

Upper Trinity Regional Water District

A Regional Wholesale Water & Wastewater Provider

Rains & Floods of 2015

“A Stress Test for Facilities, Personnel & Operations”



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

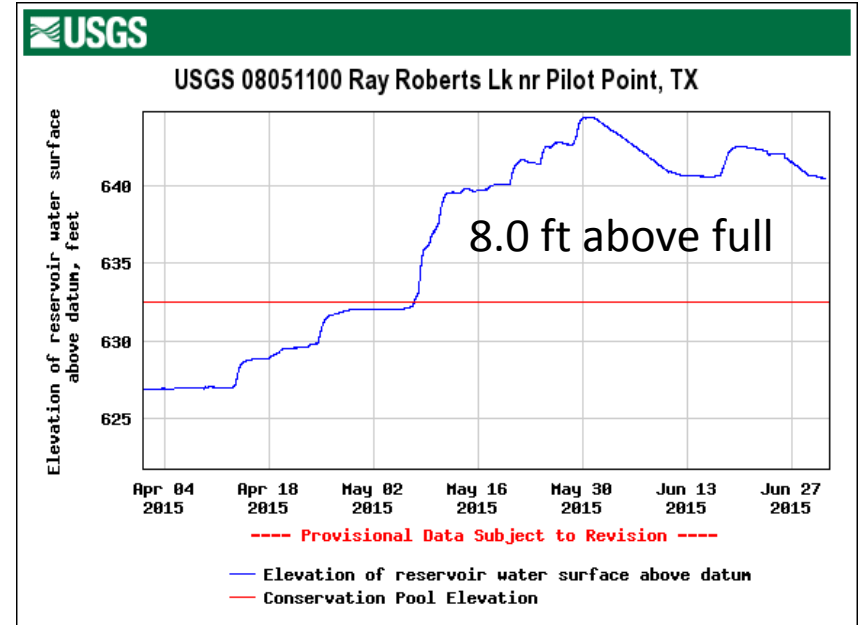
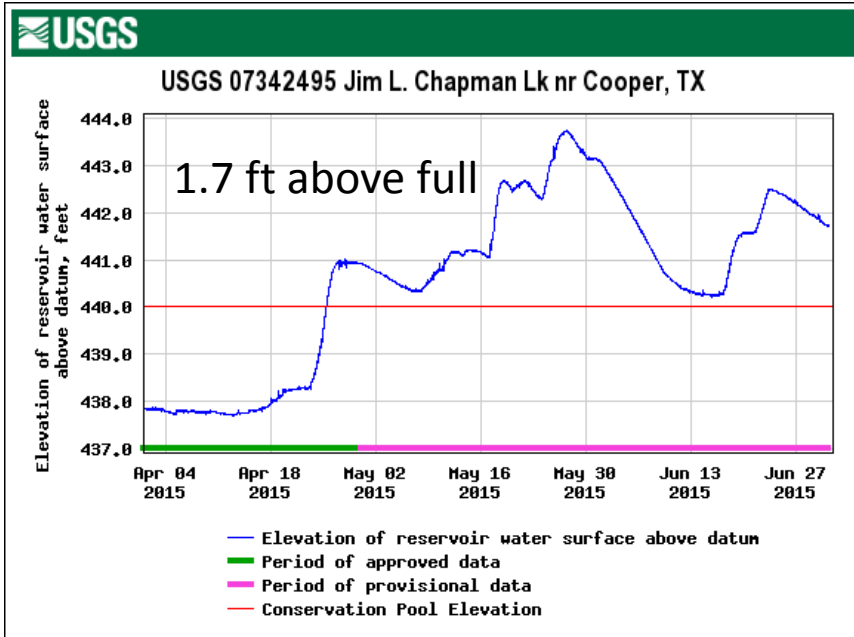
Record Rains - - What a Year!

Predictable Results:

