



Environmental Lab Design Update

***Presented by
Tiffany Malzahn
Environmental & Compliance Manager***

Meeting Date: May 22, 2023



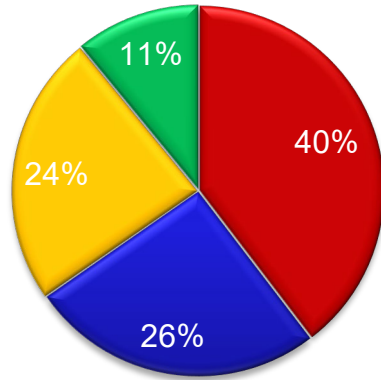
Genesis of Environmental Services Laboratory

- **Texas Clean Rivers Act (1991) mandates partnership between TCEQ and River Authorities on monitoring and managing water quality issues**
 - TCEQ retains all permitting and enforcement authorities
 - Objectives
 - Provide quality-assured data to the Commission for use in water quality decision making
 - Identify and evaluate water quality issues
 - Promote cooperative watershed planning
 - Inform and engage stakeholders
 - Maintain efficient use of public funds



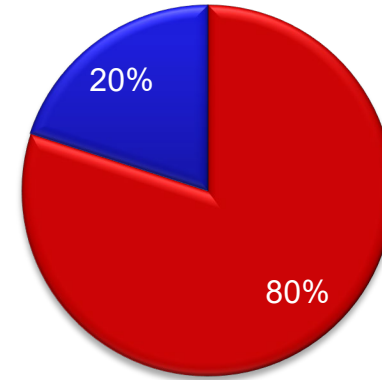
Basin Monitoring Statistics for Data Submitted to TCEQ

Water Quality Sample Generation



■ BRA ■ TCEQ ■ TSSWCB ■ Universities

Biological Data Generation



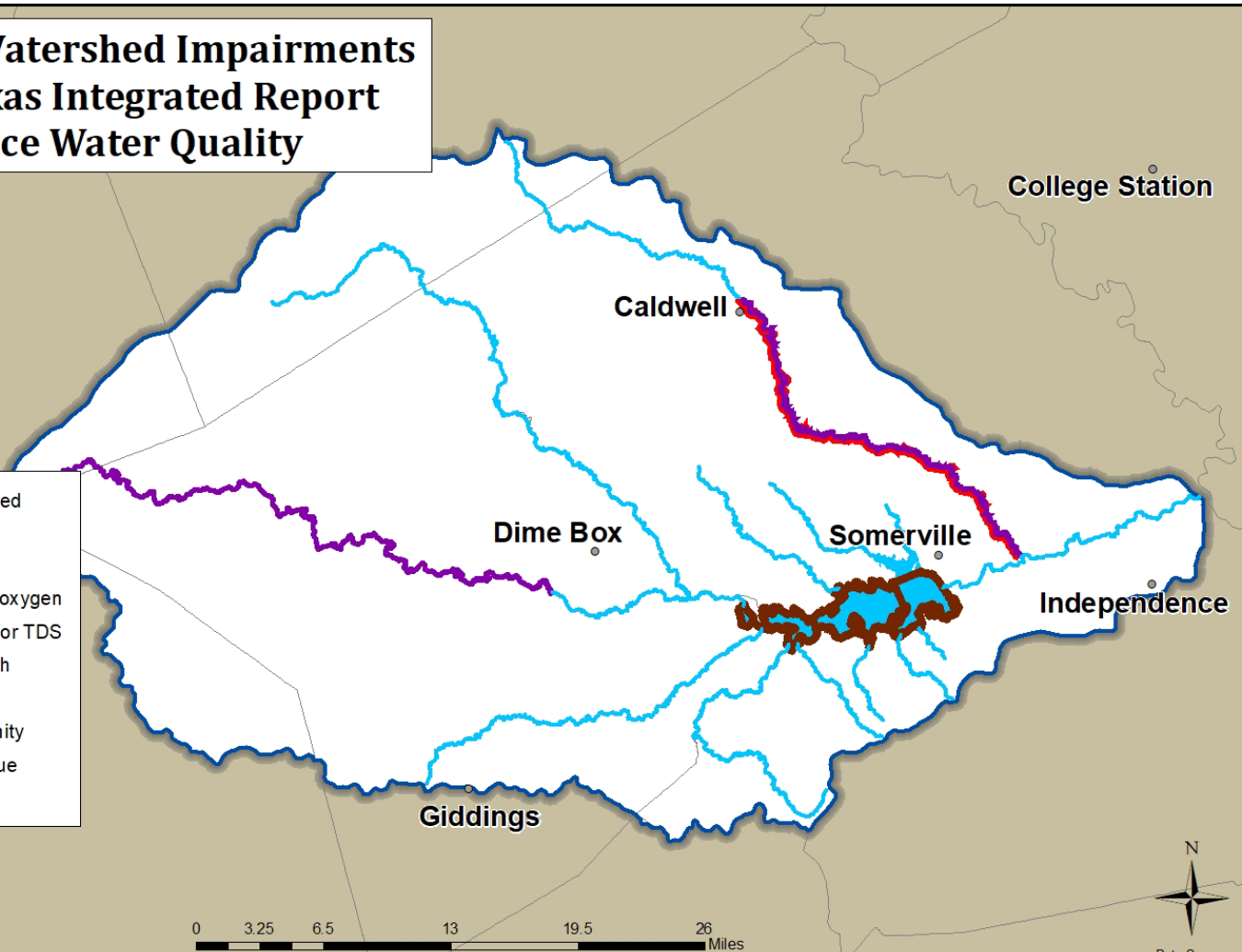
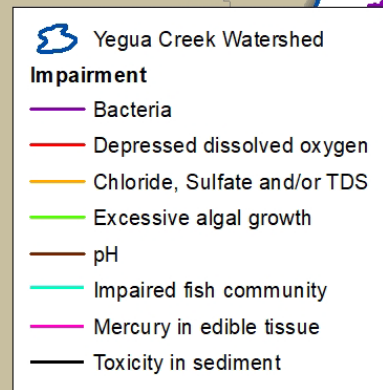
■ BRA ■ TCEQ ■ TSSWCB ■ Universities



