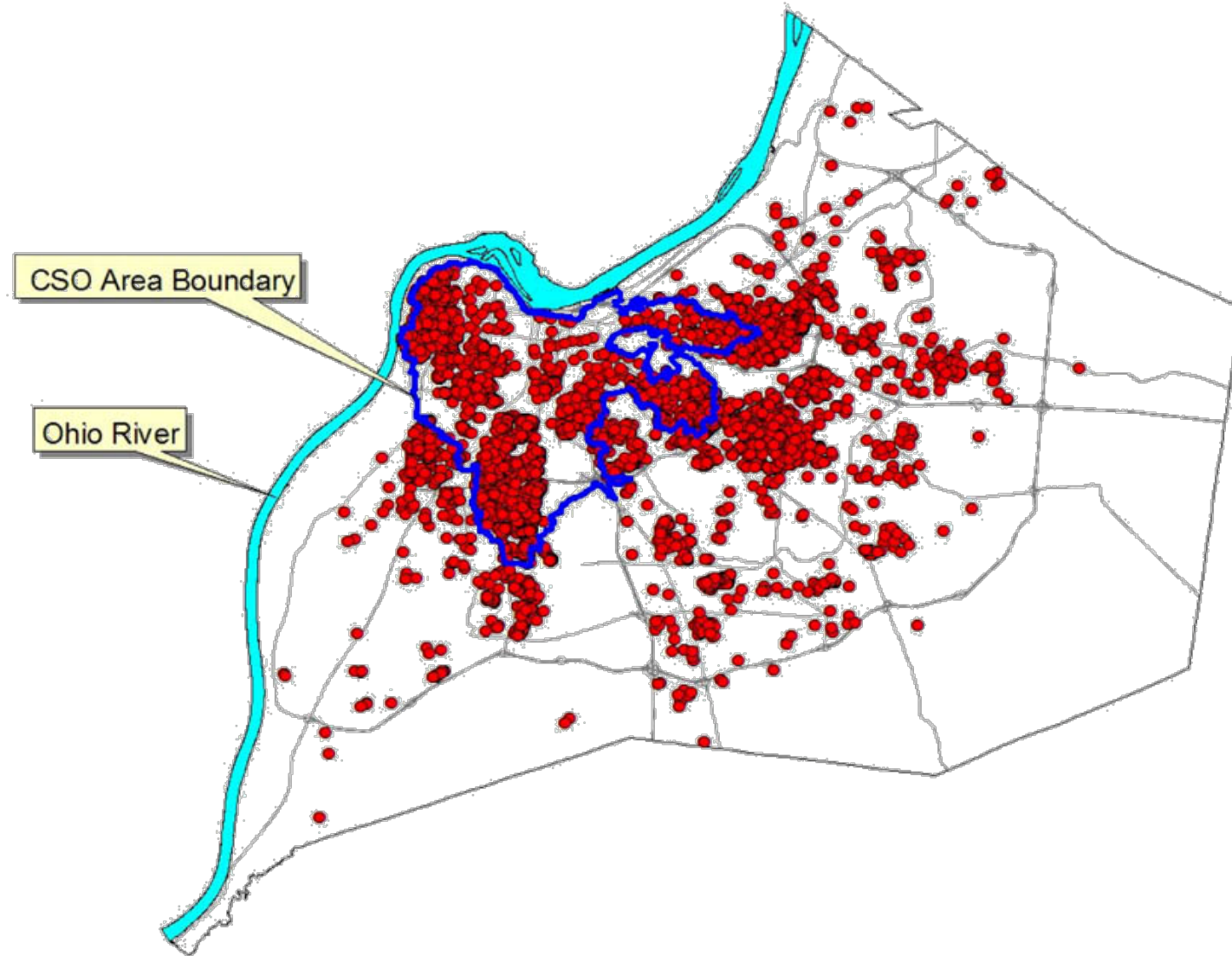
\$2,800 ejectors

\$2,100 valve

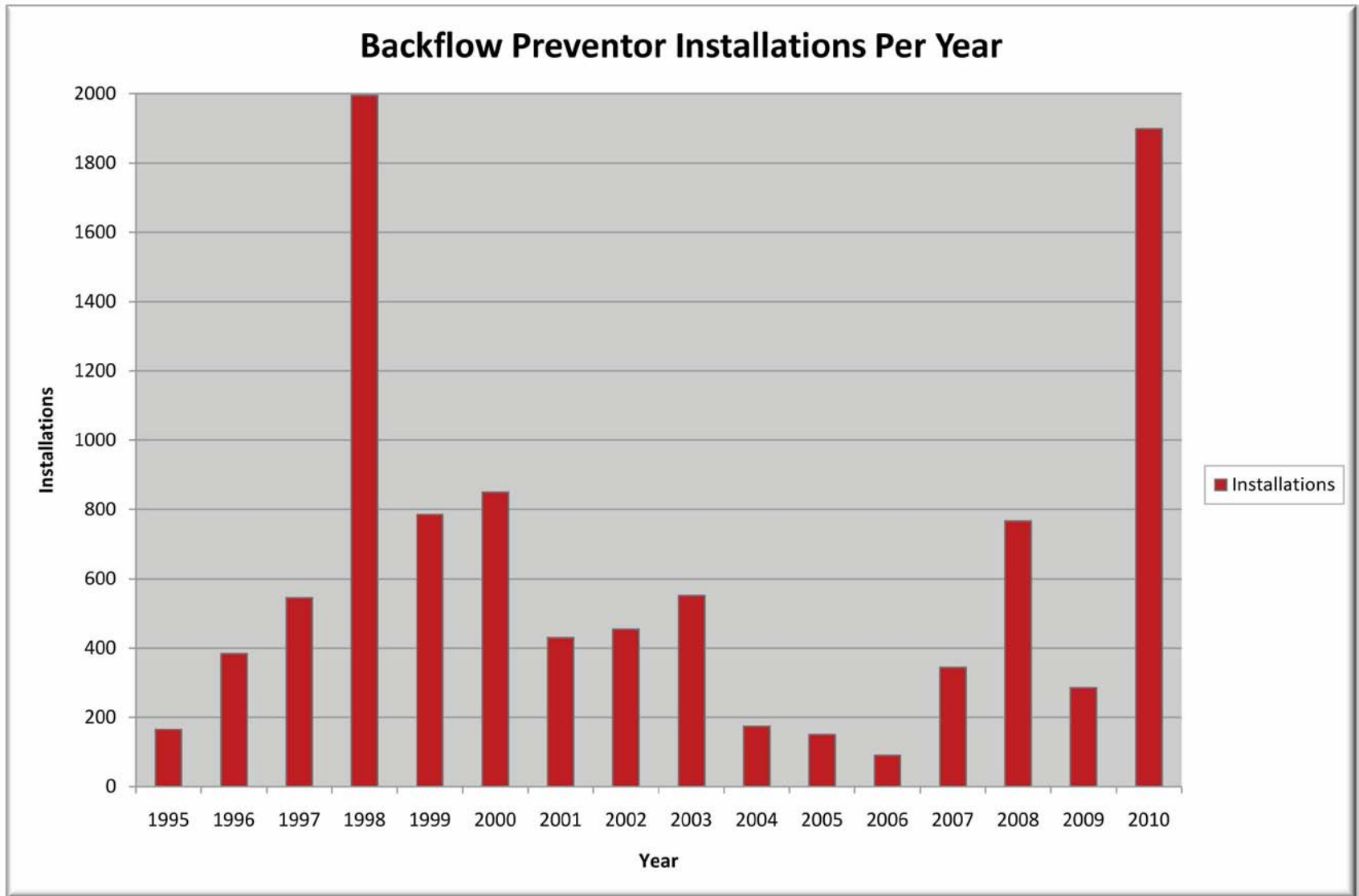
\$1,600 sump pumps

\$200 administration

Location and Distribution of Installation



Installations per Year





How We Adapted

- Don't Over Plan!
- Most Expensive device is not best
- Release form
- Wet areas
- Water in vaults
- Wow, it is FREE!!
- If you can image it, it exists!
- Payment direct to plumber
- Dedicated electrical service for pumps
- Transferred all oversight in house July 2003
- Downsized information packet

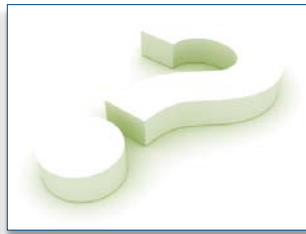
Summary and Conclusions

- Extremely successful initiative for MSD
- 9,000 installations completed
- Reduced the potential for human contact with diluted sewage
- Reduced property damage
- Basement flooding now very manageable. Elimination of “4A” - surcharged sewer/basement backup code
- Solution using non traditional means

“KEEP IT SIMPLE”

QUESTIONS?

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THANK YOU

