

# Northeast Texas City Force Main Project

City of Texas City

## Texas City, TX

- City in Galveston County
- Located along southwest shore of Galveston Bay
- Home to ~50,000 residents
- Third largest city in Galveston County



## Texas City, TX

- Developed into a petroleum refining and petrochemical manufacturing center
  - Provides a deepwater port to Gulf of Mexico
  - Need for wastewater service in the city
  - Population growth and development
  - Needed to support new and existing customers



Texas City Dike

# Texas City Force Main

- City of Texas City proposed 24,500 feet of 16-inch PVC or 20-inch HDPE force main
  - Estimated project cost: \$4 million



Madhu Kilambi P.E  
Principal/Senior PM



Doug Kneupper P.E  
City Engineer



# Texas City Force Main – Design



- Begins at FM 517
- Runs south along Paula Lane
- Crosses Dickenson Bayou
- Continues on N Humble Camp Road
- Ends north of Hwy 3 and 25<sup>th</sup> Ave



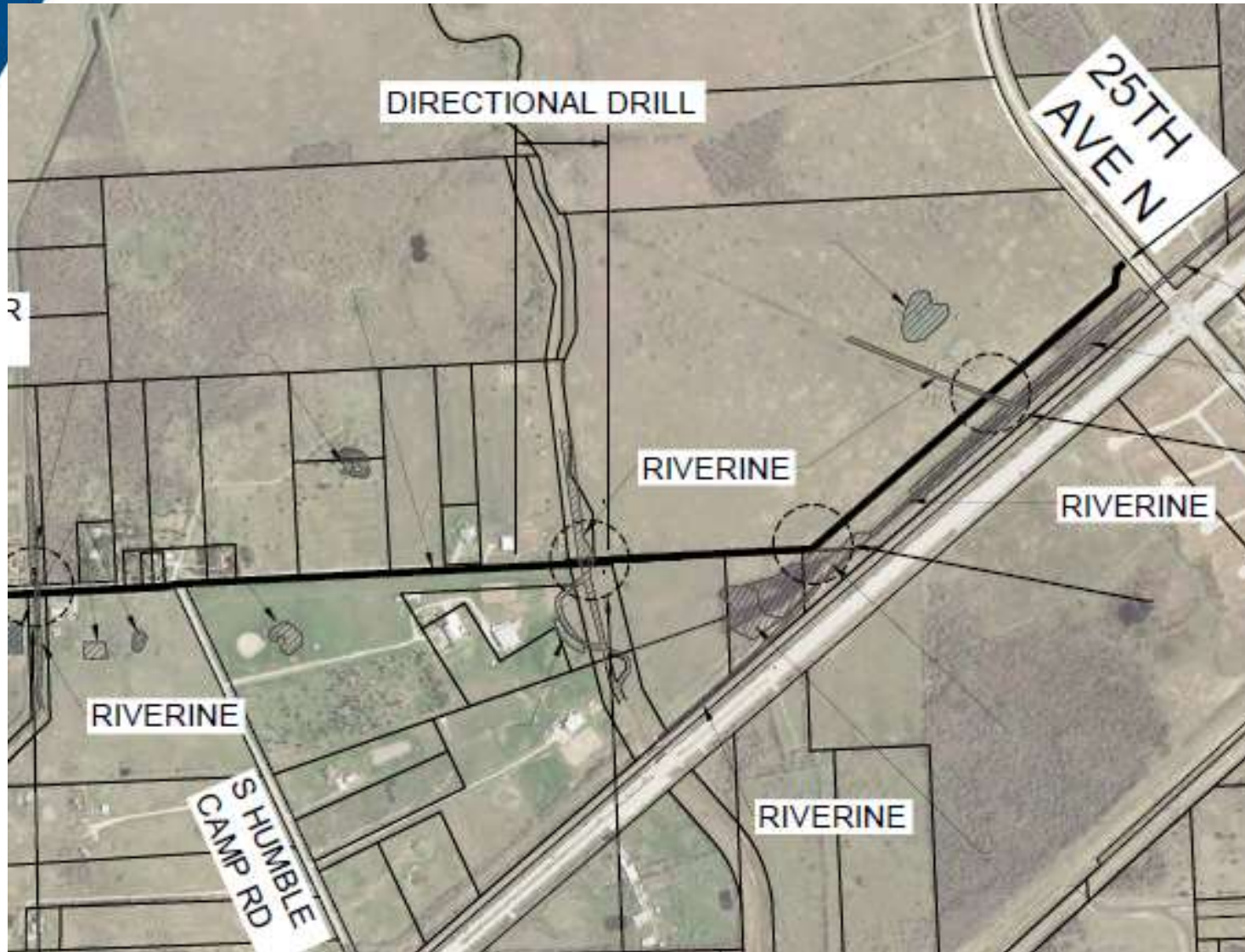


## HDD 1 – Dickinson Bayou



HDD 2- Dickinson Bayou Tributary Area

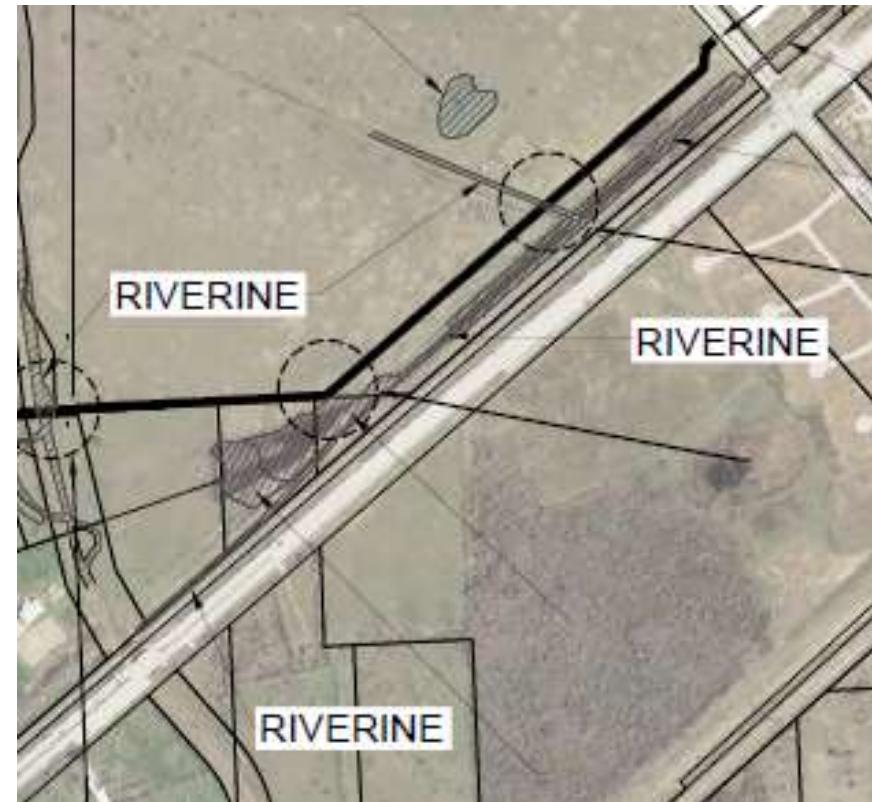




HDD 3 – Moses Bayou



## Trenchless (Steel Casing)



# Texas City Force Main - Bidding

5	16" Force Main by Open cut construction, all depths, Complete in Place, the Sum of:	LF	18,600
6	16" Force Main by Mandatory Trenchless construction (Auger, Bore & Jack, and HDD methods), all depths, Complete in Place, the Sum of:	LF	1,300
