

The Clean Water Project Program Update

Newington, CT

Program Management Unit

July 7, 2008

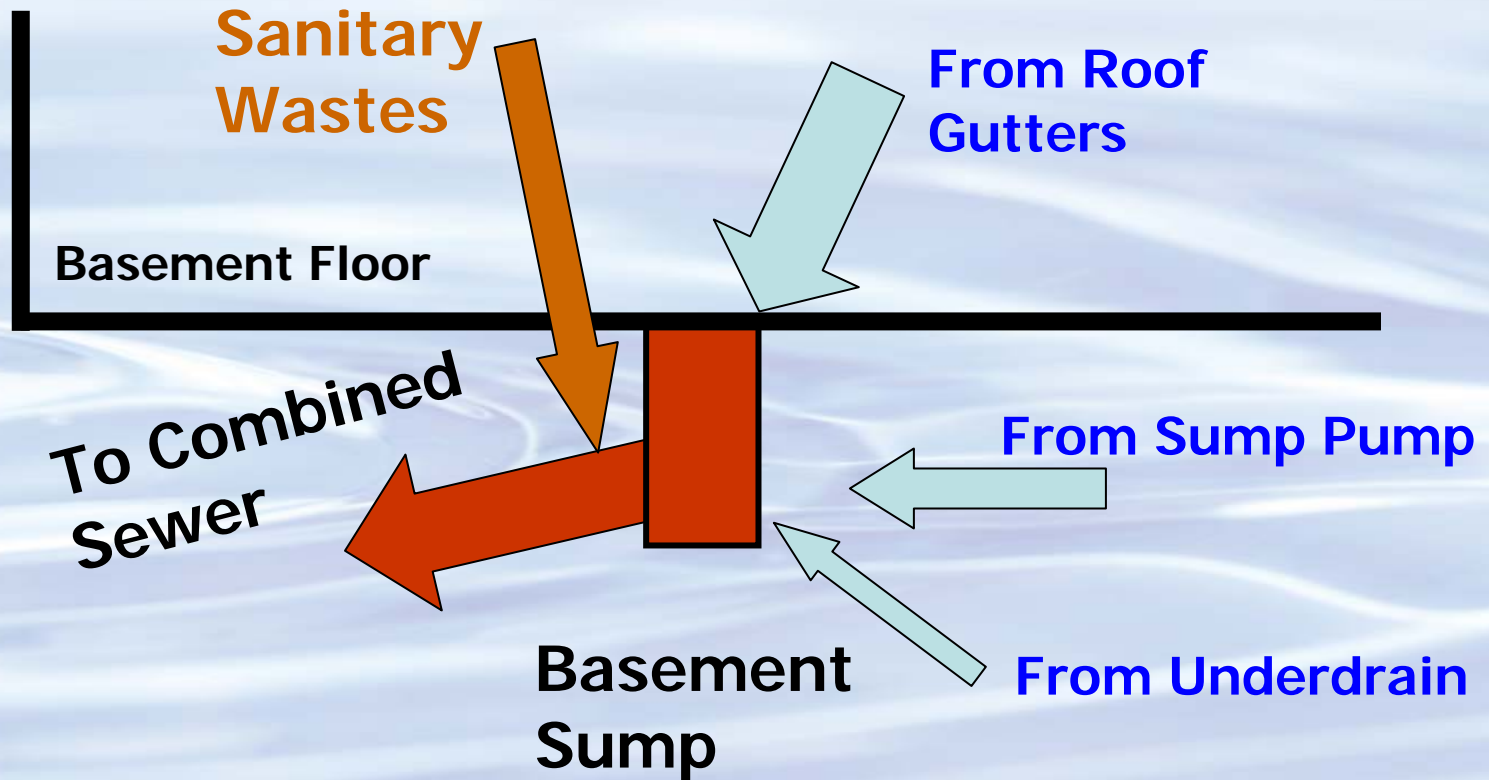


Current Problem!

- **Insufficient Capacity in Combined System**
- **Rain Events Cause Basements to Flood With Sewage**
- **Street Flooding**
- **EPA/DEP Consent Orders**



