Attoyac Bayou Watershed Protection Plan Implementation

Clean Rivers Program Steering Committee

Amy Uyen Truong
Texas Water Resources Institute

July 11, 2017

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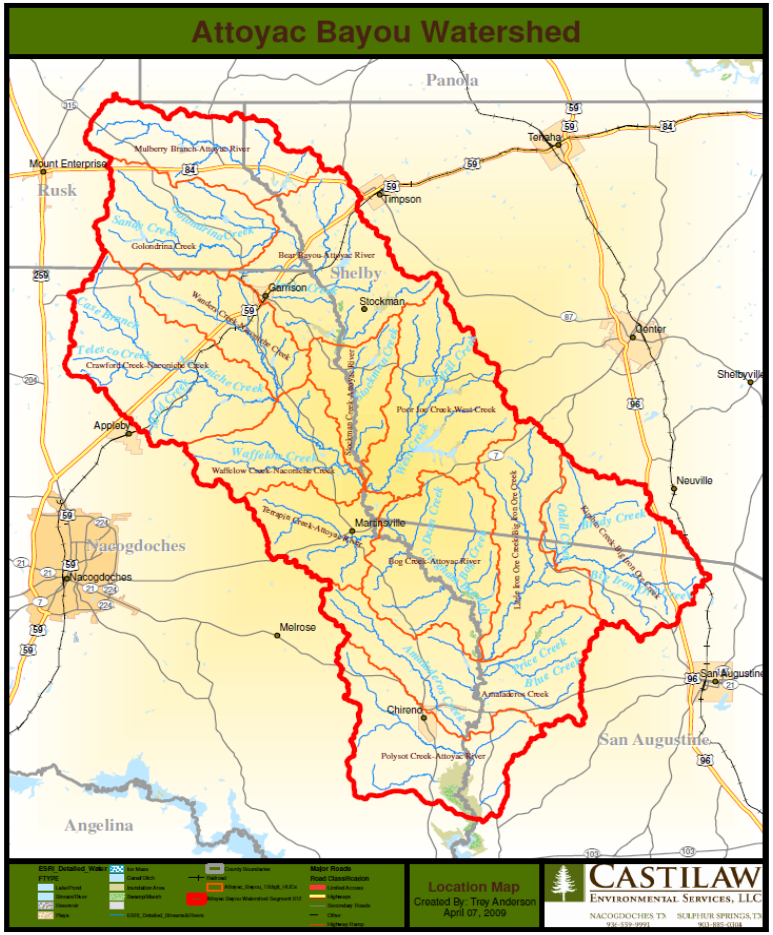
Attoyac Bayou Watershed Protection Plan Implementation

- Extends 81 miles through Rusk, Nacogdoches, San Augustine and Shelby Counties and flows into Sam Rayburn Reservoir.
- Currently listed on the Texas 303(d) Impaired Water Body List due to elevated levels of bacteria.
- The Watershed Protection Plan was accepted by the Environmental Protection Agency (EPA) in 2015.



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Implementation Projects

1. Coordinate ***facilitation of implementation and monitoring*** of the Attoyac Bayou WPP and monitor implementation effectiveness.

2. Inspect, ***repair and replace failing OSSFs*** or non-existent systems to reduce overall bacterial loadings into the watershed.

3. Provide technical and financial assistance to producers in the watershed for the development and implementation of ***Water Quality Management Plans (WQMPs)***.

Coordinating and Monitoring WPP Implementation Effectiveness in the Attoyac Bayou

Goals:

- Conduct stakeholder meetings to keep stakeholders engaged and bring input into future implementation activities.
  - Ensure successful implementation through continued Stakeholder Engagement and Coordination.

- Evaluate WPP implementation milestones.
  - Monitor water quality in the watershed to show BMP implementation effectiveness and general water quality changes.

- Conduct Education and Outreach activities in and around the watershed.

Education and Outreach Opportunities

Texas Watershed Steward Workshop

Tuesday, November 7, 2017

@ 1-5pm

Nacogdoches County Exposition & Civic Center

3805 NW Stallings Dr.

Nacogdoches, TX 75964

Homeowner Septic System Maintenance Workshop

September 2017

Pending

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OSSF Remediation and Replacement Program

Goals:

- Address high *E. coli* loadings through OSSF repair and replacements.
- Promote the need and environmental benefits of proper OSSF function in the watershed.

