



MEETING NOTES

DATE:	March 1, 2016
TIME:	6:30pm – 8:00pm
APAI PROJECT NO.:	0718-007-01
LOCATION:	Hendrick Middle School
ROOM / CONF. CALL #	Conference Room

MEETING TITLE: Russell Creek Odor Evaluation – Town Hall Meeting	
MEETING CALLED BY:	Gerald Cosgrove
FACILITATOR:	Gerald Cosgrove
ATTENDEES:	Gerald Cosgrove (Plano), Alan Davis (APAI), Lynsy Nagle (APAI), Caleb Thornhill (Plano), Alan Tucker (APAI), Neighborhood Residents (Not Listed)

MEETING PURPOSE:	Russell Creek Odor Evaluation
RECORDER:	Lynsy Nagle

NOTES

Please refer to attached presentation slides for additional information.

Key Points From Presentation:

- Wastewater collected in sewers owned by North Texas Municipal Water District (NTMWD) west and north of region (Frisco and The Colony) are routed to the NTMWD's Preston Road Lift Station. The lift station is located at the northwest corner of the City.
- The Preston Road Lift Station:
 - Was designed to pump wastewater two directions/locations:
 - (1) To the north into the force main parallel to Highway 121; and
 - (2) To the east, flowing into the Russell Creek Interceptor.
 - The northern force main is currently offline for construction and repairs.
 - The NTMWD has indicated that the anticipated timeline for repairing the north force main is Summer 2016.
- Alan Plummer Associates, Inc. (APAI) conducted field observations and analytical tests throughout the Project Area to determine the magnitude of odorous compounds, and their probable causes. The observations revealed that to the south of Circlevue Ct. the orientation of two lines that converge into a single manhole, and the hydraulics related to this orientation contribute to odor production. The hydraulic limitations at high flows also prevent air from flowing downstream with the wastewater, forcing the odorous air to exhaust through vents or other openings.
- Check valves have been installed to reduce the ability for odors to flow back upstream into the residential connections. Check valves are not a solution for every connection, because of surcharging and reduced air storage capacity in the collection system.
- The NTMWD feeds chemical at the Preston Road Lift Station to help reduce wastewater odors, but factors exist that make adding another feed point for the Project Area difficult.
- Smoke testing is scheduled for the Project Area. The City will notify residents prior to conducting the tests.

Discussion Items:

- Home owners may have check valves installed on their individual residential connection(s) to the sewer, but this work will need to be performed at the home owner's expense and the City should be notified prior to beginning the work.
- Stormwater runoff into the sanitary sewer collection system (called infiltration and inflow, i.e. I/I) results from conditions including, but not limited to soil expansion/contraction, new construction, illegal connections, damaged infrastructure, etc, and impacts the effectiveness of pipelines during rain events. The City continuously works to address I/I, but it is difficult to address all I/I causes permanently.

MEETING NOTES – Russell Creek Odor Evaluation – Town Hall Meeting

March 1, 2016

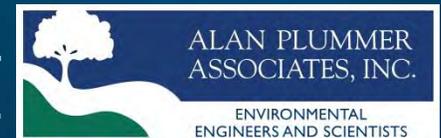
- Concrete retaining walls and gabion baskets (baskets of tightly-placed rock) are placed along the creek to minimize erosion to property adjacent to the creek.
 - Proposed Pipeline Modifications:
 - The engineering evaluation recommended hydraulic improvements to the Russell Creek Interceptor near Circleview Ct., and the City has also proposed to reduce the number of connections from the neighborhood to the interceptor.
 - The proposed improvements will improve the hydraulic conditions at the connection on the south end of Circleview Ct. to reduce turbulence and increase the capacity, which will reduce the production of odors and the release of foul air.
 - The goal is to complete the project 12 months.
 - The following conditions will be present during the construction of the proposed improvements:
 - Presence of heavy equipment throughout construction period (operation and access to construction site during specific hours)
 - Bypass pumping (continuously while buried lines are offline and being replaced)
 - Equipment and materials in easement and staging areas
 - Closure of pedestrian trails over entire construction area
 - Impact to trees will be minimized as much as possible, but will depend on the project conditions
 - The repairs to the north Preston Road Lift Station force main (along Highway 121) and the proposed pipeline modifications discussed above will improve the conditions contributing to the fugitive odors from the Russell Creek Interceptor.
 - Following the completion of these improvements, monitoring will be conducted to determine if additional steps should be taken to address odors.
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Town Hall Meeting to Discuss
RUSSELL CREEK ODOR EVALUATION



March 1, 2016

Gerald Cosgrove, P.E.
Lynsy Nagle, P.E.