Why Are Basements Flooding? 1900's Sewer Plumbing



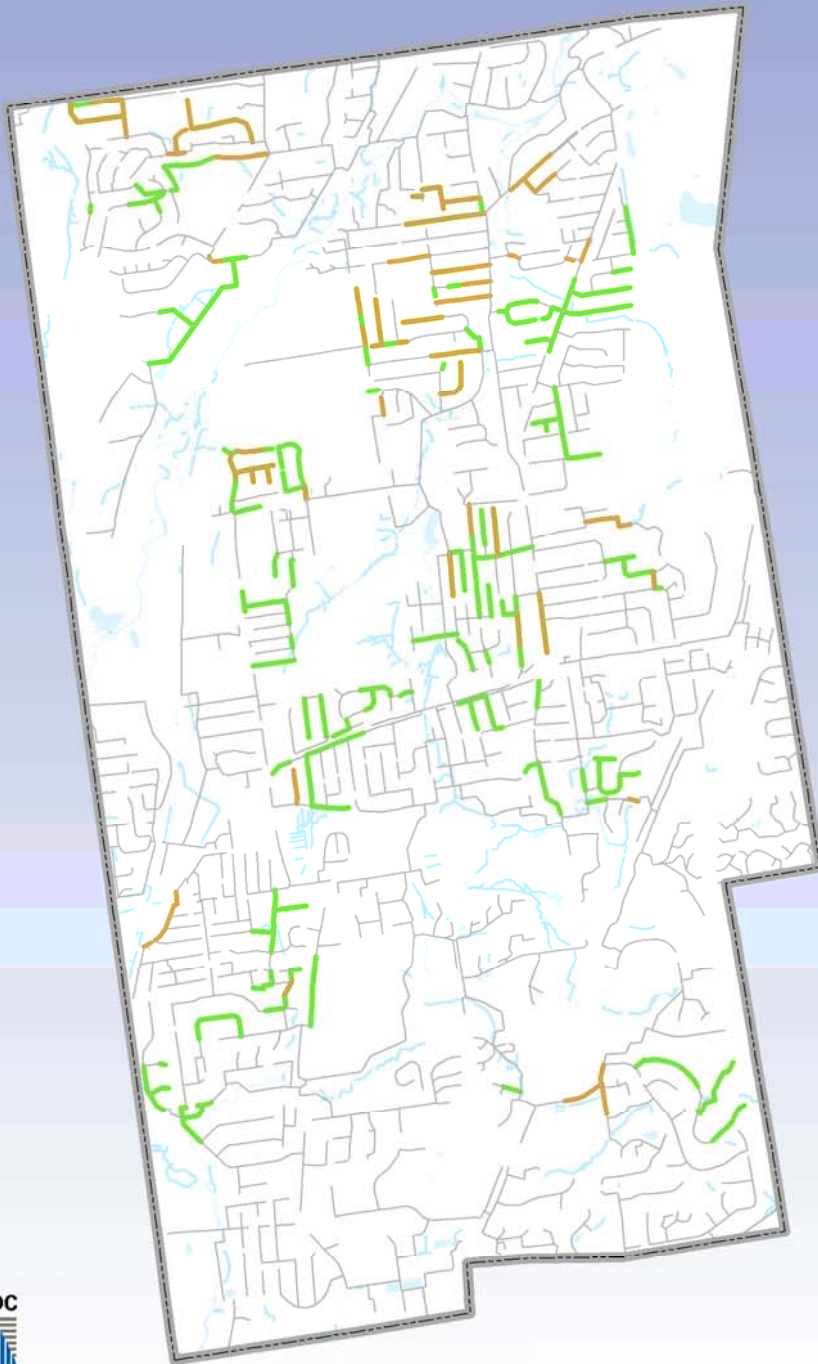
Typical Roof Leader



Program Plan For District Towns

- **Repair & Line Sewer Pipes to Reduce Inflow**
- **Manage Drainage Inflows from Private Buildings**
- **Develop Trunk Line for Sewage Conveyance & Storage**
- **Increase Local Sewer System where Needed**
- **Upgrading Hartford, East Hartford, Rocky Hill WPCFs**