Contact:
Ken Awtrey
Pineywoods Resource Conservation & Development, Inc.
(936) 568-0414

Measures of Success:

- On-site sewage facilities (OSSF) inspection, repair, and replacement in the Attoyac Bayou.
- Provide technical assistance to inspect, design, repair, install, and maintain failing or non-existent OSSFs.

Implement Agricultural Nonpoint Source Components of the WPP

Goal:

- Provide technical assistance to agricultural producers to produce Water Quality Management Plans (WQMPs) and implementation of Best Management Practices (BMPs).

- Reduce potential pollutant loads of streams from Nonpoint source pollution from Agricultural operations.

- Provide education programs to increase stakeholder and citizen knowledge on water quality in the watershed.

Contact Info for WQMPs:

Chris Crenshaw
District Technician
936-564-5891 Ext 121

Nacogdoches Soil & Water Conservation District
1122 N. University Dr. Box B
Nacogdoches, TX 75961

Chris.Crenshaw@tx.nacdnet.net

Attoyac Bayou Watershed Partnership

Join the conversation!

Stakeholder Meeting

Date: July 13, 2017

From: 6-8pm

Nacogdoches County Farm Bureau Conference Facility

2302 NW Stallings Dr.

Nacogdoches, TX

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Thank you!

Questions?

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Arroyac Bayou
WATERSHED PARTNERSHIP

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This project is funded through a section 319(h) Clean Water Act grant from the Texas Commission on Environmental Quality and Texas State Soil and Water Conservation Board and through the U.S. Environmental Protection Agency.

Proposed Projects:

Water Quality and Pollutant Loading Characterizations of the Angelina River above Sam Rayburn and La Nana Bayou Watersheds

Upper Neches Basin Clean Rivers Program (CRP) Steering Committee Meeting
July 11, 2017

Kirby Peddicord
Texas AgriLife Research, Texas Water Resources Institute
kirby.peddicord@ag.tamu.edu

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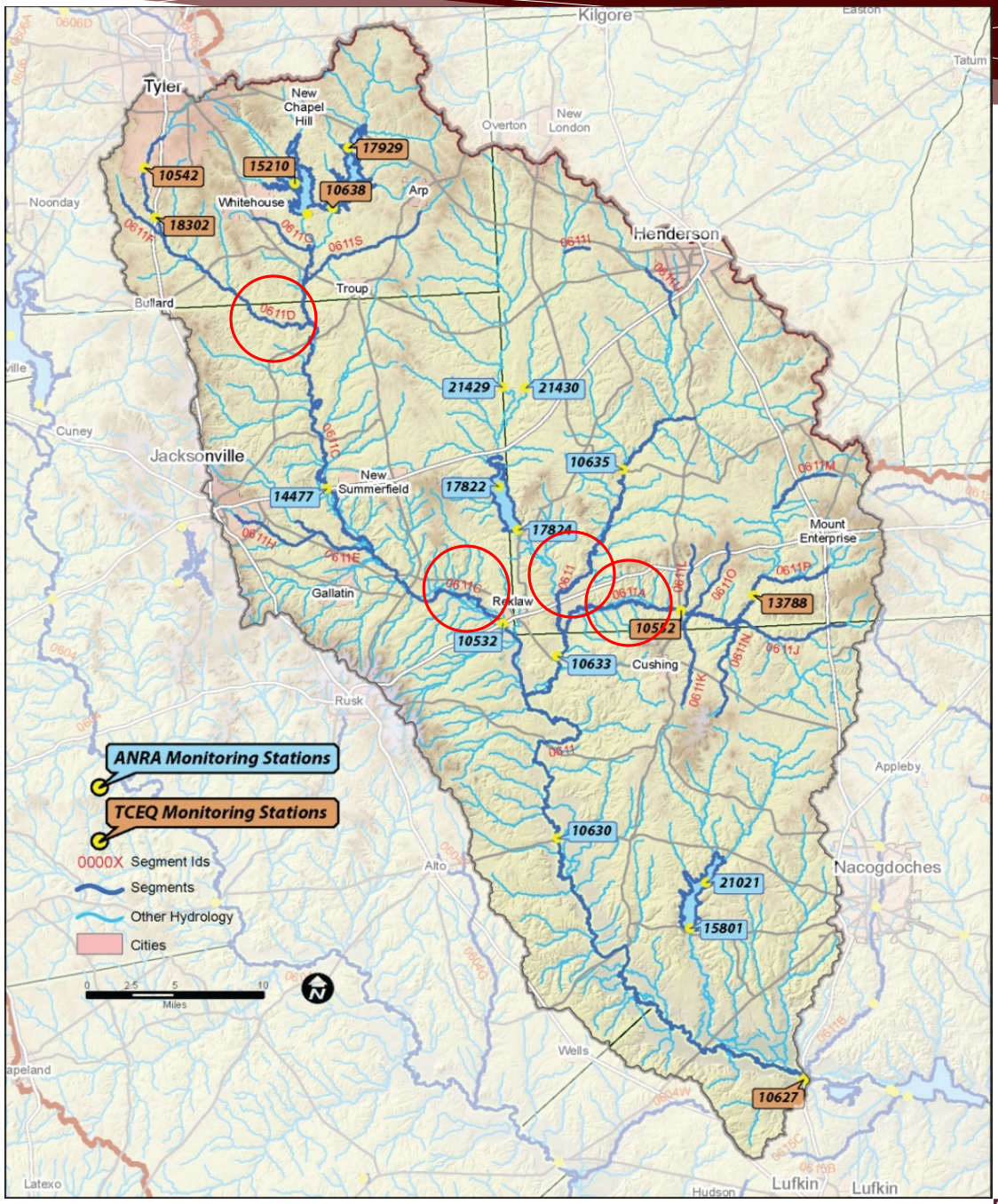
Angelina River above Sam Rayburn Impairment