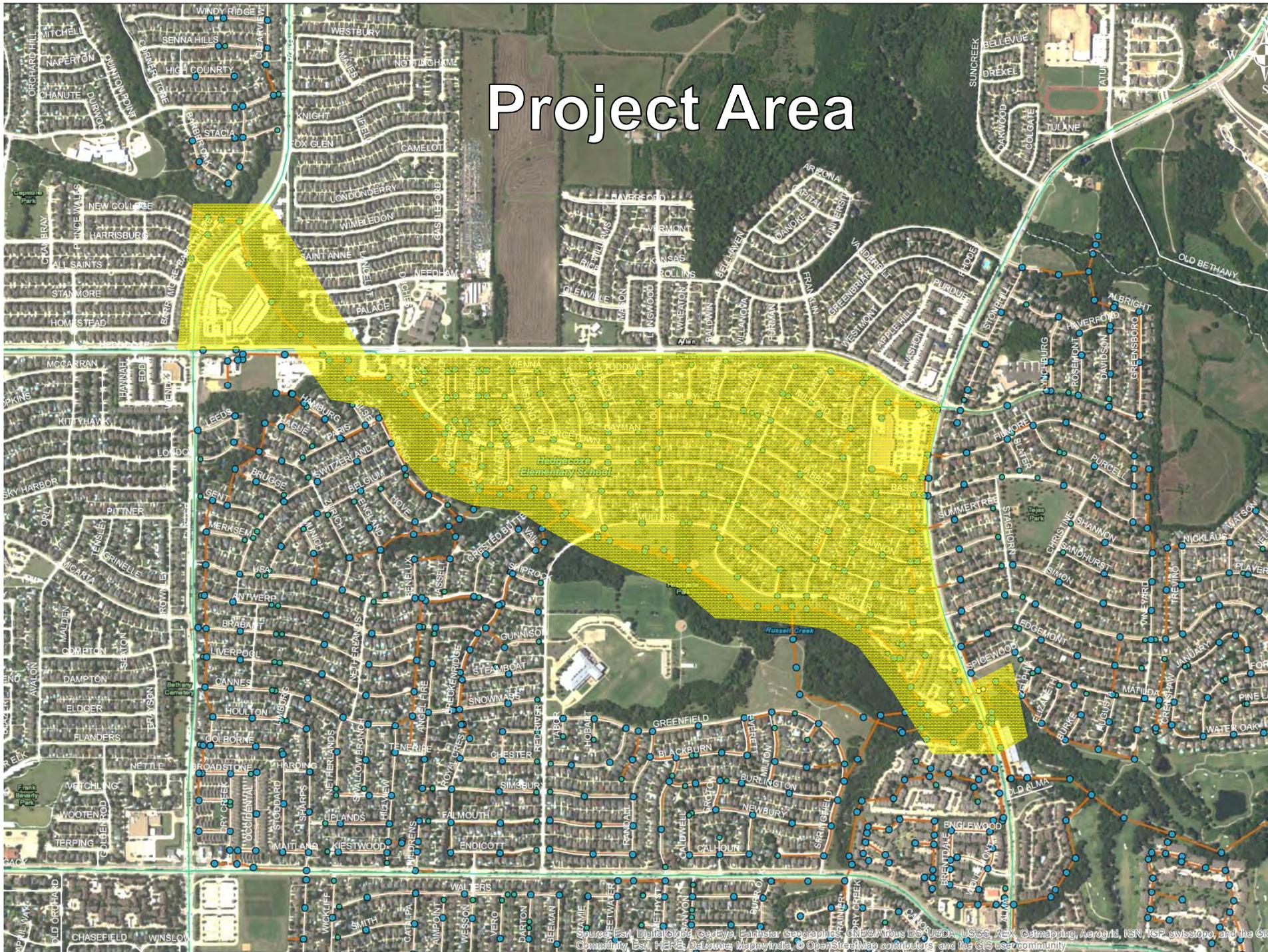


Welcome!

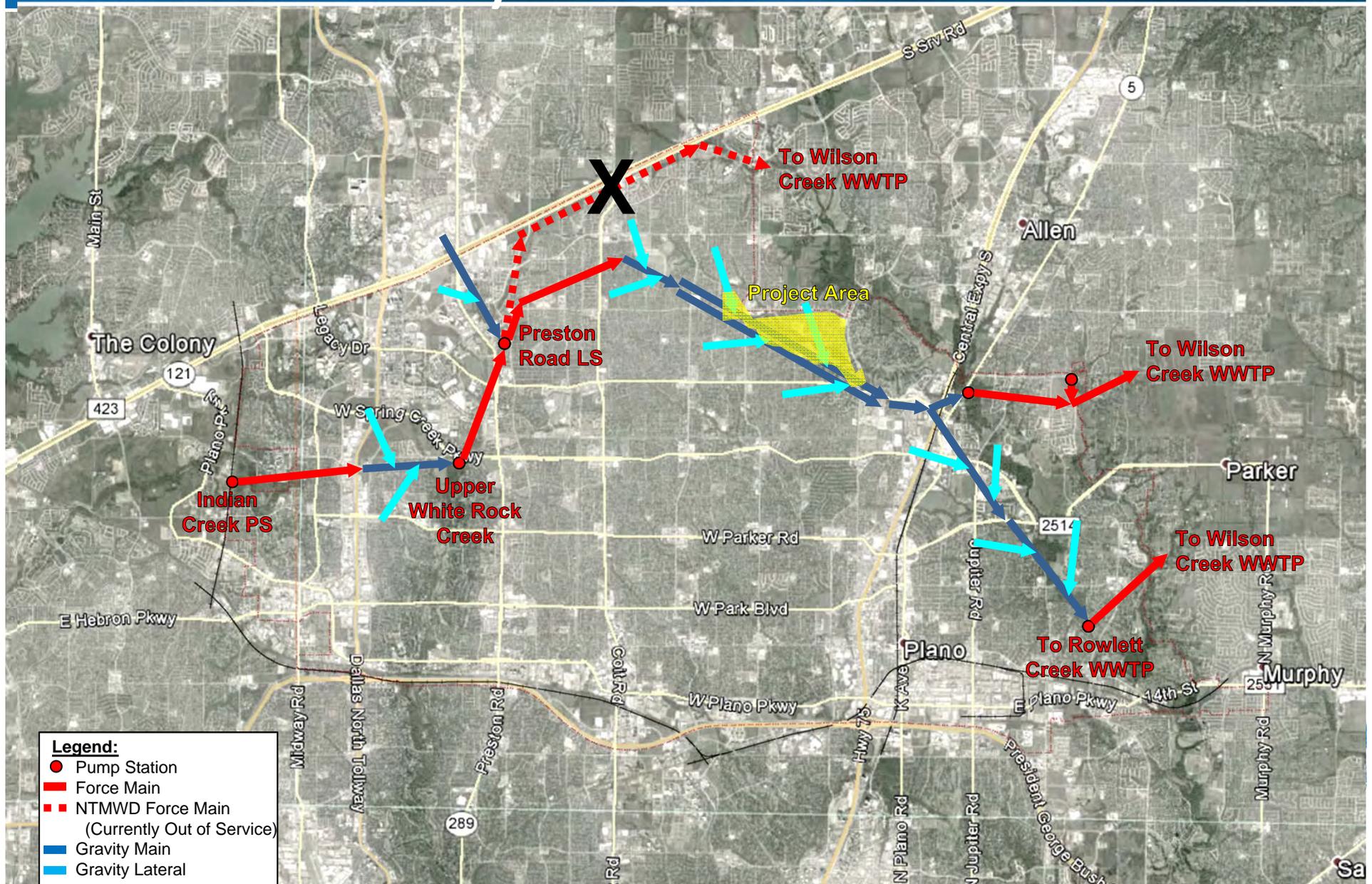
- Are There Odors?
- Where And Why?
- What We Did...
- What Is Being Done...



