



TIAER
TEXAS INSTITUTE FOR APPLIED ENVIRONMENTAL RESEARCH
Tarleton State University
A member of The Texas A&M University System

Rocky Creek

Recreational Use Attainability Analysis Introduction

Texas Institute for Applied Environmental Research
Stephenville, Texas

February 21, 2017



Project Partners

- Texas Commission on Environmental Quality (TCEQ)
- Texas Water Resources Institute (TWRI)
- Texas Institute for Applied Environmental Research (TIAER)



Who is a Stakeholder?

- Landowners
- Citizens
- Citizen Groups
- Local Representatives
- Local Governmental entities
 - Cities
 - Counties
- Non-Governmental Organizations



Importance of Being a Stakeholder

- Stakeholders:
 - Make and implement decisions
 - Are affected by the decisions made
 - Participate in the implementation planning process



Why we are here

- Texas 303 (d) List of Impaired Water bodies
 - Developed by TCEQ to summarize the condition of the state's surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife, and specific pollutants and their possible sources



Bacteria Impairment

- Rocky Creek is not meeting the water quality standard for primary contact recreation
 - Due to elevated levels of bacteria, *E. coli*
 - Requires action to meet the standards that are set by the State of Texas and EPA
 - Geometric mean should not exceed 126 cfu/ 100ml











Impaired Stream Segments

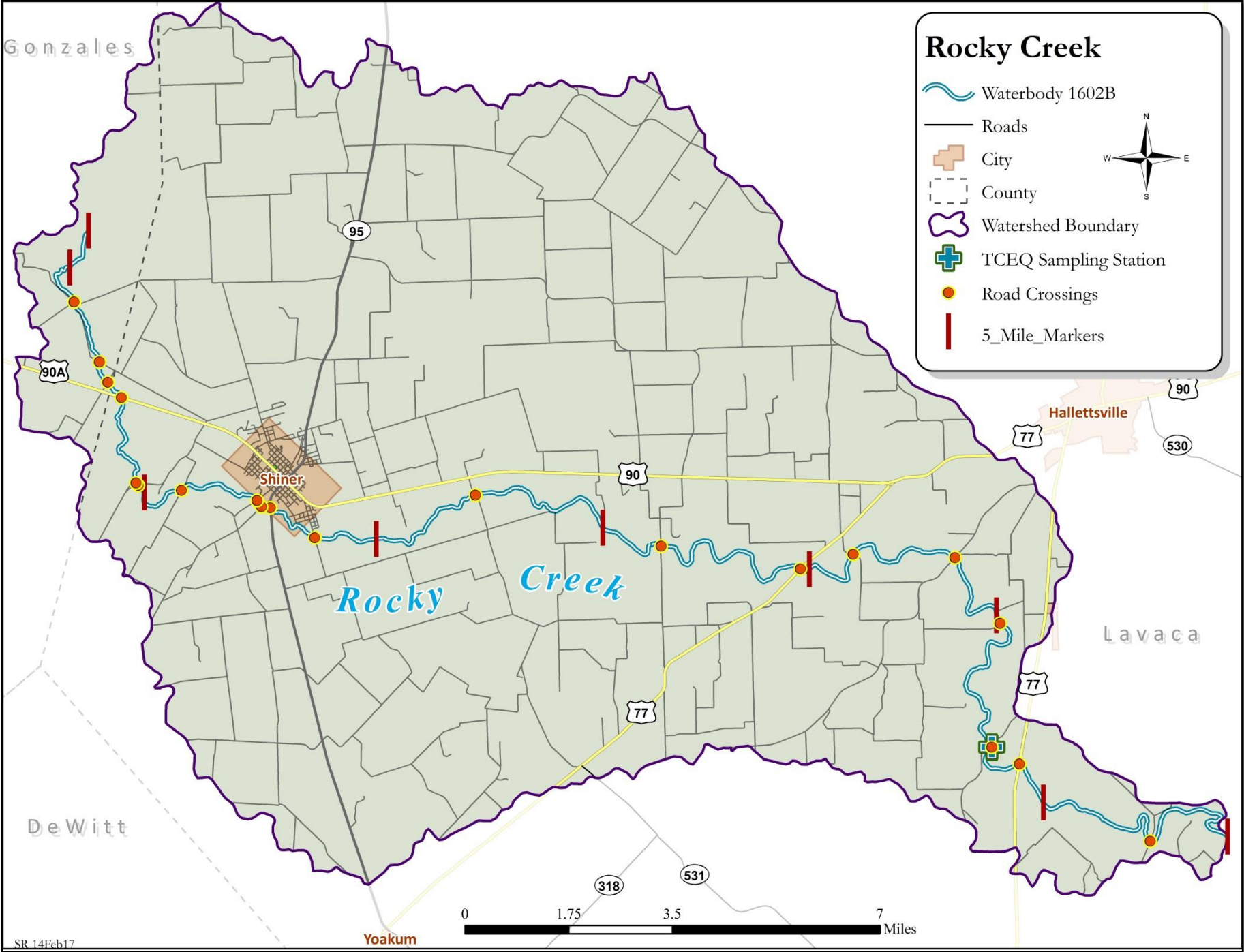
- Rocky Creek (1602B)
 - 2014 Texas Water Quality 303(d) List
 - Bacteria
 - Current Geometric mean = 222 cfu/ 100mL