NEWINGTON PIPE LINING STATUS MAY 2008



LEGEND

SEWER MAINS

--- COMBINED WASTEWATER

— SANITARY

LINING STATUS

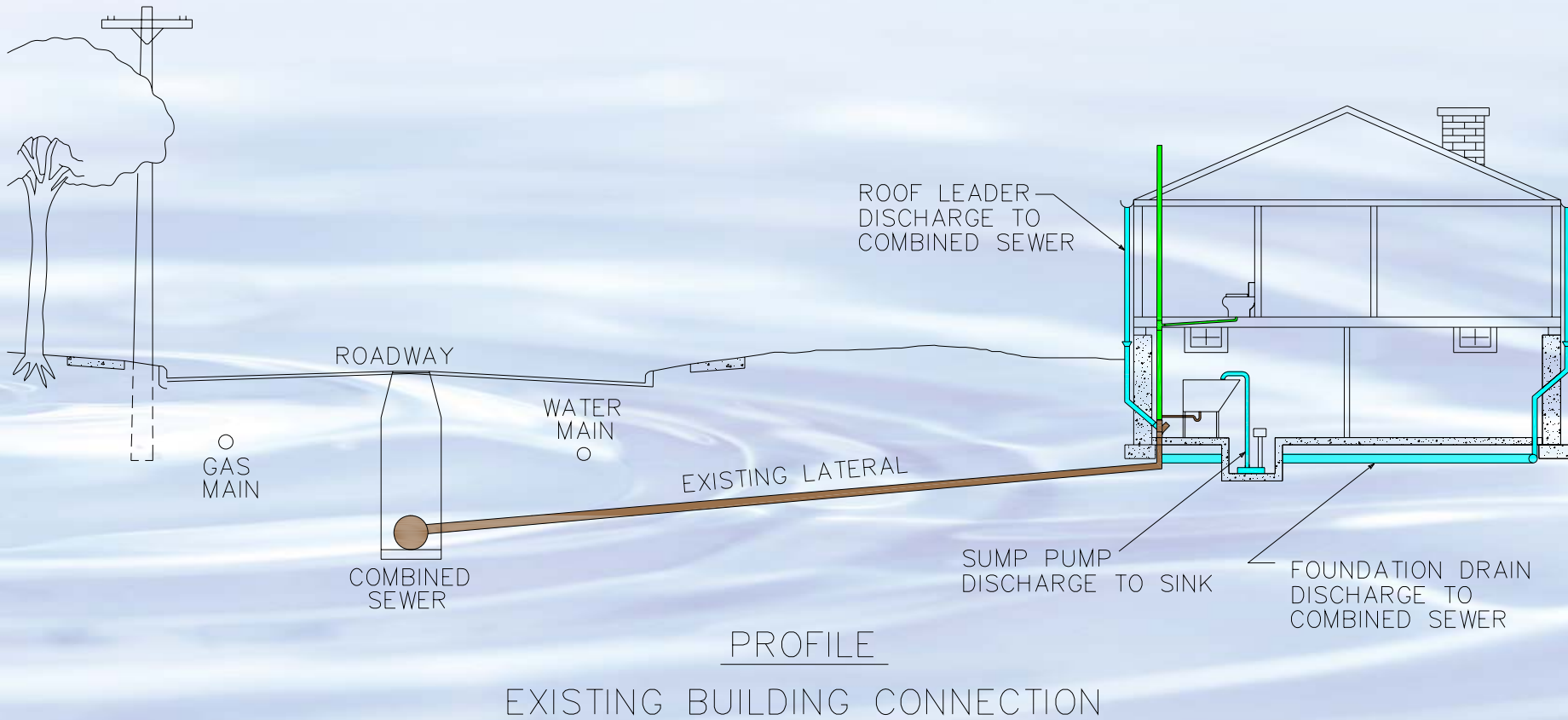
— PIPES ALREADY LINED

— PIPES TO BE LINED

2,000 0 2,000 4,000 6,000
FEET

1 INCH = 4,000 FEET

Typical / Existing Building Connection



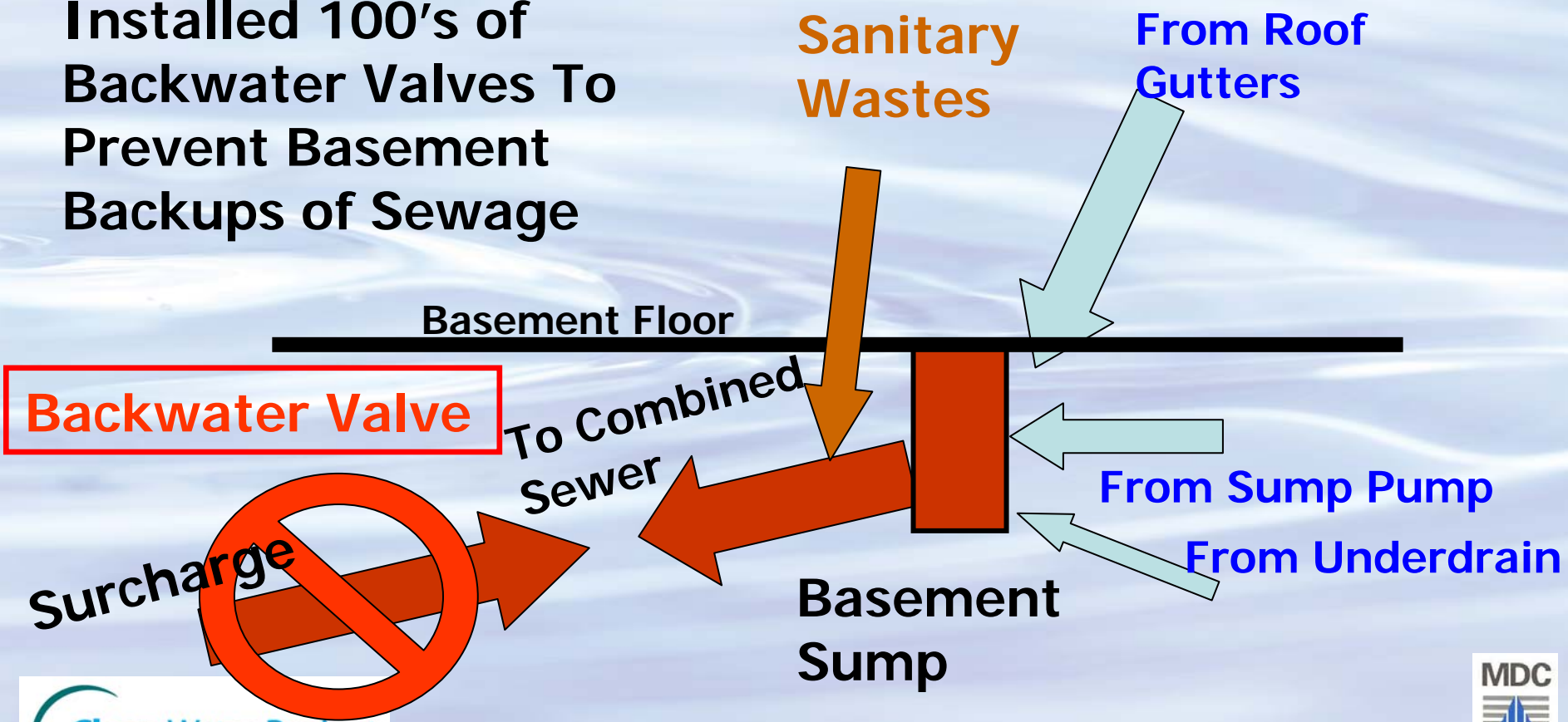
6 WAYS TO FLOOD A BASEMENT...