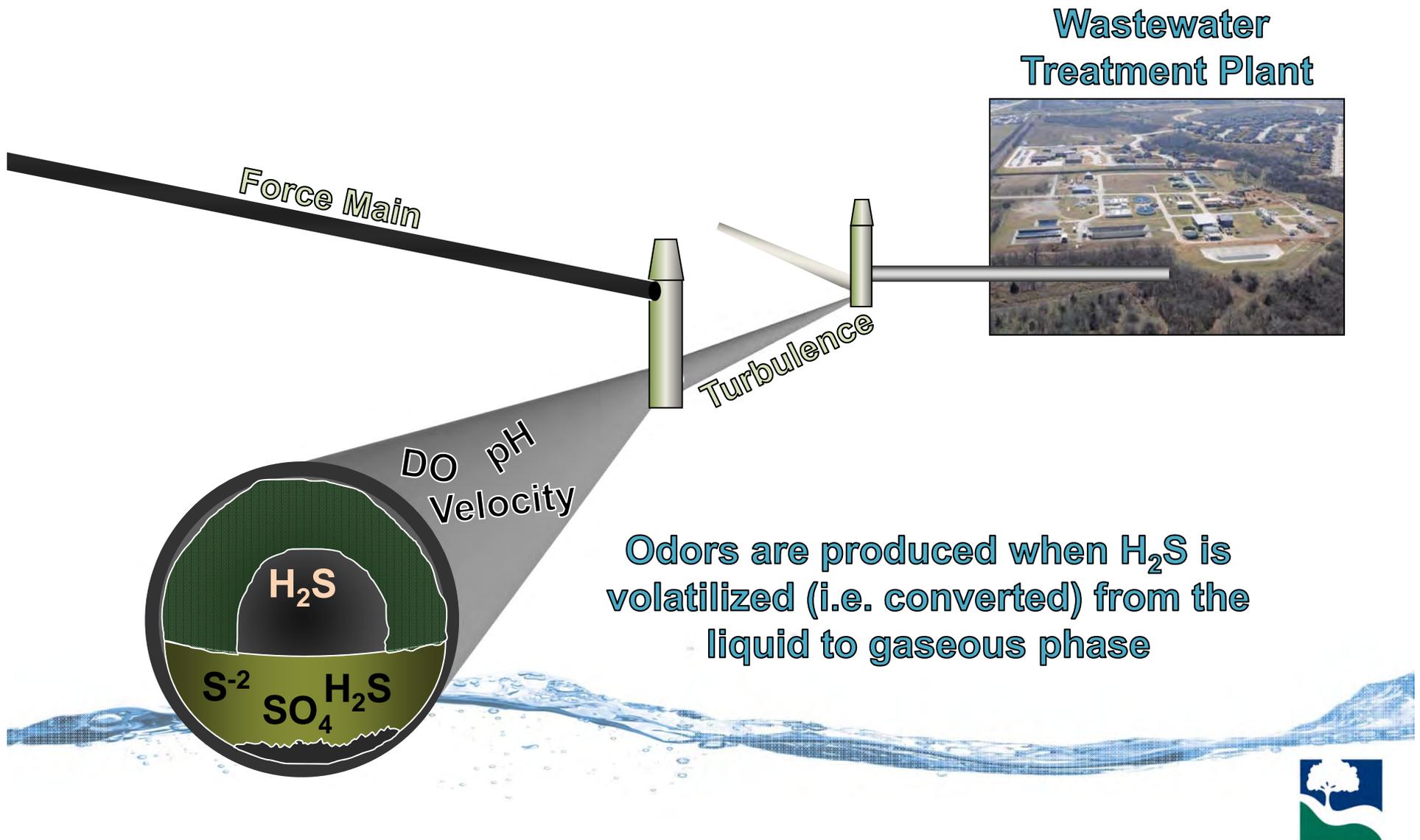
Project Area



Collection System Overview



Odor Generation in the Collection System



Hydrogen Sulfide (H₂S)

- Smells Like: Sulfur, Rotten Eggs
- Odor Threshold (Human Detection):
 - 0.005 ppm
 - Approx. 10,000 Times OSHA Maximum Concentration of 50 ppm*