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

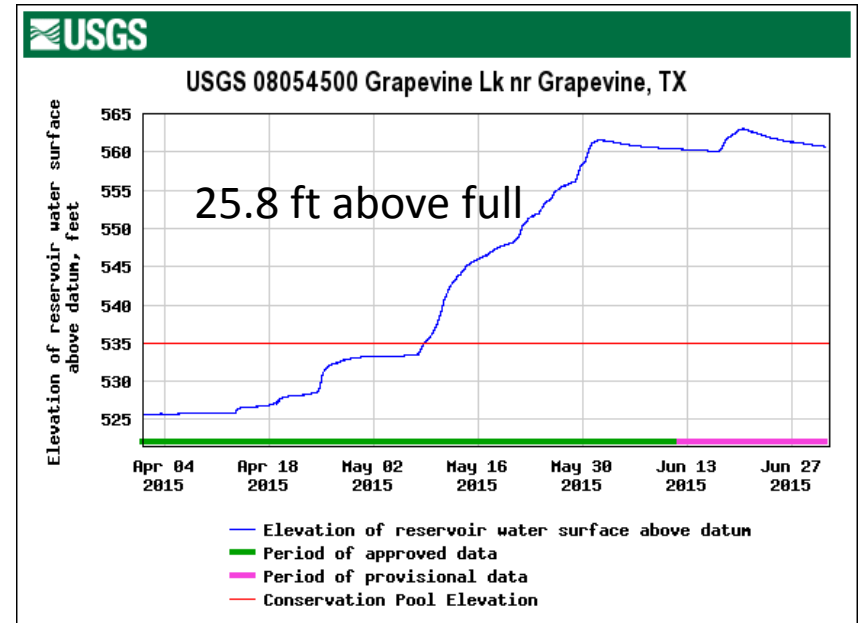
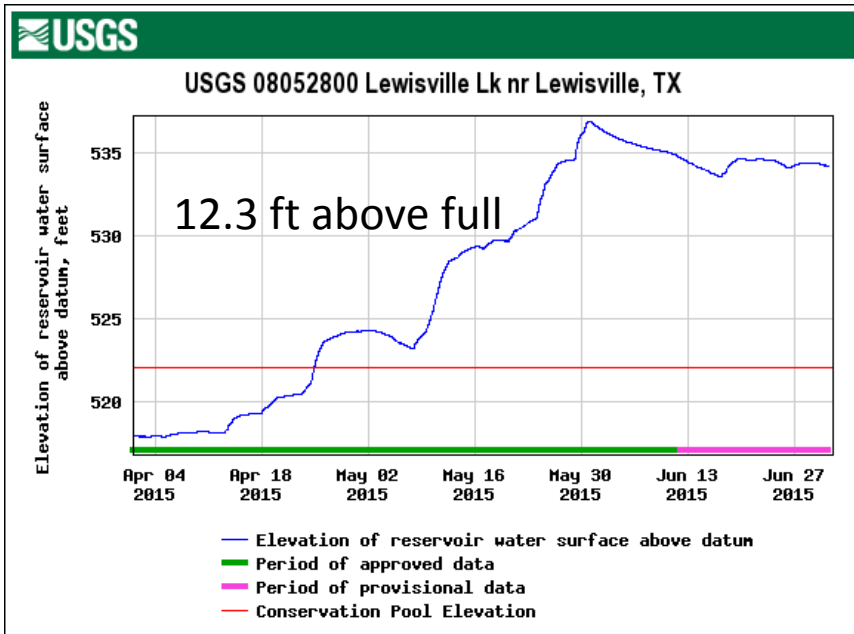


RESERVOIR LEVELS as of July 1, 2015



Spillway Elevations

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



Lewisville Lake Intake & Spillway



**Emergency Spillway
looking South**

**UTRWD / City of Lewisville
Intake Pump Station**





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





Regional Water Reclamation Systems



Efficient systems to reclaim wastewater generated in local communities

Current Capacity – 5.5 mgd

Lakeview Regional Water Reclamation Plant

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**

A photograph of the Peninsula Water Reclamation Plant. In the foreground, there is a stack of approximately ten layers of large, light-colored rectangular stone blocks. To the right of the stone stack is a dark wooden post-and-rail fence. In the middle ground, a black chain-link fence runs across the frame. Behind the fence is a large, flat, green grassy area. In the background, there is a large industrial building with a metal roof and several support columns. The sky is blue with some light clouds. The overall scene is outdoors and appears to be a well-maintained facility.

Peninsula Water Reclamation Plant

Peninsula Water Reclamation Plant



Peninsula Water Reclamation Plant



Flooding around headworks

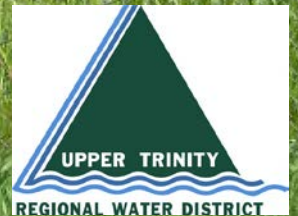
Grit Building - - flooded

Riverbend Water Reclamation Plant



Lewisville Lake near
Plant Outfall line - -
no water inside plant

06/03/2015





Doe Branch Regional Water Reclamation Plant June 16, 2015

Doe Branch Plant – Construction Site



**Influent Pump Station
work site flooded**

Other Hazards

Copperhead found near water meter vault



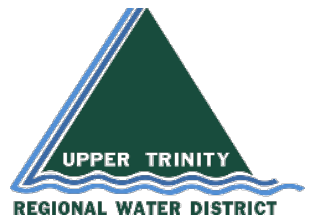
Cottonmouth water moccasins found under equipment at Lakeview Plant