Gonzales

Rocky Creek

-  Waterbody 1602B
-  Roads
-  City
-  County
-  Watershed Boundary
-  TCEQ Sampling Station
-  Road Crossings
-  5_Mile_Markers



Rocky Creek

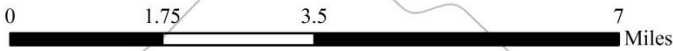
Shiner

Hallettsville

Lavaca

DeWitt

Yoakum



TCEQ Water Quality Monitoring Stations

Site Description

Rocky Creek immediately upstream of the Lavaca River confluence on CR 387 and approximately 5.3 miles south of Hallettsville on US 77 – TCEQ 18190



RUAA

- One method of removing Rocky Creek from the impaired list for bacteria
 - Assess if the recreational standard is appropriate
 - Recreational use attainability analysis (RUAA)



Purpose of RUAA

- To determine if primary contact recreation is the correct use or if another recreational use category may be more appropriate



RUAA Use Categories

- **Primary Contact Recreation** – 126 cfu/100 mL
 - Activities that are presumed to involve a significant risk of ingestion of water
 - Such activities are – wading by children, swimming, water skiing, diving, tubing, surfing, and whitewater activities: kayaking, canoeing, and rafting.
- **Secondary Contact Recreation 1** – 630 cfu/100 mL
 - Activities that commonly occur but have limited body contact incidental to shoreline activity
 - Wading by adults, fishing, canoeing
 - Activities are presumed to pose a less significant risk of water ingestion than primary contact recreation but more than secondary contact recreation 2.



RUAA Use Categories

- **Secondary Contact Recreation 2 – 1030 cfu/100 mL**
 - These activities occur less frequently than secondary contact recreation 1 due to physical characteristics of the waterbody or limited public access.
- **Noncontact Recreation – 2060 cfu/100 mL**
 - Activities that do not involve a significant risk of water ingestion, such as those with limited body contact incidental to shoreline activity, including birding, hiking, and biking



RUAA Components

- **Historical Information Review** – to document past recreational uses
- **Interviews** – to obtain feedback on current and past recreational uses from stakeholders
- **Field Surveys** – to document current waterbody conditions and uses



RUAA Components

Historical Information Review

- November 28, 1975 – Present
 - Any documentation of recreational use of Rocky Creek
 - Newspaper clippings or other publications
 - Historical or museum records
 - Personal pictures or letters



RUAA Components

Stakeholder Interviews

- Document use of the waterbody from individuals
 - Conducted during field surveys (if individuals are encountered)
 - Streamside landowners
 - Local residents
 - Other users
 - Interviews can be anonymous and conducted by phone, USPS mail, or email.



RUAA Components

Field Surveys

- Goal: 3 sites for every 5 miles
 - At each site:
 - 300 meter reach traversed
 - Document
 - Waterbody characteristics that may promote or hinder recreational use
 - Observations of direct use or signs of recreational use
 - Interviews with individuals



RUAA Field Surveys

- 2 Field Surveys Conducted
 - Base Flow Conditions
 1. Sustained typical dry warm-weather flow
 2. Between rainfall events
 - Periods of Likely Use (May – Sept)

Air Temperature > 70°F

 1. Weekends
 2. Holidays
 3. Summer



RUAA Field Surveys

- Field Data Sheets:
 - Waterbody characteristics
 - Current weather conditions & daily conditions for the previous month
 - Riparian zone, ease of bank access, dominant substrate
 - Document recreation observed (if any) – waterbody and pool measurements



RUAA Field Surveys

- Field Photographic Records
 - Each Survey Site
 - Upstream
 - Left Bank
 - Right Bank
 - Downstream
 - At 0, 150, 300 M



RUAA Site Selection Guidelines

- Identify areas where the waterbody is
 - Accessible to the public
 - Has a high potential for recreational use
 - Road crossings
 - Public lands
 - Parks
 - Populated areas



RUAA Site Selection Guidelines

- Goal for RUAA Survey
 - 3 sites for every 5 miles of waterbody
- Rocky Creek is 37 river miles long
 - Goal: 21 sites



Next Steps

- Stakeholder involvement is fundamental to the success of this project
 - Provide access to the waterbody
 - Complete interview forms



Contact Information

Leah Taylor

Email: ltaylor@tiaer.tarleton.edu

Office Phone: 254.968.0513

Sarah Robinson

Email: srobinson@tiaer.tarleton.edu

Office Phone: 254.968.1913



Questions?

Project Website:
<http://matagordabasin.tamu.edu/>

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Leah Taylor
Texas Institute for Applied Environmental Research
ltaylor@tiaer.tarleton.edu
(254) 968-0513