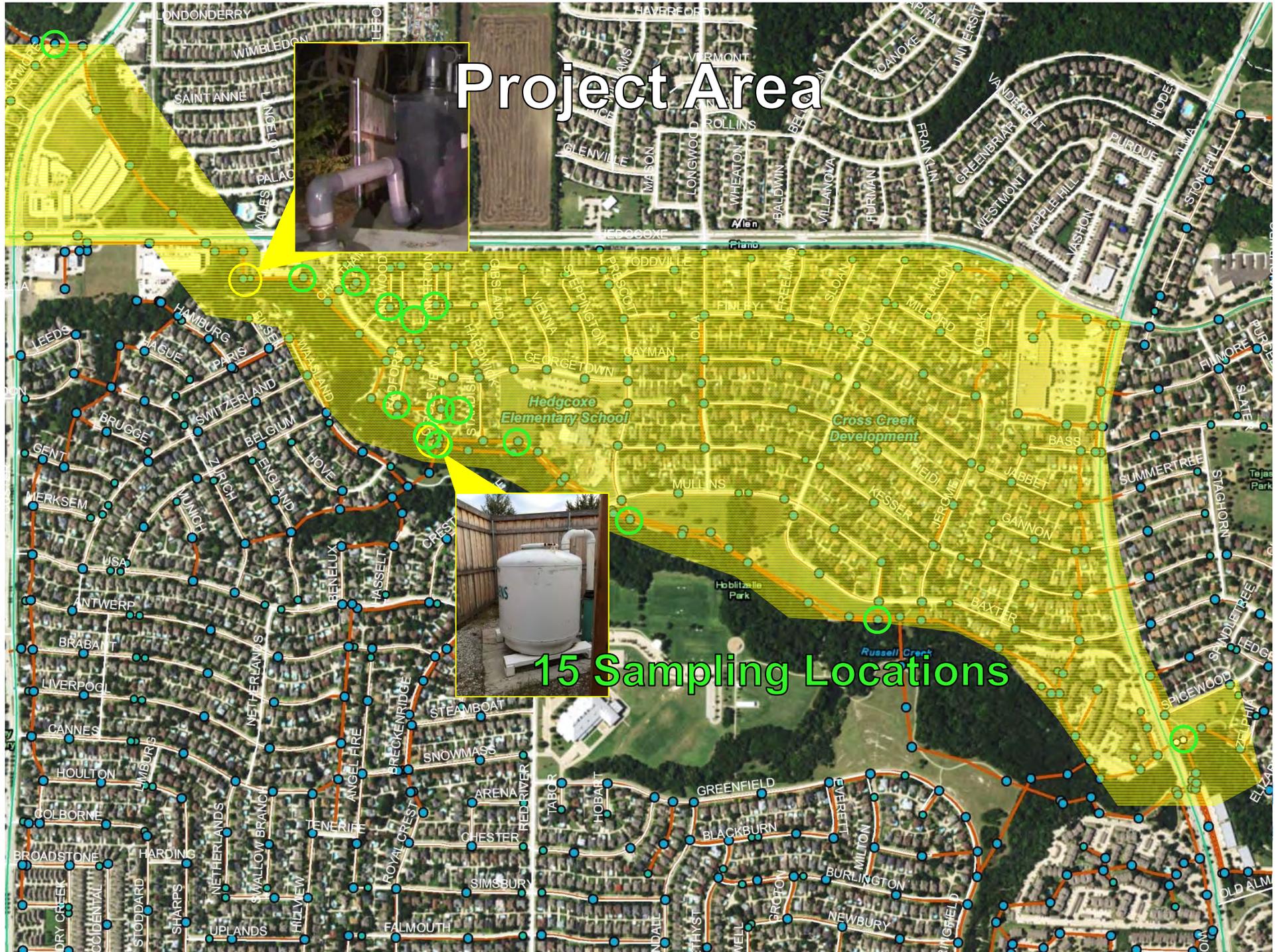
ppm = 1,000 drops
ppb = 1 drop



* Maximum exposure concentration for 10-minute duration over 8-hour period.



