BIOLOGICAL & AGRICULTURAL ENGINEERING
TEXAS A&M UNIVERSITY

# Rowlett Creek Watershed Characterization Project

## Stakeholder Kickoff Meeting


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Thursday May 20th, 2021

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

EPA United States Environmental Protection Agency

Plano City of Excellence

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NORTH TEXAS MUNICIPAL WATER DISTRICT

SMU

# Agenda

- 10:00 Welcome/Introductions
- 10:10 Rowlett Creek Water Quality
- 10:40 Watershed Planning
- 11:10 Stakeholder Involvement and Organization
- 11:30 Discussion and Questions
- 12:00 Adjourn

# https://agrilife.org/lid/rowlett-creek-watershed-characterization

## Rowlett Creek Watershed Characterization

### Announcement: Rowlett Creek Watershed Characterization Project Kick Off Meeting

May 20, 2021 10:00 AM Central Time (US and Canada)

Registration HERE

**Background Information:**

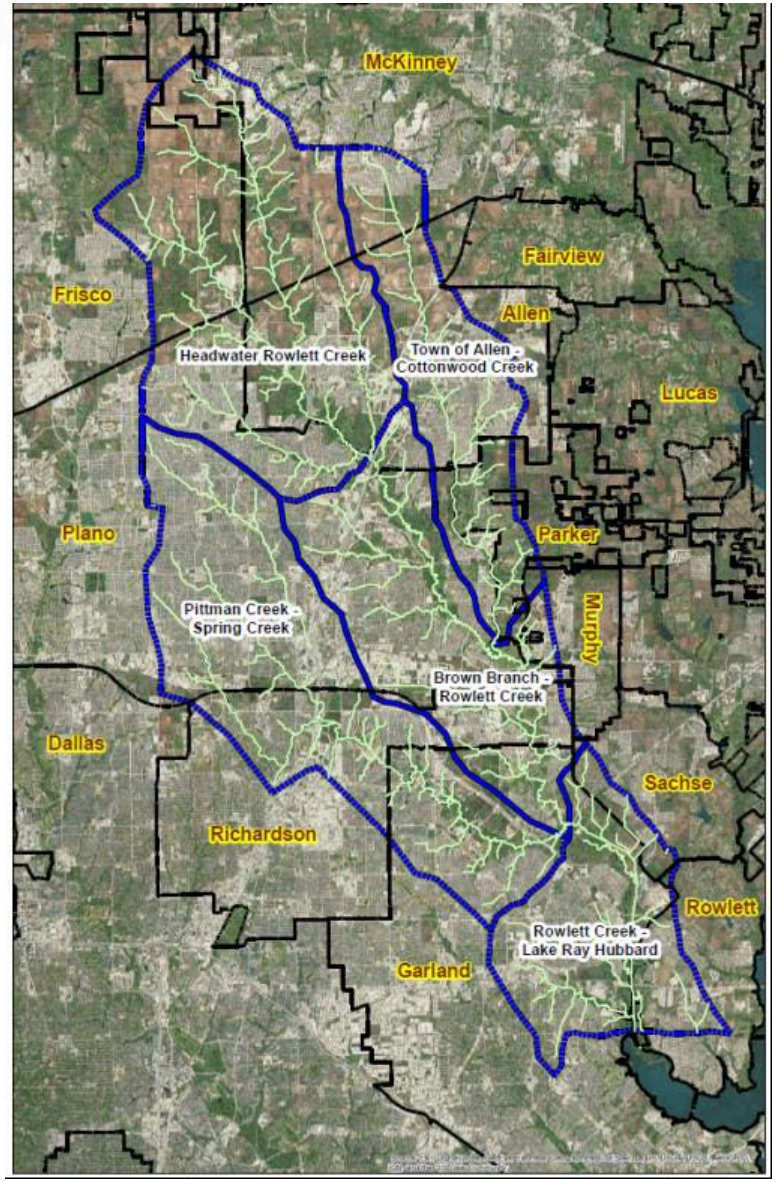
Rowlett Creek flows through the DFW Metroplex cities of Plano, Garland, Mckinney, Frisco, Allen, and Murphy, which constitute a highly urbanized watershed. The creek also flows to a major water supply reservoir owned by the City of Dallas. The majority of the creek is within the city limits of Plano. The City of Plano is the ninth most populous city in the state of Texas (2010 United States Census). Land uses in Plano consist of industrial

# Funding Sources

- Funding provided by the Texas Commission on Environmental Quality through a Clean Water Act Section 319(h) grant from the U.S. Environmental Protection Agency, with local match funding from Texas A&M AgriLife Extension, Southern Methodist University and the City of Plano

