Upper Trinity Regional Water District

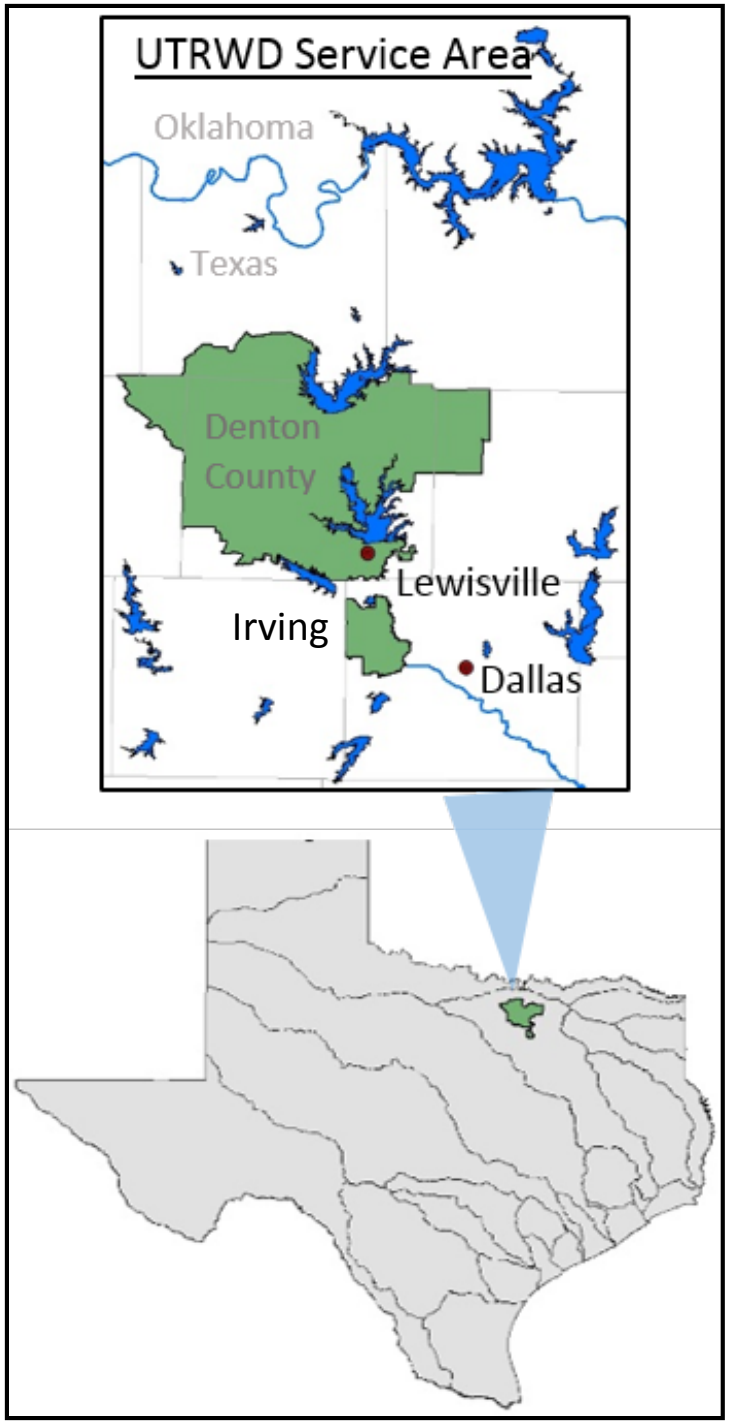
A Regional Wholesale Water & Wastewater Provider

Rains & Floods of 2015

"A Stress Test for Facilities, Personnel & Operations"

UPPER TRINITY
REGIONAL WATER DISTRICT

Presentation to
NCTCOG Water Resources Council
Sept. 3, 2015



Upper Trinity Regional Water District Members & Customers

- Argyle
- Argyle WSC
- Aubrey
- Bartonville
- Celina
- Copper Canyon
- Corinth
- Cross Timbers WSC
- Denton
- Denton County
- DCFWSD # 1A (Castle Hills)
- DCFWSD # 7 (Lantana)
- DCFWSD # 8A (Paloma - North)
- DCFWSD # 9 (Providence)
- DCFWSD # 10 (Savannah)
- DCFWSD # 11 (Paloma - South)
- Double Oak
- Flower Mound
- Hickory Creek
- Highland Village
- Irving
- Justin
- Krum
- Lake Cities MUA
- Lake Dallas
- Lewisville
- Lincoln Park
- Mustang SUD
- Northlake
- Oak Point
- Pilot Point
- Ponder
- Prosper
- Sanger
- Shady Shores

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Record Rains - - What a Year!