1. Collection System Backflow Into Home When Overflowing
2. Failure of Backflow Valve (typically, maintenance)
3. Leaks In "Internal" Drainage Piping
4. Leaks Through Foundation Wall
5. Leak Up Through Basement Floor (Unfinished)
6. Lateral Blockage... Tree Roots, Decay, etc.

....ONLY #1 IS A DISTRICT RESPONSIBILITY.

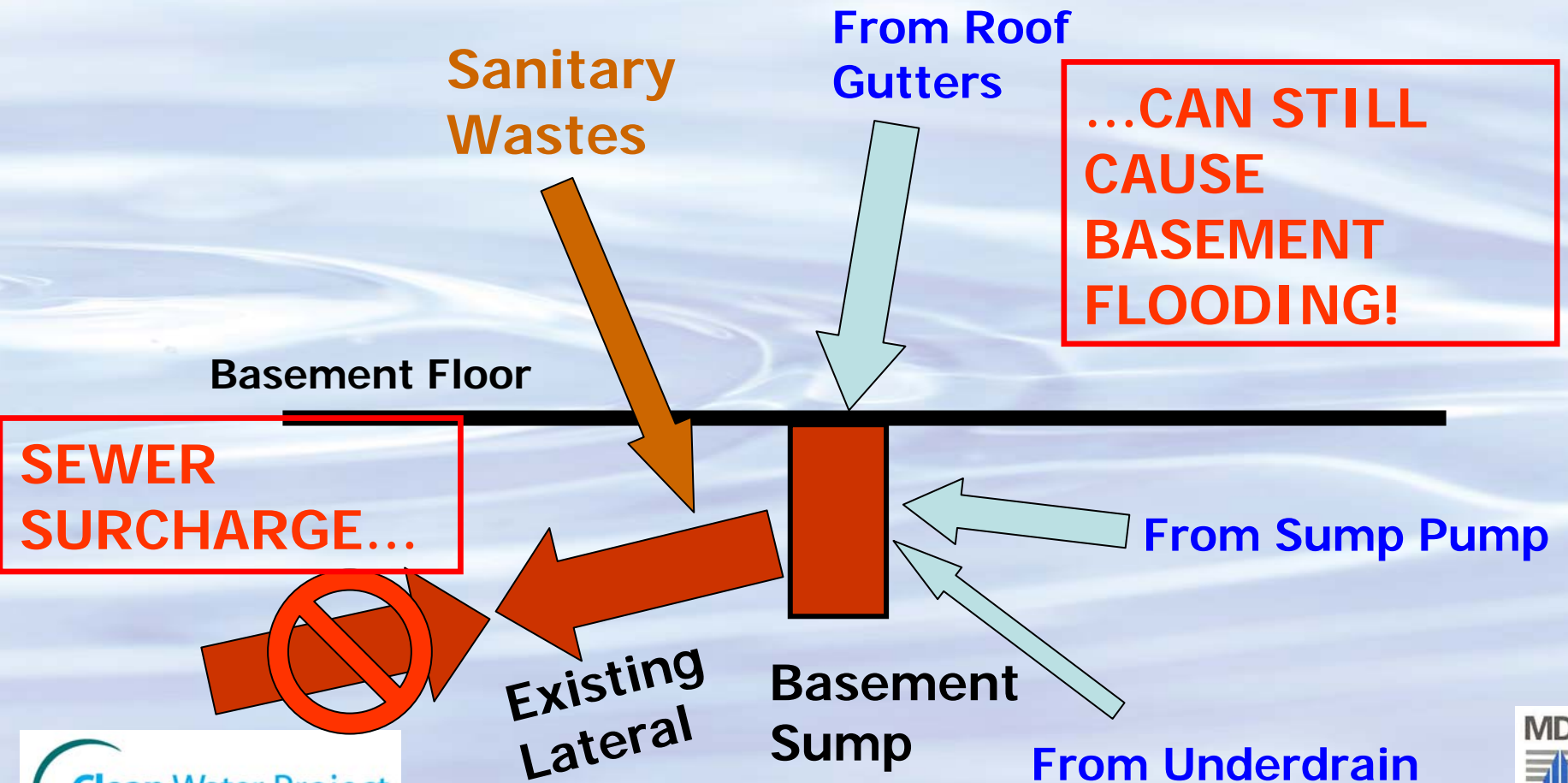
Interim Fix – Backwater Valves

The District Has Installed 100's of Backwater Valves To Prevent Basement Backups of Sewage