Project Area



15 Sampling Locations

Sampling & Monitoring

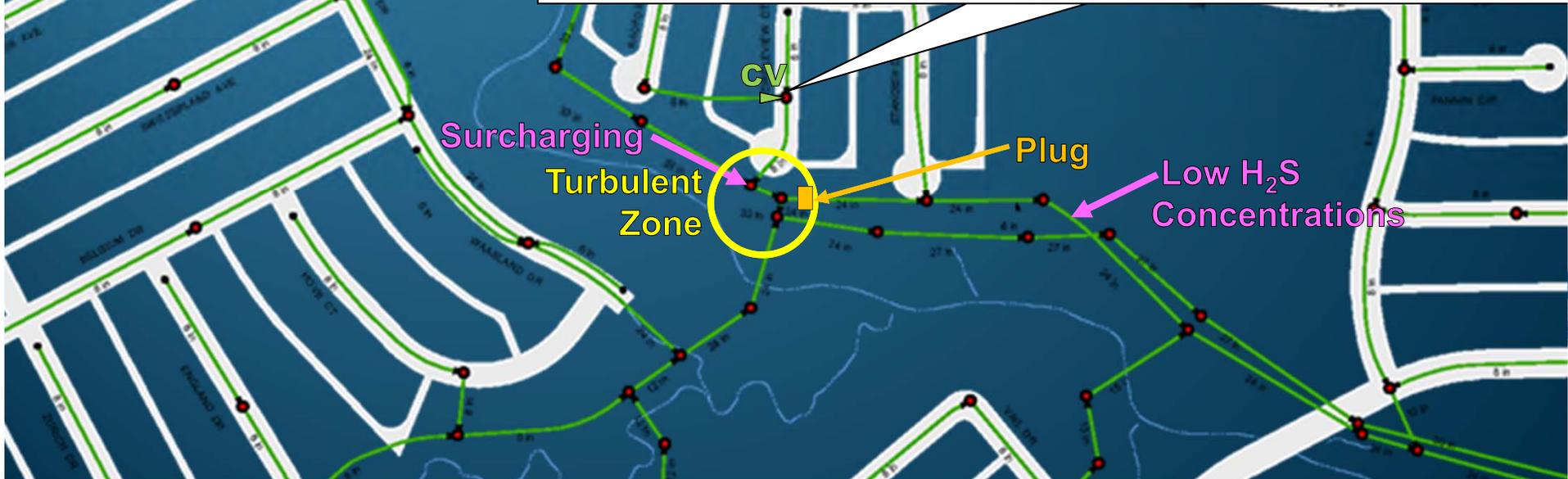
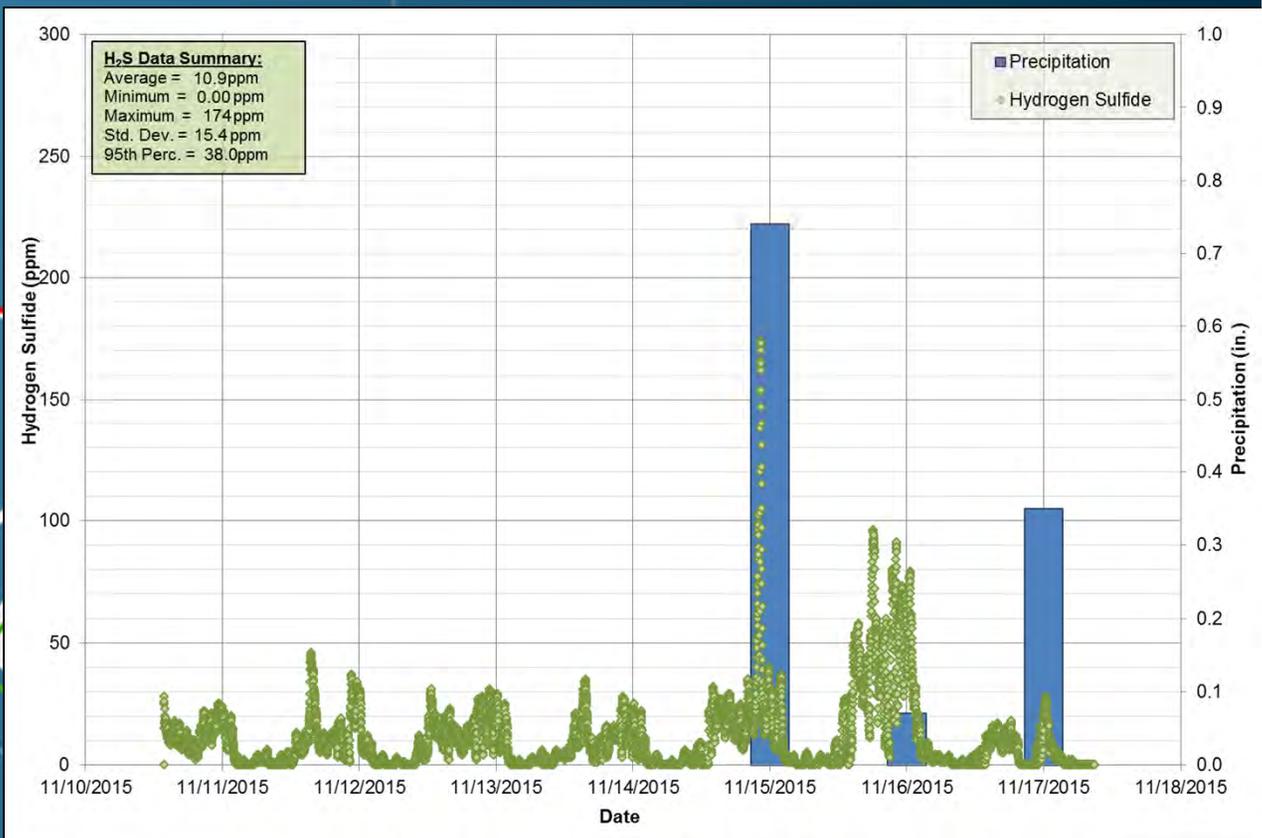
- **Continuous Monitoring** – Longer Durations, Variations/Trends
- **Liquids Sampling** – Evaluate Volatility & Potential Magnitude
- **Ambient Odors** – Perceived Odors, Other Observations