Predictable Results:

- Water Supply Reservoirs Replenished
- Ended the On-going Drought
- Excess Rain caused flooding
- Flood Control Dams - - They worked

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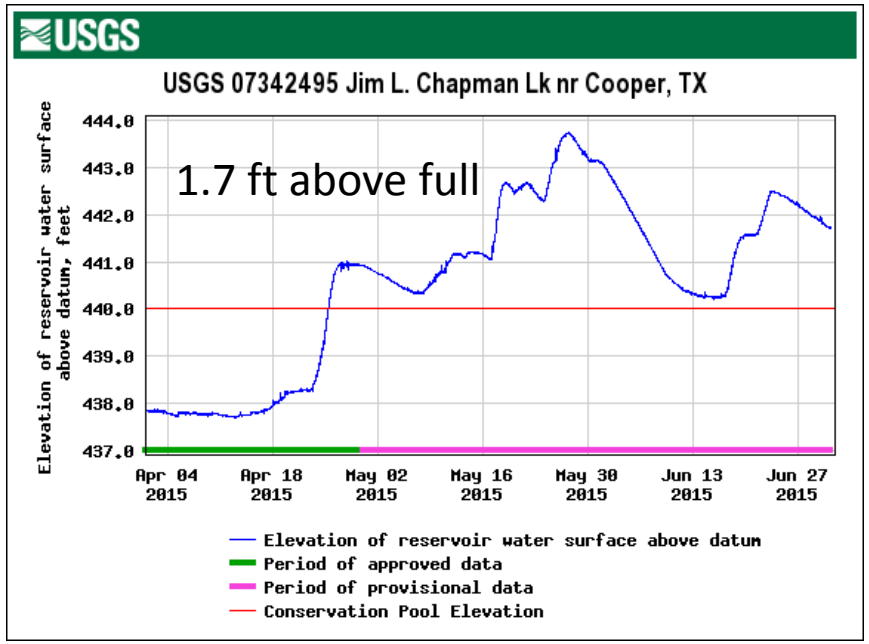
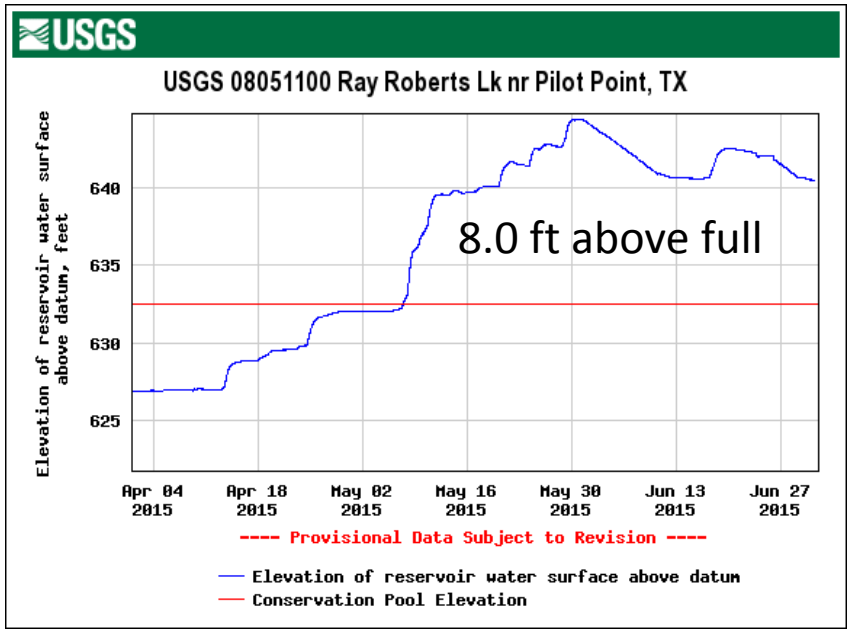
RESERVOIR LEVELS as of July 1, 2015