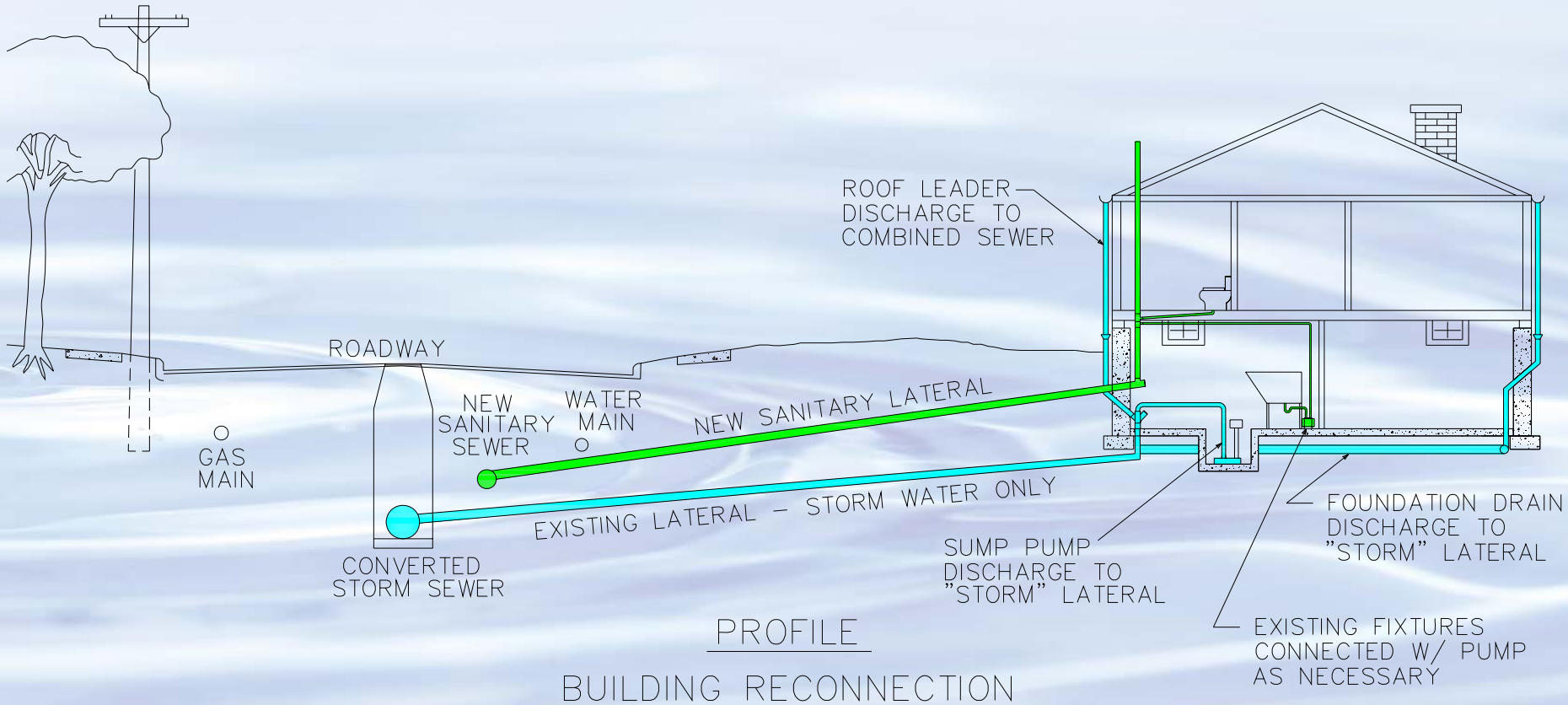


Backwater Valve = Interim Fix

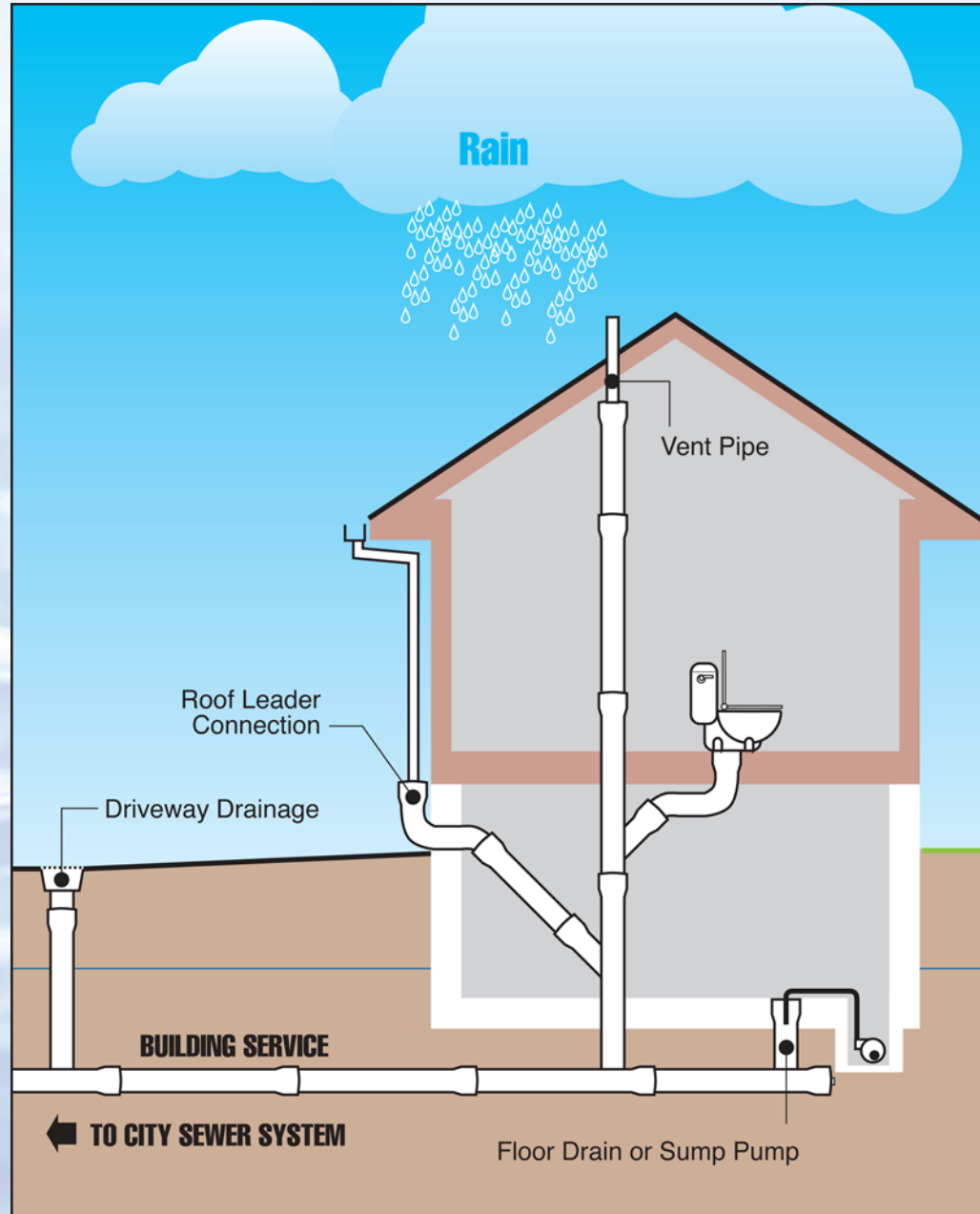
There IS A PROBLEM!



Typical Sewer Separation



Typical House Connection



So What Can A Citizen Do To Correct Sewer Overflows?

- **Address Your Own House: Adapt Landscaping To Rain Storage and Irrigation Uses**
- **Remove Gutters and Sump Pumps From Sewers**
- **Encourage Use of “Green Designs” For Commercial and Public Spaces**
 - **Park Storm water Systems**
 - **Propose Curb “Gardens” and “Vegetated” Strips**
 - **“Sustainable” Design Standards for New Developments, Parking and Large Buildings**
 - **Require Stormwater Controls To Mimic Nature**

We Can Probably Hire A Few “Saw Cutters” To Disconnect Gutters....



Downspout and Sump Pump Redirection Can Irrigate And Reduce Sewer Flows



Rain Barrels Can Store Roof Drainage For Garden Irrigation



PHOTO: RIVERSIDES STEWARDSHIP ALLIANCE



PHOTOS: RIVERSIDES STEWARDS ALLIANCE

Planters Provide Stormwater Control



PHOTO: LOW IMPACT DEVELOPMENT CENTER



PHOTO: LOW IMPACT DEVELOPMENT CENTER

Rain Gardens Come In All Sizes And Locations...



PHOTO: BILL HUNT

Newington Activities

- **Completed All SSES Field Activities** (December 2007)
- **Completed Hydraulic Model**
 - Pipes Greater than 12 inches
- **Completed Sewer System Evaluation Study (SSES)**
 - Submitted to EPA on May 12, 2008
- **Extending the Sewer Capacity Analysis**
 - Additional model modifications
 - Additional flow monitoring
 - Additional field investigations to identify inflow sources

Newington Building Inspections

- **2,560** Dwellings Total
- **1,934** Dwellings Completed
 - **76%** Success Rate
- **2,370** Confirmed or Potential Inflow Sources
 - **284**: Foundation Drain Source
 - **1,442**: Roof Leader Source
 - **384**: Sump Pump Source
 - **217**: Driveway, Yard, Stairwell & Patio Drain Source
 - **43**: Floor Drains Source