- Listed as impaired on the 2014 Texas 303(d) List for not meeting primary contact recreation bacteria standard in four waterbodies in the watershed
- Current standard for *E. coli* is a geometric mean of 126 CFU/100 mL and a single sample limit of 394 CFU/100 mL
- Screening level concerns also exist for depressed dissolved oxygen, elevated nitrate, ammonia, and total phosphorous



Upper Angelina River Watershed (Source: ANRA 2015 Basin Highlights Report)

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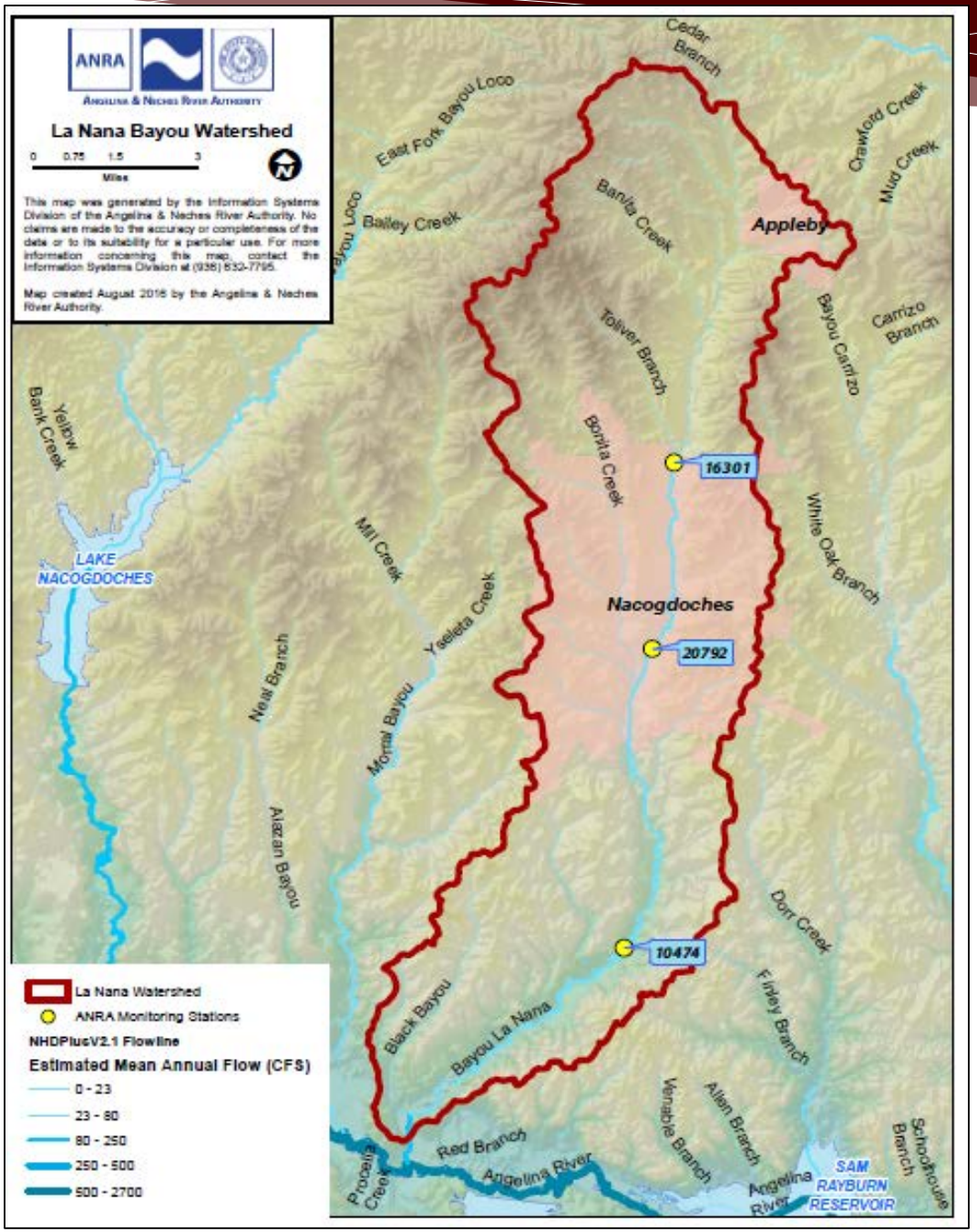
La Nana Bayou Impairment