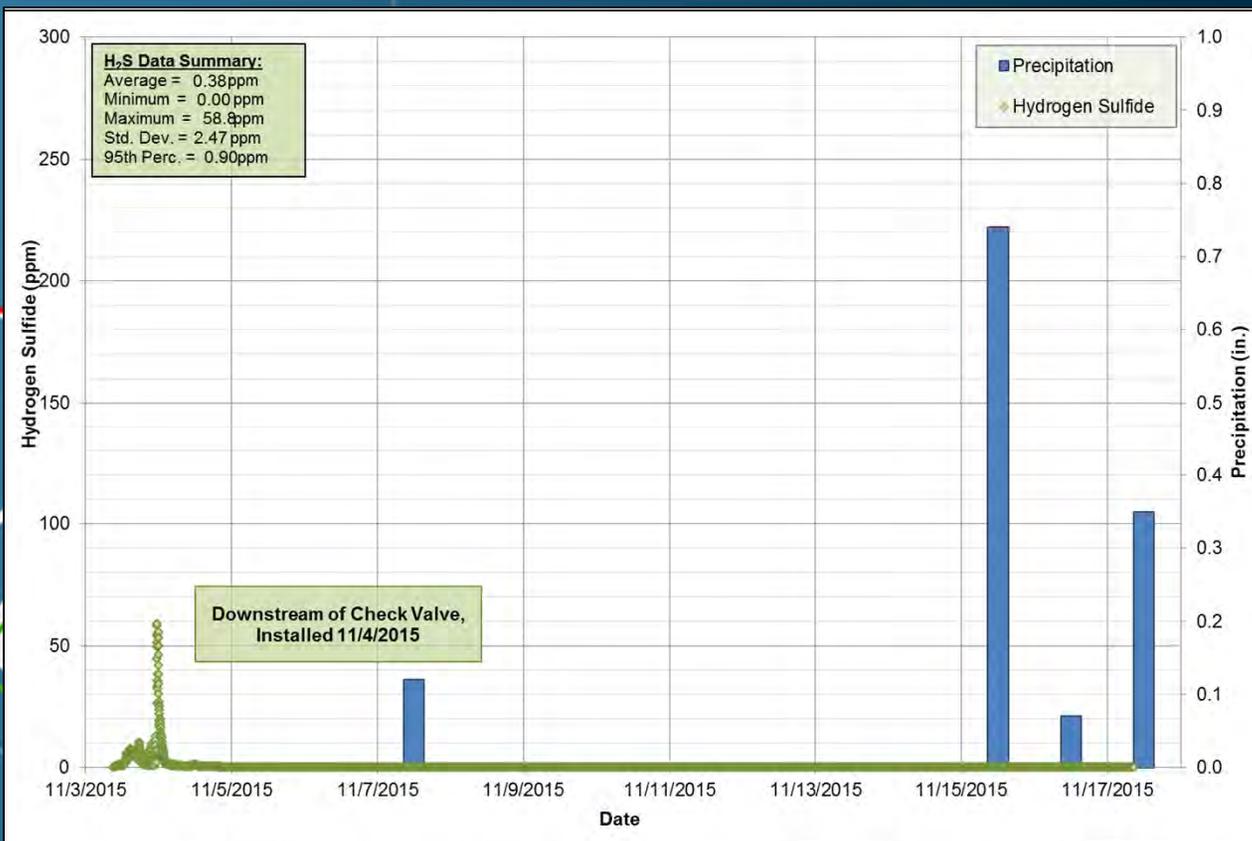
Sampling Dates: Oct. 27th - Nov. 24th



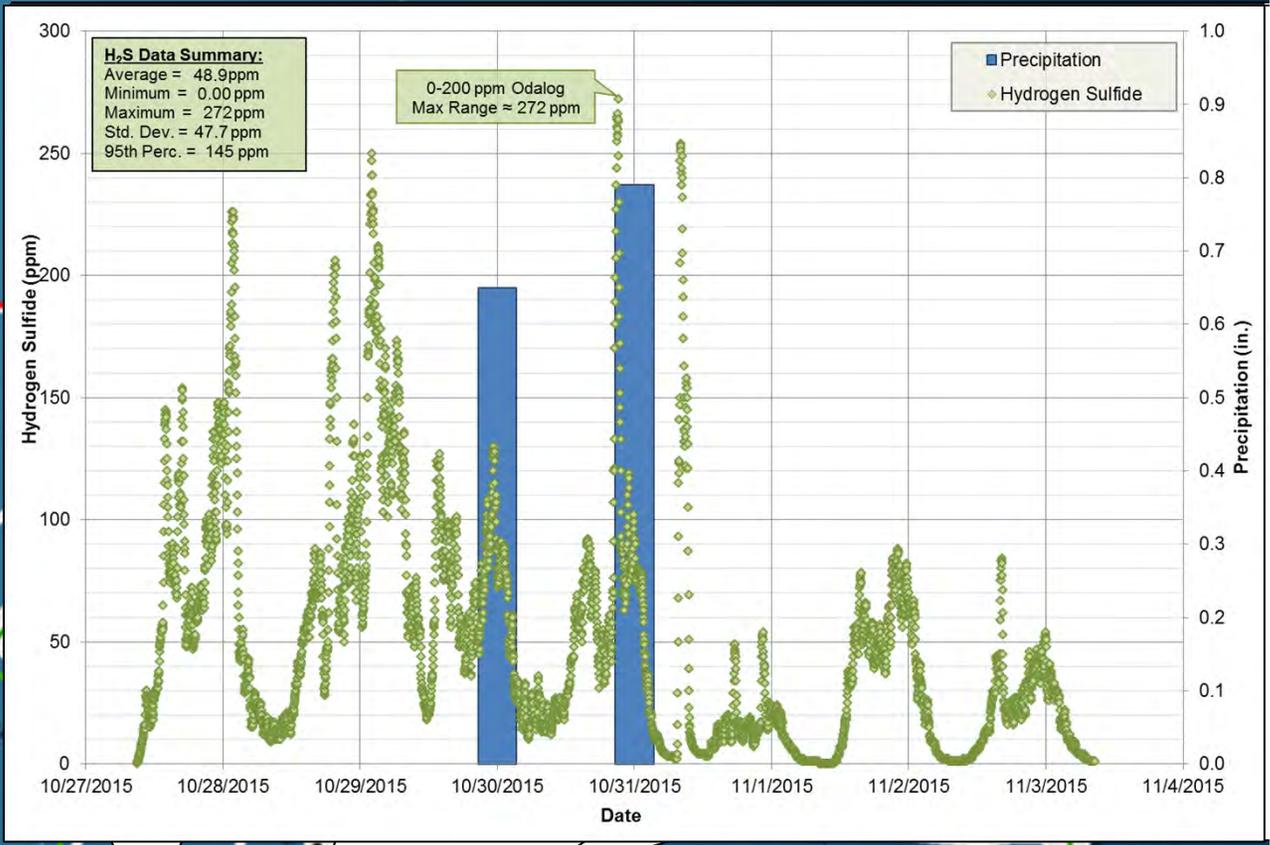
Results



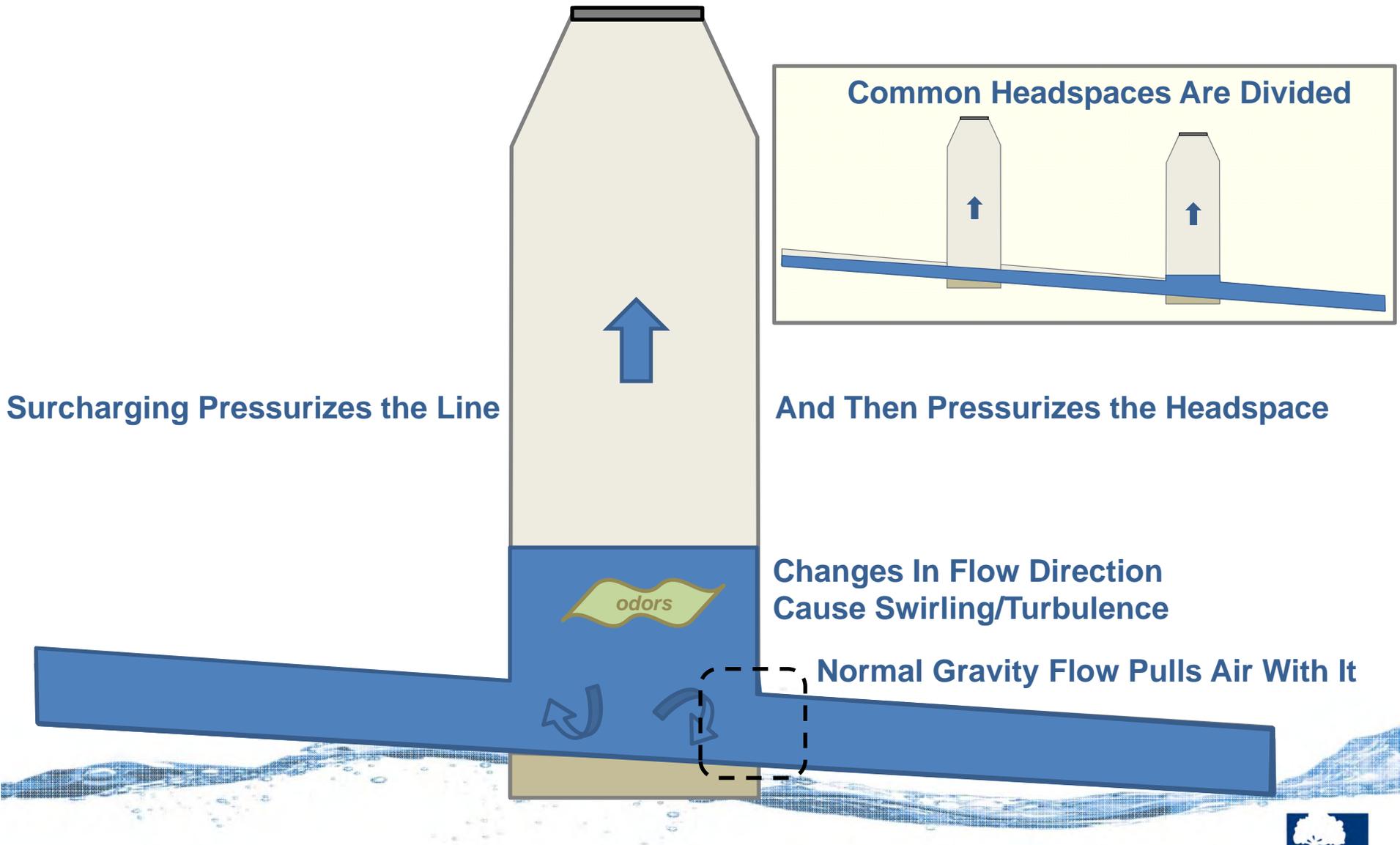
Results



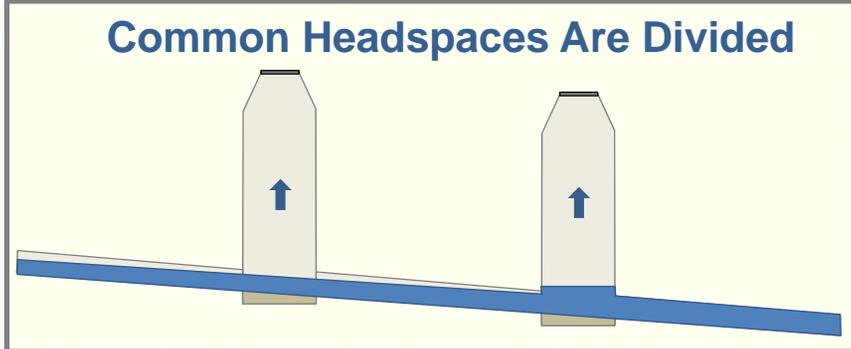