Upcoming Newington Actions

- **Sanitary Sewer Rehabilitation Projects (Pipe Lining) to begin Fall 2008**
 - On-going pipe lining will rehabilitate **38,765** feet
 - MDC already rehabilitated **90,788** feet since 2005
- **Sanitary Sewer Evaluation Recommendations**
 - 494 Manhole Cover Replacement
 - 59 Manhole Lining
 - 66,716 feet of pipe lining includes additional lining to be completed in future lining construction contracts
 - 1,167 feet of pipe replacement
- **Additional recommendations to be provided with completion of the Sewer Capacity Analysis**

Repair Manhole Covers



Examples of Sewer Pipe Defects



Infiltration due to pipe break



SSO from excessive flows



Roots blocking pipe



Infiltration due to leaking joint

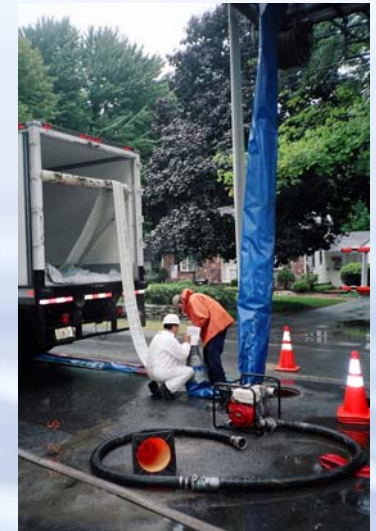
Investigation/Rehabilitation



Smoke testing



Dye Testing



Pipe Lining



Building Inspection



Manhole Lining



TV Inspection

CWP Facilities Planning

- **LTCP Update**
 - City-wide
- **SSO Facilities Plan**
- **Franklin Avenue Area Facilities Plan Update**

EPA Consent Degree Compliance

- Requirements
- Requested Modification
- SSES Recommendations sent to EPA Spring 2008

Status of State & Federal Reimbursement

- 2006 = \$8,948,269.93
- 2007 = \$14,853,512.86
- 2008 To Date = \$19,718,889.60
- **Total CWP Reimbursements to Date = \$43,520,672.39!**

Future District Abatement Strategies For Newington

- **Remove Illegal Inflow Sources**
- **Removal of Roof Drains, Sump Pump Inflows?**
 - **Need For New Drainage Systems?**
- **Increased Sewer Capacity to Treatment Plants**

Current CWP Program Successes

- **Professional RFQ/P's Advertised**
 - Program Construction Consultant
 - Neighborhood Outreach Services
 - Communications Consulting
- **Upcoming Construction Bids**
 - District Wide Sewer Spot Repairs
 - Edgewood Street Sewer Separation (Pilot)
 - Manhole Cover Replacements—Minority Firms Would Bid These Projects
 - District Wide Pipe Lining

2008 Critical LTCP Issues

-  Studies
-  Concept Design
-  Prel Design
-  Final Design
-  Construction
-  Regulatory Issue

