Bacterial Source Tracking (BST) on Tributaries of Trinity and Galveston Bays

Double Bayou Watershed Protection Plan Stakeholder Meeting Anahuac, Texas May 23, 2018







A PROGRAM OF THE TCEQ

### **Project Description**

- Project period: September 2017 May 2020
- Aims to better characterize sources of bacteria that are entering Trinity and Galveston Bays
- BST and surface water quality monitoring will be used to help guide decisions regarding most appropriate future management measures needed to reduce bacteria levels in the surrounding area





#### Project Area







## Surface Water Quality Monitoring (SWQM)

- Monthly sampling events from sites on Double Bayou, Cedar Bayou, Dickinson Bayou, Buffalo Bayou, and Clear Creek
- TWRI collects all SWQM samples besides the sample from Buffalo Bayou, which is collected by the Harris County Pollution Control Services (HCPCS) by boat due to safety and accessibility
- Data will be used for informational purposes rather than regulatory purposes and will therefore not be uploaded to the Texas Commission on Environment Quality's (TCEQ) Surface Water Quality Monitoring Information System (SWQMIS) Database





### Current SWQM Status

- First monthly samples were collected in March
- Samples are typically collected on the second Tuesday of each month (weather permitting) due to HCPCS' current sampling schedule
- TWRI collects samples then picks up final sample from Buffalo Bayou from the HCPCS Office before delivering all samples to the Soil and Aquatic Microbiology Laboratory (SAML) at Texas A&M University within 24 hours of collection (non-regulatory hold time)





### SWQM Measured Parameters

- ⊙ pH
- Dissolved oxygen (mg/L)
- $\odot$  Specific Conductance ( $\mu$ S/cm)
- Water Temperature (°C)
- ⊙ E. coli, mTEC (CFU/100 mL)







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# Data Update for the Double Bayou Watershed





Link http://www.harcresearch.org/DBViewer





## Rainfall

o Max

• 6.7 inches 10/26/2015

Spring and Fall heavy rain



## Stream Flow

 6,000 cf/s ~ 2.7 million gallons per minute

• **4.1** Olympic swimming pools per minute

 12/3/2016 to 12/6/2016
total of **3.85** inches of rainfall



# Water Quality



## Nutrient