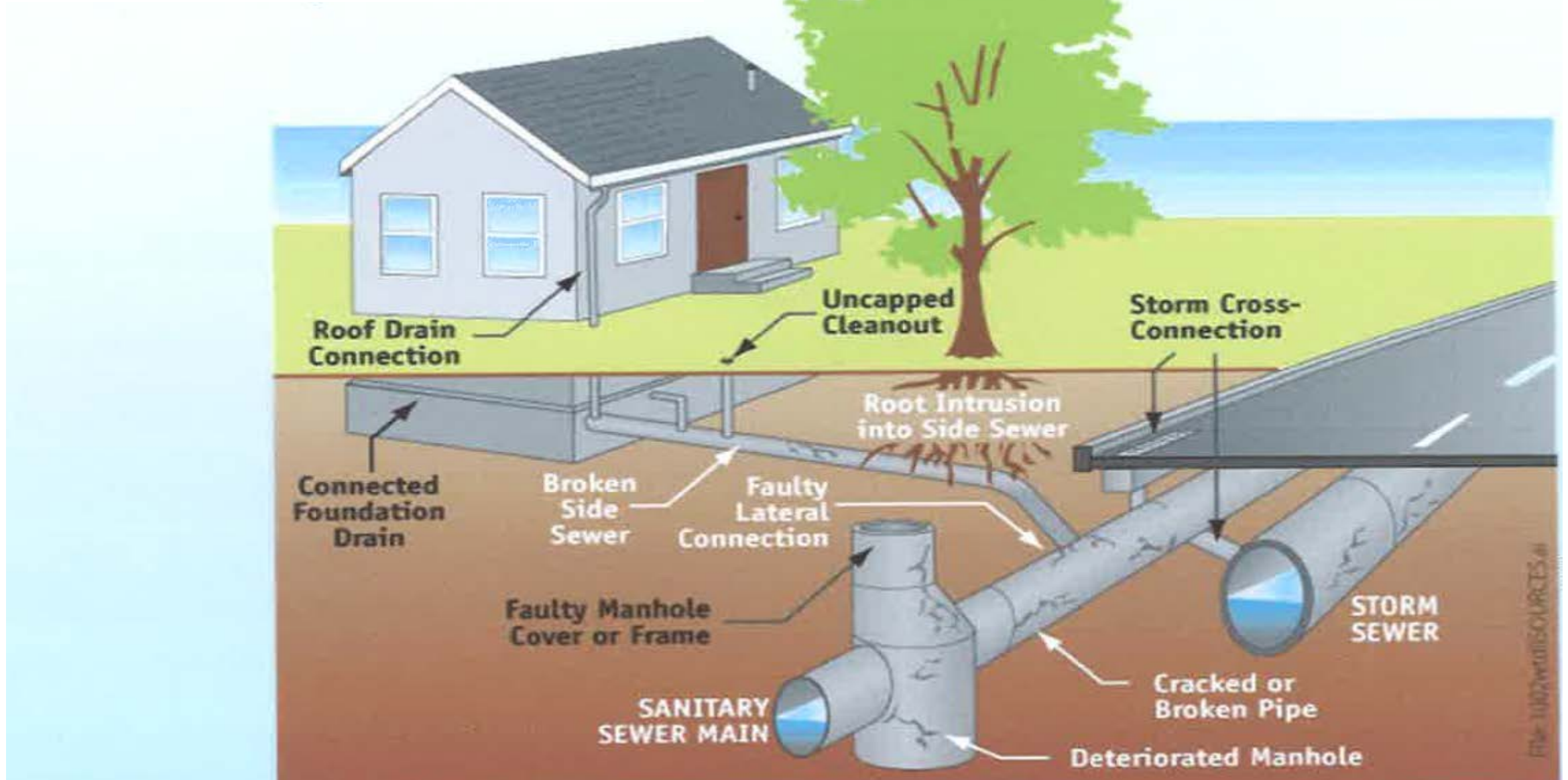
With Record Rains This Year

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**



Points of I & I Entry



INFLOW SOURCES (black text)

INFILTRATION SOURCES (white text)

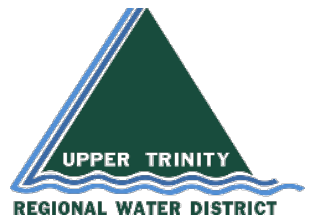
Construction Inflow Sources



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.**



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.**

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



Further Evaluation Needed

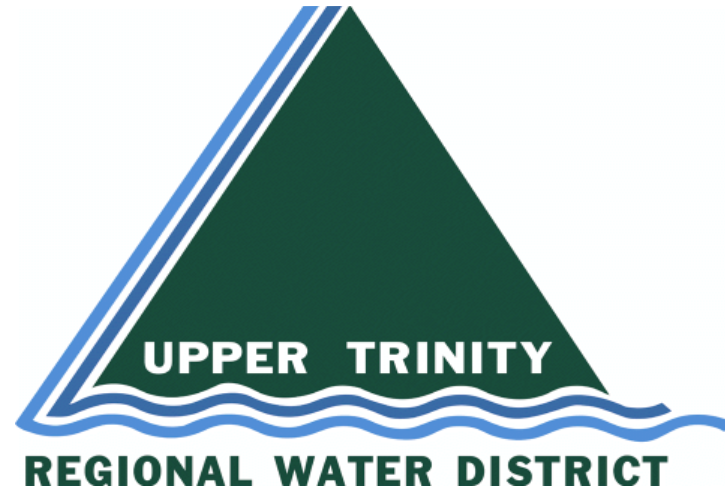
- Flood protection for the Peninsula Plant
- Increase effort by Customer Cities to reduce I / I
- Staffing levels / equipment requirements

WE ARE THANKFUL !

- ❖ NO SERIOUS DAMAGE discoveredYet!
- ❖ NO MAJOR SERVICE PROBLEMS
- ❖ NO INJURIES



QUESTIONS



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