Use of Data by TCEQ

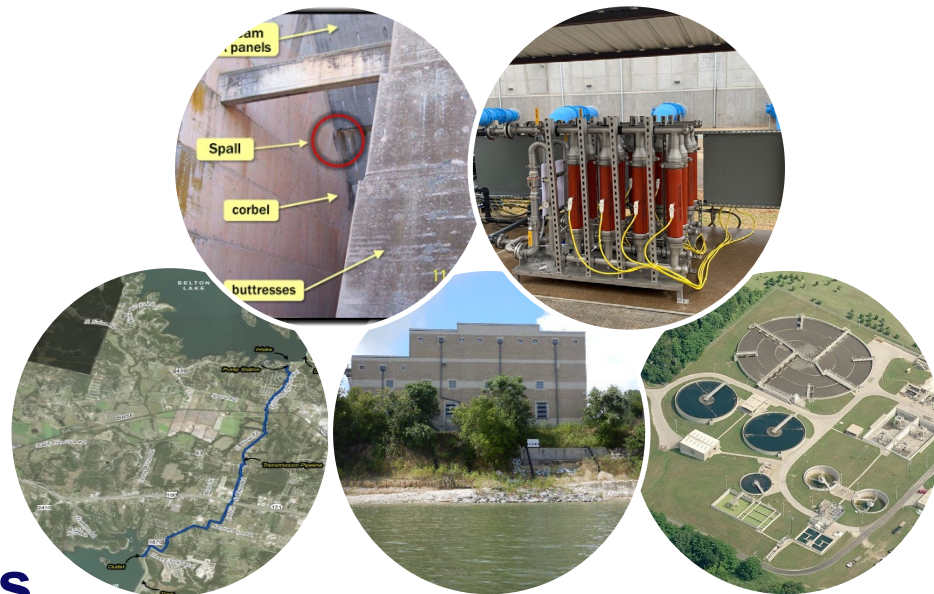
- **Meet state's requirements for surface water quality monitoring under federal Clean Water Act**
- **Identification of impairments and concerns**
- **Developing surface water quality standards**
- **TPDES permit requirements, investigations, and enforcement**
- **401 Certifications**
- **Watershed Action Planning**
- **Develop statewide guidance documents**
- **Determine technical assistance and research grant recipients**

Yegua Creek Watershed Impairments from the Texas Integrated Report of Surface Water Quality



Other Uses of BRA Generated Data

- **Other BRA Departments**
- **Permitting to support BRA projects**
- **Customers**
- **Municipalities**
- **Engineering Firms**
- **Universities**



Current Laboratory

- **Designed in 2000, Constructed in 2001-2002**
 - Little input from Environmental Services
 - Undersized and poorly outfitted from start
 - 690 SF insufficient to support workloads at that time
- **Three independent reviews have cited deficiencies in:**
 - No room for new equipment or to increase number of existing analyses
 - Not enough room to comply with manufacturers recommended space requirements for equipment
 - Insufficient on-site storage space
 - No workshop space
 - Environmental controls inadequate
 - Industry standards for safety



Feasibility Study

- Started in 2019
- Completed in 2021
- Evaluated 6 Scenarios
- BOD Selected to move forward with designing a lab and boat storage/workshop building on CO property adjacent to





Design Phase

- **Began in February 2022**
- **90% Design Complete**
- **On budget**
- **RFB for construction scheduled for this summer**
- **Laboratory Building**
 - 10,880 SF with approximately 3,500 SF of space for future growth
 - Engineered metal building with stone and masonry veneer
- **Boat storage/workshop**
 - 6,090 SF, pre-engineered metal building