Spillway Elevations

- Chapman 446.2 ft
- Lewisville 532 ft
- Ray Roberts 640.5 ft
- Grapevine 560 ft

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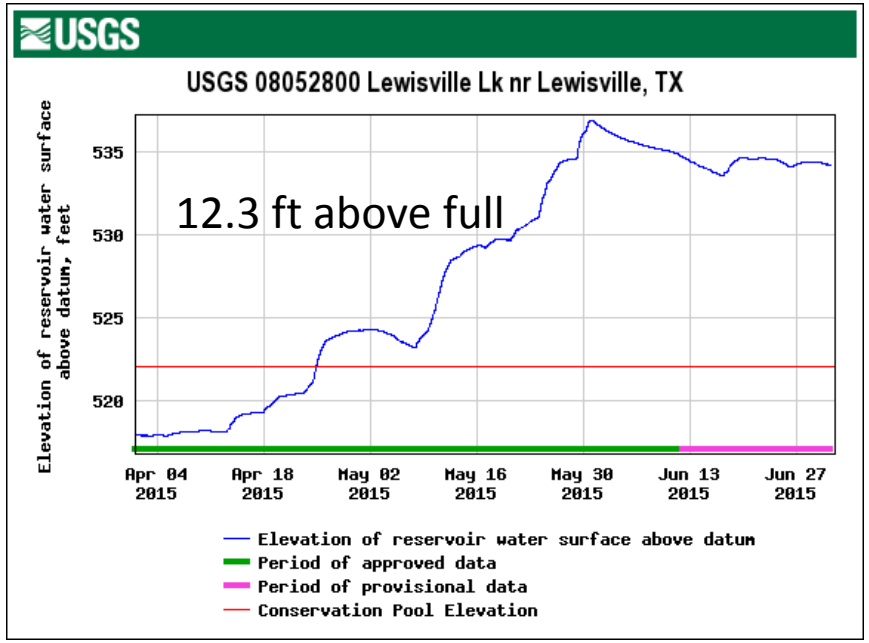

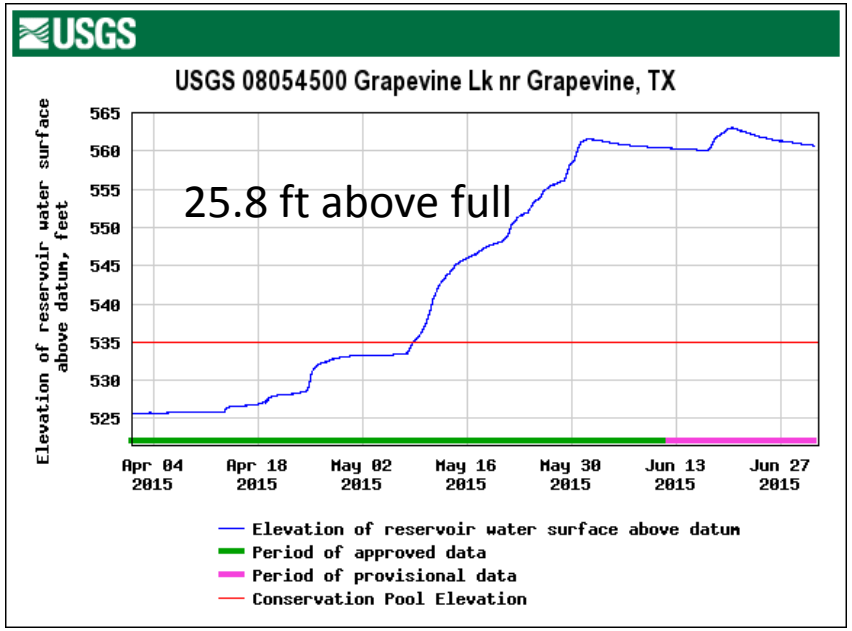

Lewisville Lake Intake & Spillway

UTRWD / City of Lewisville
Intake Pump Station

Emergency Spillway
looking South

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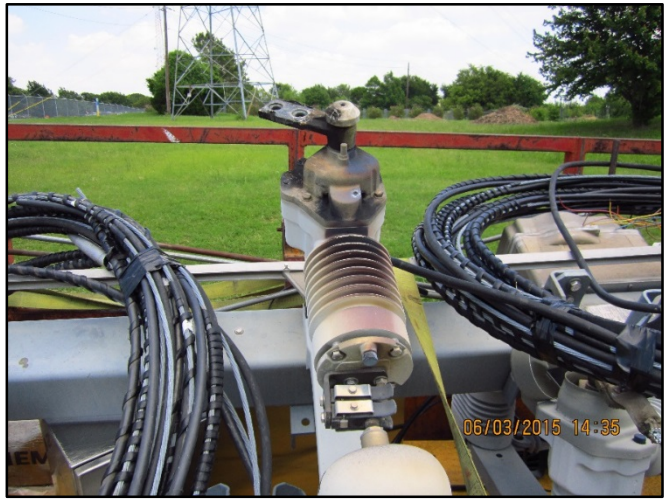
Thomas E. Taylor
Regional Water Treatment Plant
Current Capacity – 70 mgd
Located in Lewisville