7	16" Force Main by Mandatory HDD construction for the Dickinson Bayou Crossing (project station 25+82 to station 49+09, all depths, Complete in Place, the Sum of:	LF	2,400
8	16" Force Main by Mandatory HDD construction, all depths, Complete in Place, the Sum of:	LF	2,100
9	24" Steel Casing, including 16" force main carrier pipe, by trenchless construction, all depths, Complete in Place, the Sum of:	LF	150

- Bid Date- November 15<sup>th</sup> 2018
- Pipe Materials
  - Fusible Polyvinyl Chloride Pipe (FPVC)
  - High-Density Polyethylene (HDPE)
  - Retrained Joint PVC/B&S PVC

# Texas City Force Main - Bidding

- Project awarded to Angel Brothers Construction
  - Selected FPVC for force main installation
  - Hired TCH Directional Drilling for all HDD sections





## Texas City – HDD Construction

- Began in April 2019
- Started from wetland area on north side (470 ft)
- Continued south across Dickinson Bayou (2,400 ft)
- Moses Bayou (1000ft)



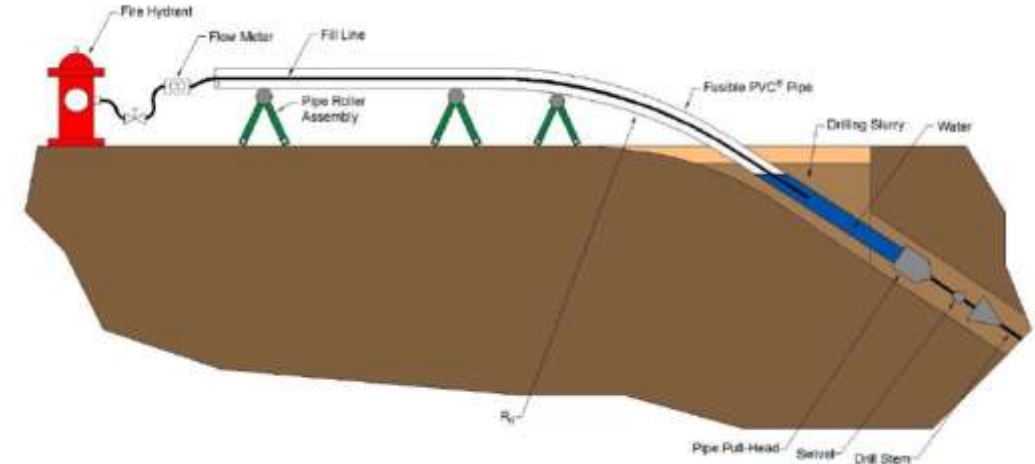
# Dickinson Bayou Drill (Layout)



- Pipe Layout- Single String
- Roller Insertion
- Fusion Quality Control



# Dickinson Bayou Drill (Pipe Side)



Ballasting



## Dickinson Bayou Drill (Rig Side)



D100 x 140 Vermeer Drill Rig



Compound Curve



# Dickinson Bayou Drill (Mud System)



# Construction Challenges

- Permitting
  - USACE
  - Galveston County
  - Levy Improvement District



Pipeline Crossings- (4" Exxon Mobil Pipeline, Kinder Morgan Tejas pipeline ,30" PCCP line along alignment)





# Conclusion/Summary