Exterior Schematic

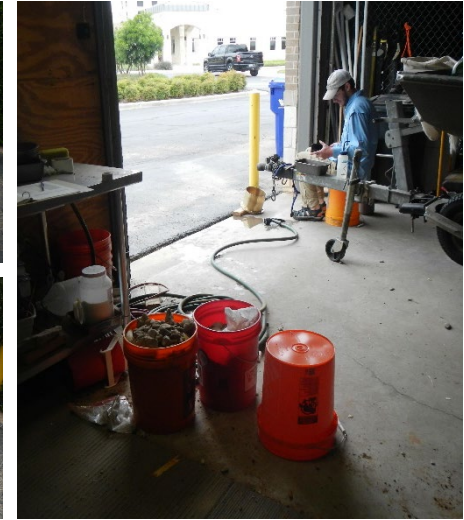


Features of Laboratory

- **Roof top screen walls**
- **Low VOC materials**
- **Chemical resistant flooring and benchtops**
- **Deionized water system**
- **Laboratory exhaust system**
 - **Fume hoods, canopy hoods, snorkels**
- **Gas distribution system**
- **Emergency equipment**
- **Chemical waste neutralization system**
- **HVAC**
 - **Zoned**
 - **60% humidity design maximum**
- **Balance tables**

Features of Boat Storage/Workshop

- **Enclosed storage for four boats**
- **Covered storage for four trucks**
- **Climate controlled workshop**
- **Sediment analysis laboratory**





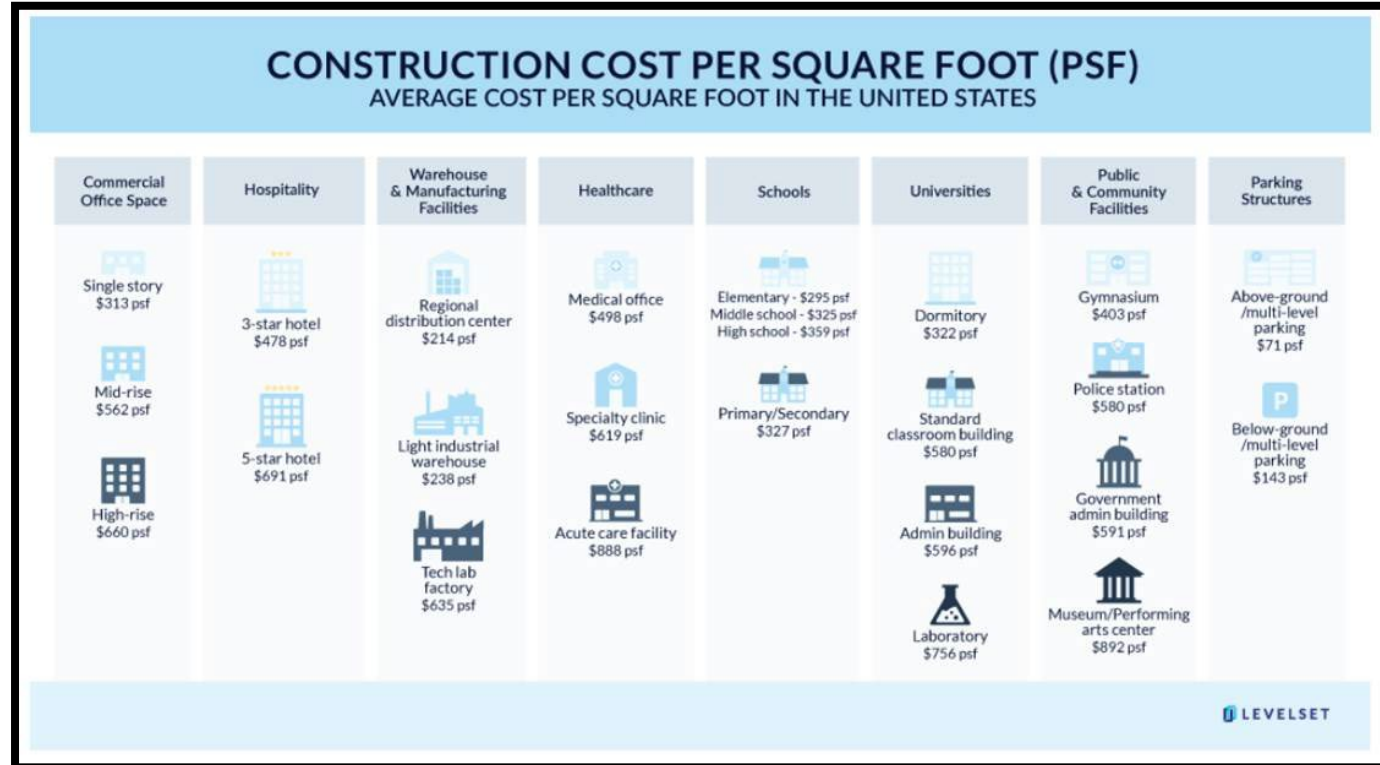
Opinion of Probable Construction Cost (OPCC)

- **Class 1 Estimate – \$9,858,610**
- **Accuracy range of +15% to -10%**
- **Contingency included in OPCC (5%) - \$450,000**
- **547 Individual items included**



Typical Industry Unit Costs

(updated in November 2022)



Next Steps

- **Advertise RFB – summer**
- **BOD authorization of construction contract – Fall**
- **Begin construction - winter**





**Brazos
River
Authority**