**Edgewood St
Pilot Project**

**CTDEP "Project
Spend" Schedule**

**City-wide Drainage
Master Plan**

Excavate Disposal Study

**Revise LTCP SSO Assessment;
Conduct Alternatives Analysis**

**Hartford Water
Pollution Control
Facility Master Plan**

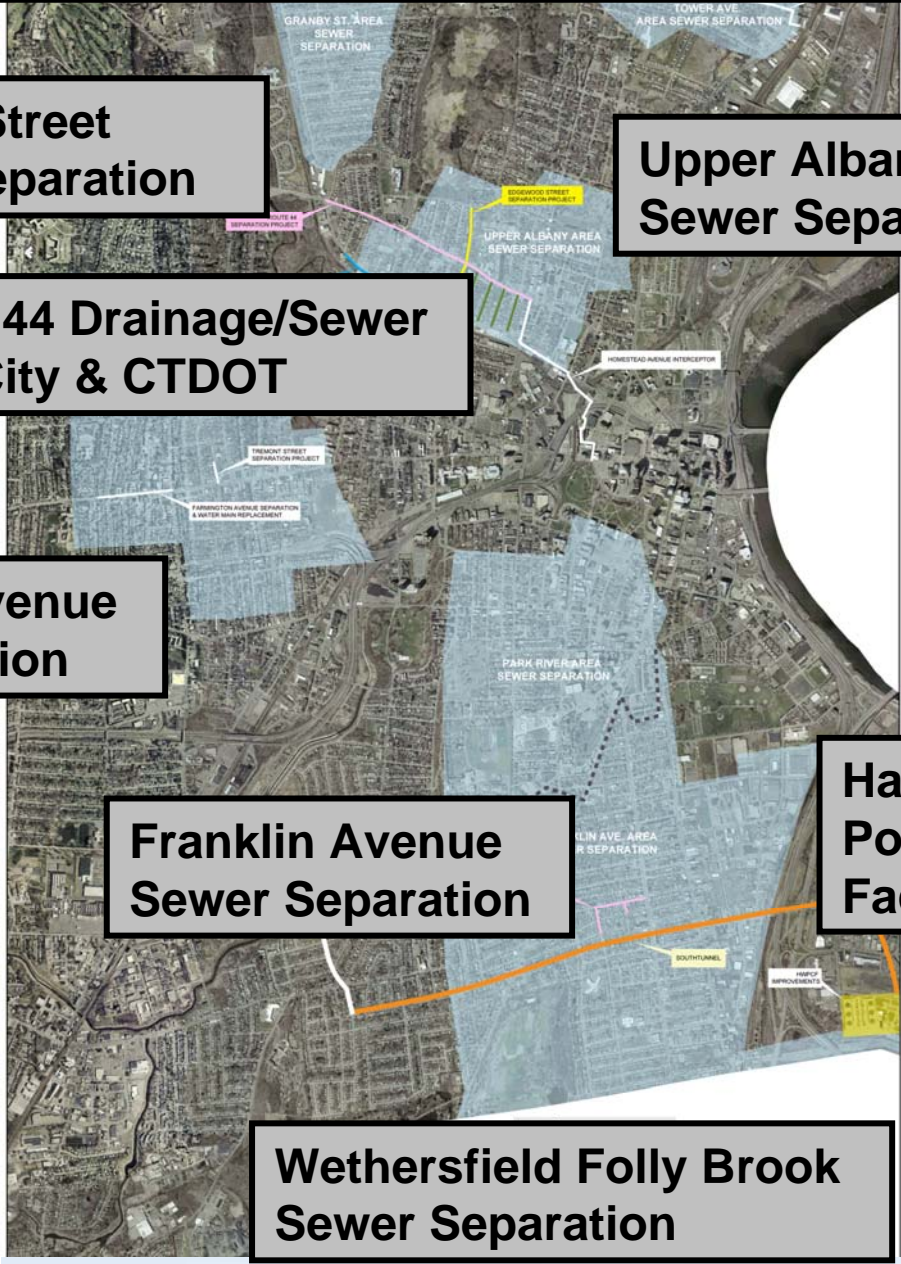
**Newington-West
Hartford SSO
Overflow Control**

**South Hartford
Conveyance Tunnel**

**Wethersfield Cove-
Folly Brook Sewer
Overflows**

**Rocky Hill Water
Pollution Control
Facility Master Plan**

Key 2008 Design Projects



**Granby Street
Sewer Separation**

**Upper Albany Avenue
Sewer Separation**

**Route 44 Drainage/Sewer
With City & CTDOT**

**Farmington Avenue
Sewer Separation**

**Franklin Avenue
Sewer Separation**

**Hartford Water
Pollution Control
Facility Energy Project**

**Wethersfield Folly Brook
Sewer Separation**

2008 Construction Starts

Granby Street Drainage Outfall

Windsor Pipe Lining & Repair

Edgewood Street Sewer Separation

West Hartford Pipe Lining & Repair

Newington Pipe Lining & Repair

BNR & Incinerator No. 3 Lining at Hartford Water Pollution Control Facility

Franklin Avenue Building Laterals

Wethersfield Pipe Lining & Repair

Rocky Hill Pipe Lining & Repair



2009 Construction Starts

Granby Street Sewer Separation

Windsor Pipe Lining & Repair

Burton Street Area Sewer Separation

Garden Street Sewer Separation

Farmington Avenue Sewer Separation

Homestead Avenue Interceptor Extension

West Hartford Pipe Lining & Repair

Park Street Sewer Separation

Incinerator Energy Recovery at Hartford Water Pollution Control Facility

Newington Pipe Lining & Repair

Franklin Avenue Sewer Separation

Wethersfield Pipe Lining & Repair

Rocky Hill Pipe Lining & Repair



Sanitary Sewer Overflow Program Actions

- Peer Review of SSES Models By International Team
- Reviewing Sewer Model Concerns With EPA
- Improving Systemwide “Rain Response” Data
- Continue National Expert Review As Computer Models Improved
- Evaluating Range of Cost-Effective Infiltration/Inflow Actions
- Seek State and Federal Approval of Modified SSO Plans

Clean Water Project Plan (2006-2013)

Focus on Health and Safety Issues

- Hartford sewer separation to alleviate backups
- Wethersfield Cove area separation
- Remove Existing Streams From Sewers

Eliminate SSO's From Hartford's Streams

- Pipe Repairs and Lining In Outlying Towns
- South Conveyance Tunnel Addresses Overflows

Increase Wastewater Treatment Plant Capacity and Install Nitrogen Removal Improvements



Program Plan For District Towns

- **Sewer Pipe Repairs and Lining To Reduce Inflows**
- **Identifying Private Building Inflow Sources**
- **Considering Selected Sewer Capacity Increases**
- **Increasing Pumping Capacity Where Needed**
- **Upgrading East Hartford, Rocky Hill WPCFs**

5 Ways to Learn More!

- **Monthly MDC Cable Access TV Show**
- **Call our 24-hour Information Line: 251-6942**
- **Read your Quarterly MDC Bill Inserts**
- **Visit our website www.thecleanwaterproject.com**
- **Read our monthly MDC Newsline Newsletter**
 - **Available at Public Locations in Your Town**