- Listed as impaired on the 2014 Texas 303(d) List for not meeting primary contact recreation bacteria standard; divided into three assessment units (AUs) and all three impaired
- Screening level concerns also exist for elevated ammonia-nitrogen, nitrate-nitrogen, and total phosphorous in the downstream portion of the bayou



La Nana Bayou Watershed (Source: ANRA)

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Significance of Impairments

- *E. coli* data collected indicate that levels in these watersheds are higher than state standards
- Actions must be taken to improve water quality to meet state standards or regulatory measures are likely
- Options include:
  - Watershed Protection Plans (WPPs)
  - Total Maximum Daily Loads (TMDLs)

Proposed Approaches

- Collect additional data in the Angelina River and La Nana Bayou watersheds
  - More accurately characterize the watersheds' hydrology and present *E. coli* levels
  - Assess the current uses of the waterbodies and develop plans to reduce their *E. coli* levels
    - Angelina River: Recreational Use Attainability Analyses (RUAAs) conducted in 2014

Monitoring: Angelina River above Sam Rayburn

- Currently: ANRA and TCEQ monitor 17 stations quarterly
  - 6 on the Angelina River or the East Fork of the river
  - 7 on tributaries
  - 4 in lakes

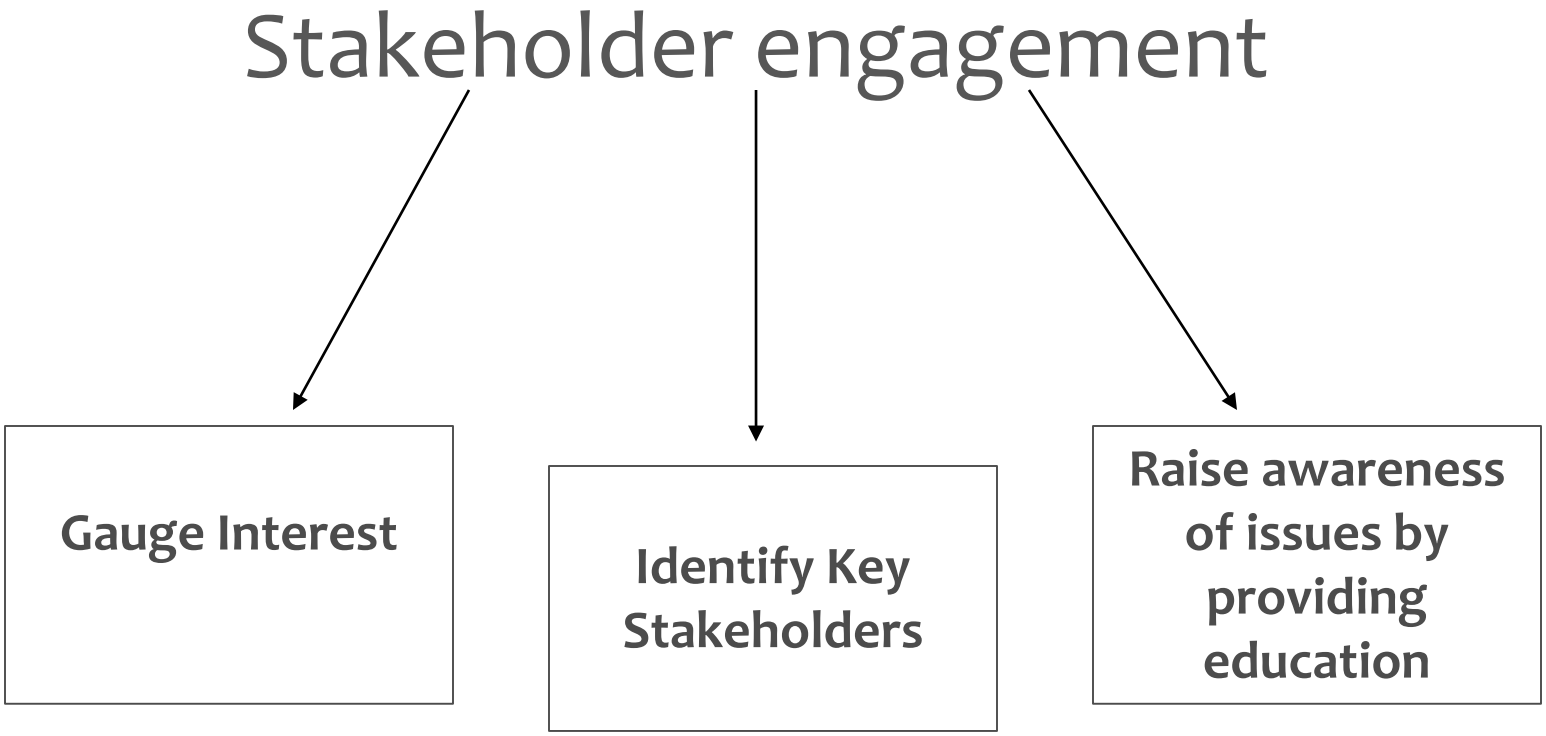
- Proposed: Supplemental monthly monitoring
  - Select up to 10 sites for additional monitoring for 1 year
  - Capture temporal variability in flow and pollutant loading conditions
  - Better define water quality along the Angelina River