Results



Surcharging and Odors



Surcharging Pressurizes the Line



And Then Pressurizes the Headspace

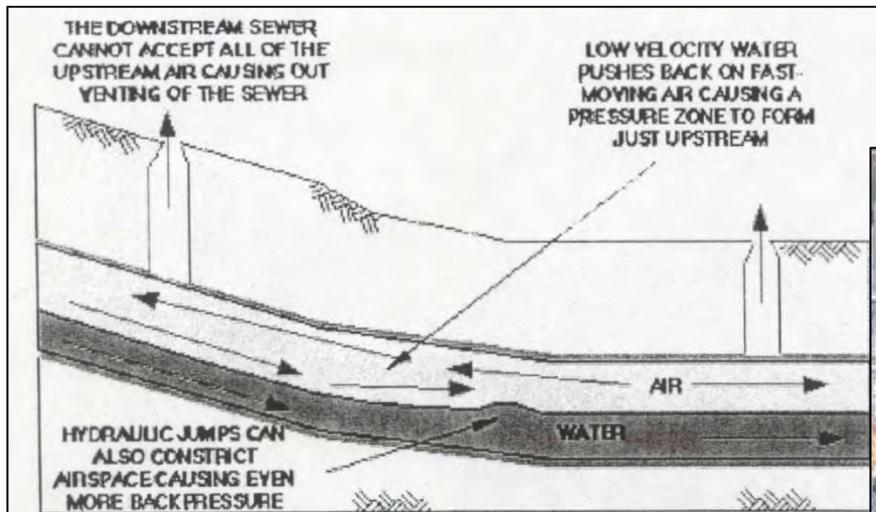
Changes In Flow Direction Cause Swirling/Turbulence