Taylor Plant - - Electricity Service & Communications

Lightning strike took out CoServ Electrical Service Transfer Switch



Communications Equipment at Elevated Tank damaged by Lightning

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Regional Water Reclamation Systems

Lakeview Regional Water Reclamation Plant

Efficient systems to reclaim wastewater generated in local communities

Current Capacity – 5.5 mgd

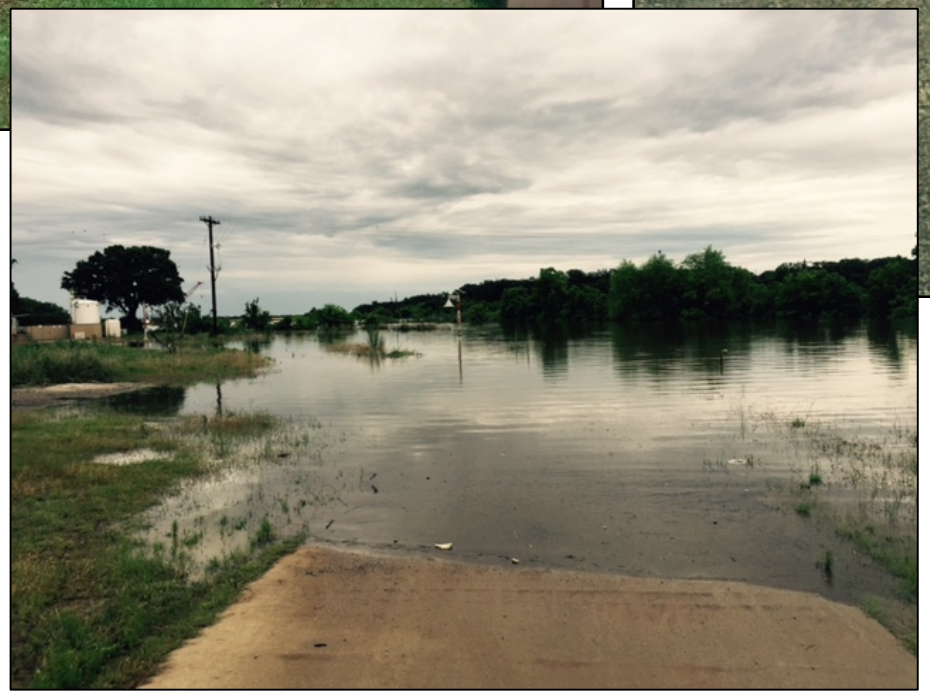
Lakeview Water Reclamation Plant

Lake approaches Plant - - Western boundary

Plant Outfall channel
Looking toward Toll Bridge

Highland Village Lift Station

Meter vault submerged



Access road flooded

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Peninsula Water Reclamation Plant

Peninsula Water Reclamation Plant

Flooding Northern plant Boundary

Flooding - - Eastern Boundary

Peninsula Water Reclamation Plant

Flooding around headworks

Grit Building - - flooded

Riverbend Water Reclamation Plant

Doe Branch Regional Water Reclamation Plant June 16, 2015

Doe Branch Plant – Construction Site

Other Hazards

Copperhead found near water meter vault

Cottonmouth water moccasins found under equipment at Lakeview Plant

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With Record Rains This Year

Other Results - - Not as Obvious

- Reduced sales for water utilities
- Higher Wastewater Flows in Collection System
- Potential for overflows - - Must Report
- I & I (Infiltration & Inflow) Problems
- Peak Flows at Treatment Plants