  - Additionally, aggregate and analyze existing data regarding existing pollutant loadings

Monitoring: La Nana Bayou

- Currently:
  - Quarterly monitoring at the 3 CRP sites (1 per AU)

- Proposed:
  - Quarterly monitoring sites switch to monthly monitoring for 1 year
  - Intensive sampling regime will identify *E. coli* loading problem areas
    - One-time intensive sampling at up to 25 locations to identify where *E. coli* loading is occurring
    - Evaluate data to identify reaches were rapid *E. coli* increases occur
    - Sample reaches with rapid *E. coli* increases at a refined scale
      - One-time sampling event of up to 75 additional sites
    - Data is then cross-referenced with watershed characterization findings

Additional Actions



Additional Actions

- Load Duration Curves (LDCs)
- Utilization of Geographic Information System (GIS)
  - Identify and spatially depict potential causes and sources of pollutant contributors
- Spatially Explicit Load Enrichment Calculation Tool (SELECT) Modeling (Angelina River only)
- Eventually develop watershed-based plans for both watersheds

Who's involved?

- Texas Water Resources Institute (TWRI)
- Texas A&M AgriLife Research & Extension
- Angelina-Neches River Authority (ANRA)

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Funding & Project Timelines

- Angelina River above Sam Rayburn Watershed contract dates: **May 1, 2017 – April 30, 2019**
  - Funding secured

- La Nana Bayou Watershed project dates: **Upon signature approval of both parties – August 31, 2019**
  - Contract under negotiation

Thanks for your time!

Questions?

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