Normal Gravity Flow Pulls Air With It



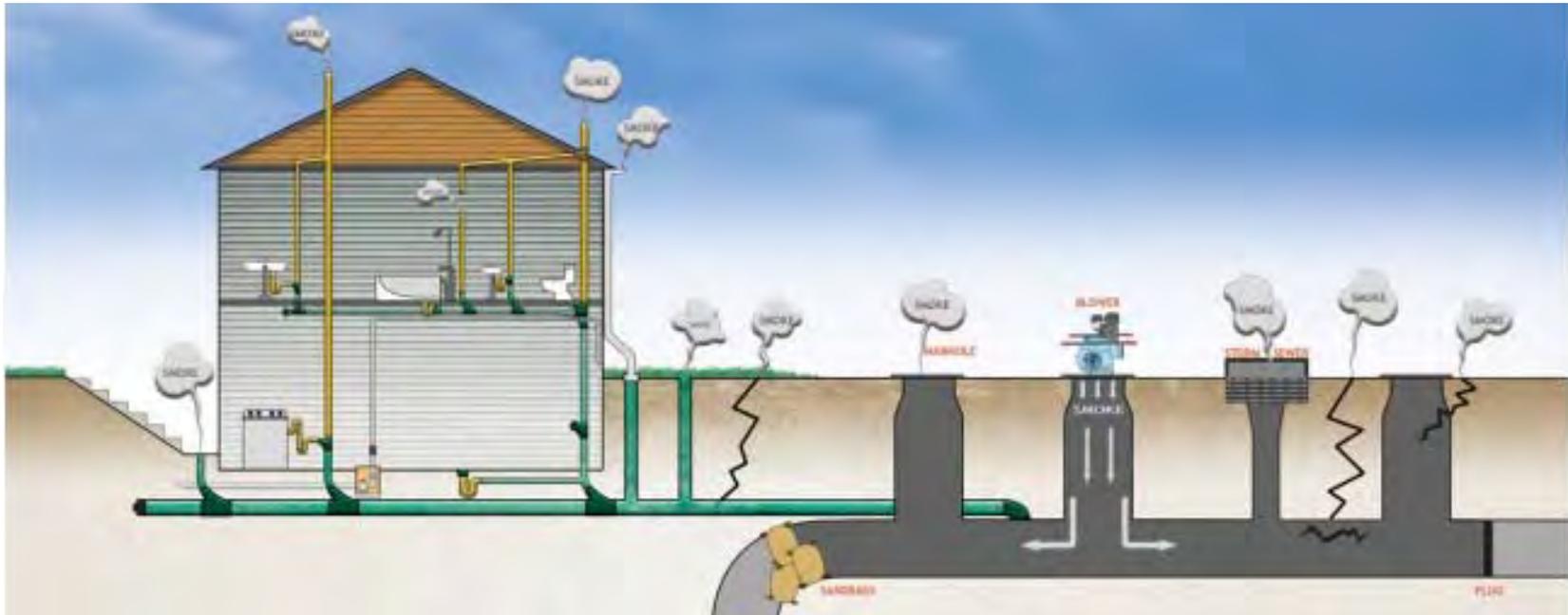
Control Options Explored

- Chemical Addition
 - NTMWD Feed at Preston Road Lift Station
- Forced Ventilation & Treatment



Smoke Testing

- Helps Identify and Confirm Problem Areas



Proposed Improvements

Estimated Construction Cost: \$ 800,000
Tentative Construction Timeline: 6-8 Months

Surcharging

Surcharging

Turbulent
Zone

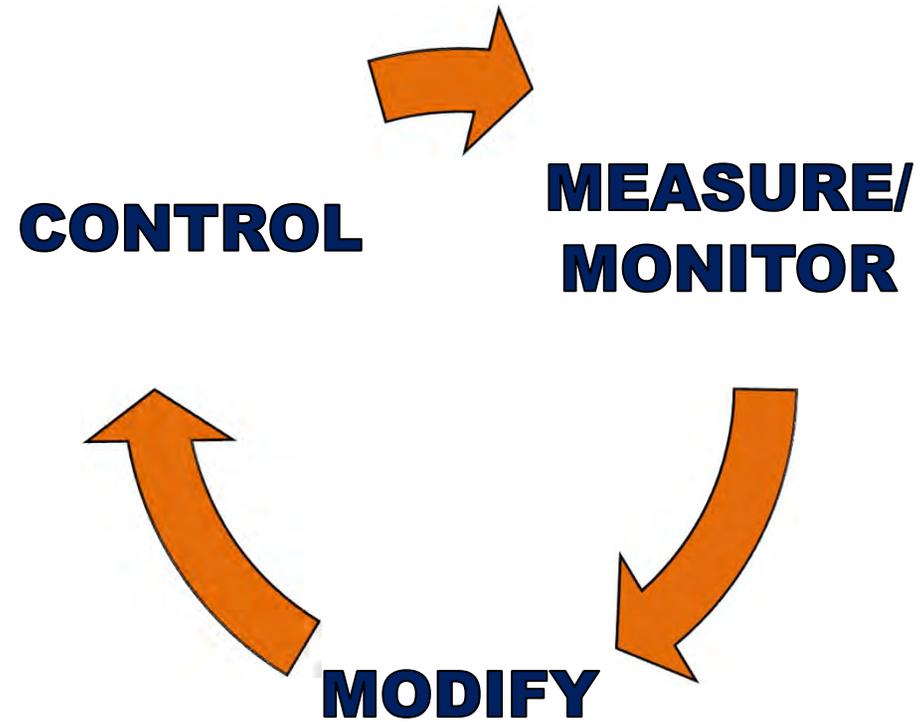


Summary

- Are There Odors?
 - *Yes, There Are Odors*
- Where And Why?
 - *Coming From Manholes & Vents*
 - *Due to Hydraulic Conditions*
- What We Did:
 - *Sampling & Observations...*
 - *...Identified Key Locations*
- What Is Being Done Next
 - *Smoke Testing*
 - *Pipeline Modifications to Improve Hydraulics*



What Next?



Questions & Answers

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