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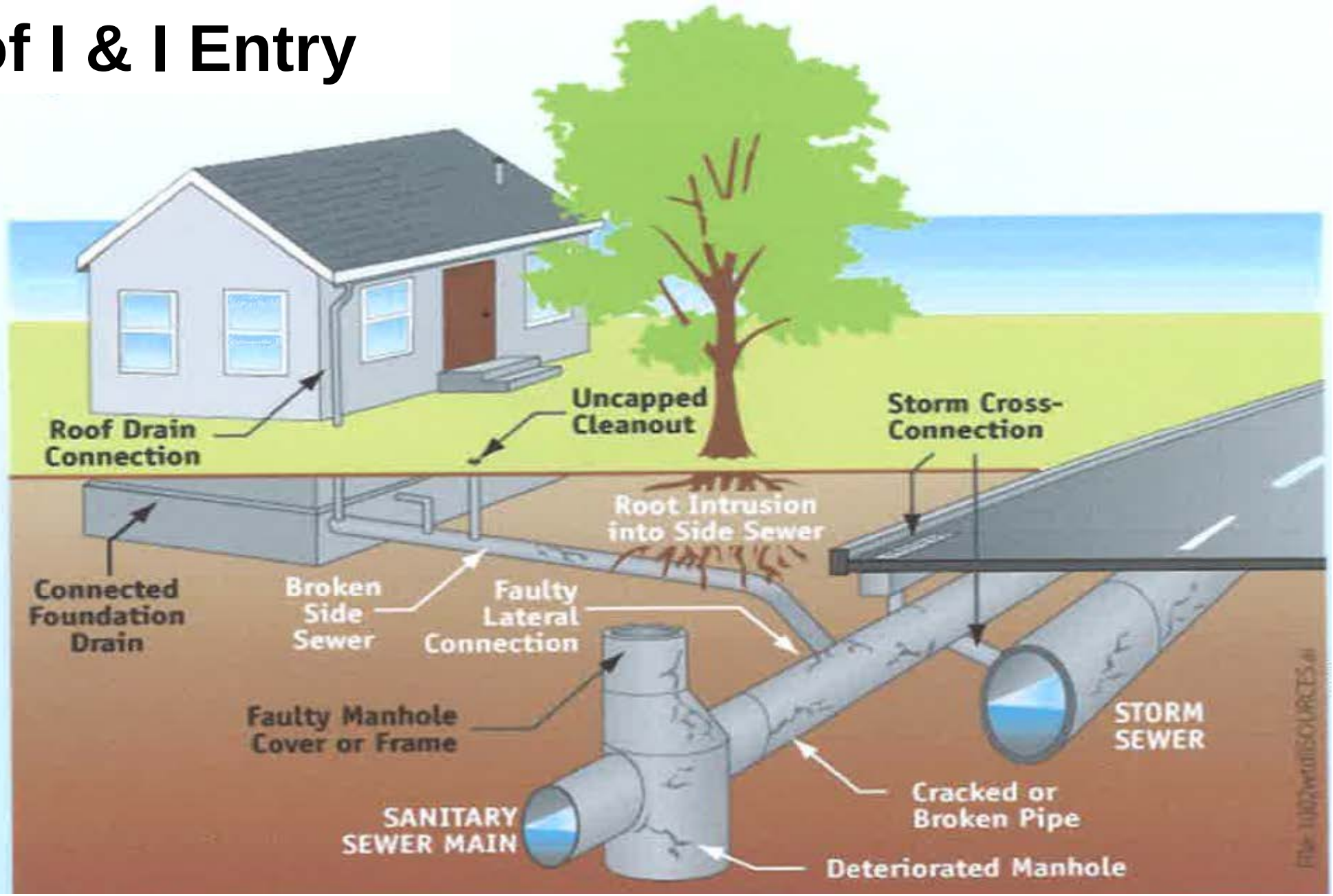
Points of I & I Entry



INFLOW SOURCES (black text) **INFILTRATION SOURCES (white text)**

Construction Inflow Sources

INFLOW - - Rainfall that **enters the sewer system through direct connections**, such as downspouts, area drains that are connected to sewer laterals, uncapped cleanouts and damaged manholes & cleanouts.

On a Regional Basis

- All wastewater systems need to address I&I.
- Not a one-time fix.
- I&I requires regular maintenance - - to address growth and system deterioration.
- Stress to members / customers that we are in this together. We share the same treatment plants.

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Flooding Event – After Action Review

- How well did our emergency operations plan work?
- What were our plan successes?
- Describe any limitations on our operations that were identified.
- How did this event test the District's ability to communicate, allocate resources and / or take appropriate actions?
- Describe how the event familiarized District Staff with their role in continuing critical functions.
- Describe other general lessons learned.

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Discovery items / issues (immediate, near term, long term)

Further Evaluation Needed

- Flood protection for the Peninsula Plant
- Increase effort by Customer Cities to reduce I / I
- Staffing levels / equipment requirements

WE ARE THANKFUL !

- ❖ NO SERIOUS DAMAGE discovered ….Yet!
- ❖ NO MAJOR SERVICE PROBLEMS
- ❖ NO INJURIES

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QUESTIONS

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