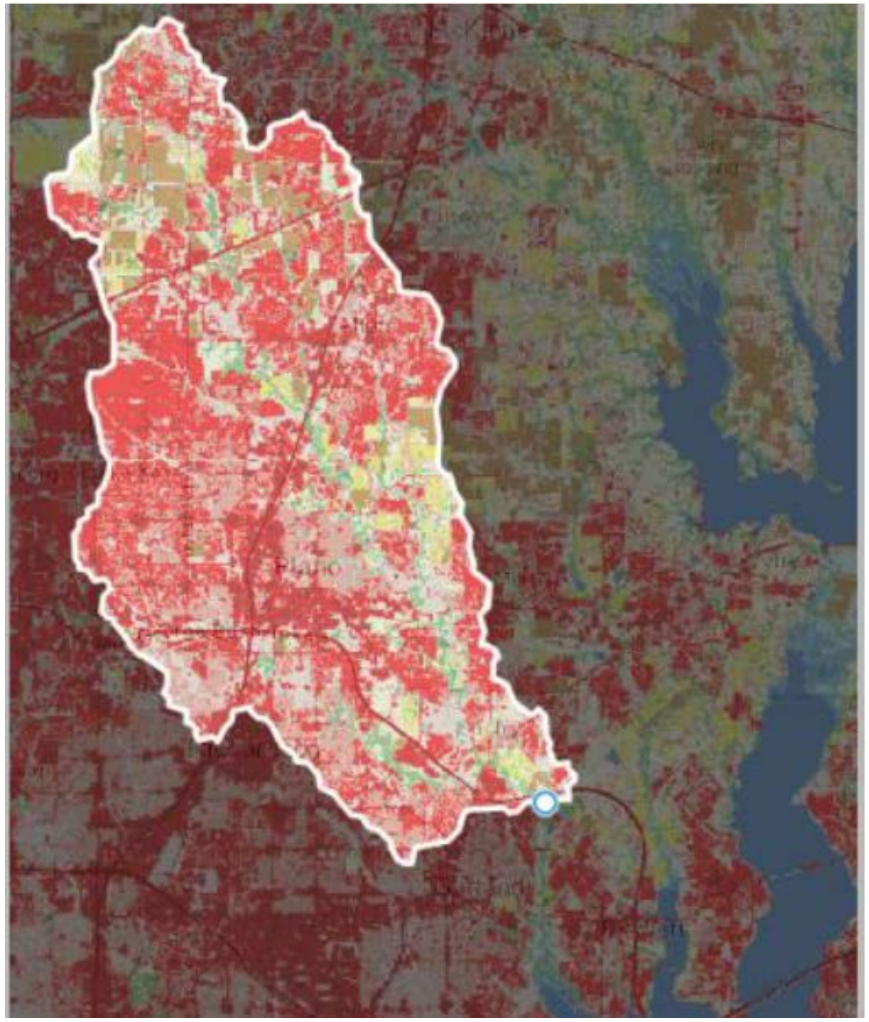
# Rowlett Creek Water Quality

- Significant portion of East Fork of Trinity
- Drains into Lake Ray Hubbard
- Flows through Plano (the ninth most populated in city in the state of Texas (2010 Census), Garland, McKinney, Frisco, Allen, and Murphy
- Highly urbanized
- Exposed to water quality and habitat degradation caused from human activity, urban runoff, and erosion
- Tributaries include
  - Pittman  and Spring Creek;
  - Cottonwood Creek



# Land Use and Land Cover

| Class Name | Area (ac) | Coverage (%) |
|---|---|---|
| Open Water | 128.44 | 0.16 |
| Perennial Ice/Snow | 0 | 0 |
| Developed, Open Space | 9941.75 | 12.59 |
| Developed, Low Intensity | 19206.72 | 24.33 |
| Developed, Medium Intensity | 25623.78 | 32.45 |
| Developed, High Intensity | 6735.69 | 8.53 |
| Barren Land (Rock/Sand/Clay) | 66.69 | 0.08 |
| Deciduous Forest | 3660.54 | 4.64 |
| Evergreen Forest | 165.49 | 0.21 |
| Mixed Forest | 0 | 0 |
| Shrub/Scrub | 0 | 0 |
| Grassland/Herbaceous | 6547.97 | 8.29 |
| Pasture/Hay | 1805.57 | 2.29 |
| Cultivated Crops | 4833.79 | 6.12 |
| Woody Wetlands | 212.42 | 0.27 |
| Emergent Herbaceous Wetlands | 19.76 | 0.03 |
| Total | 78951.08 | 100 |

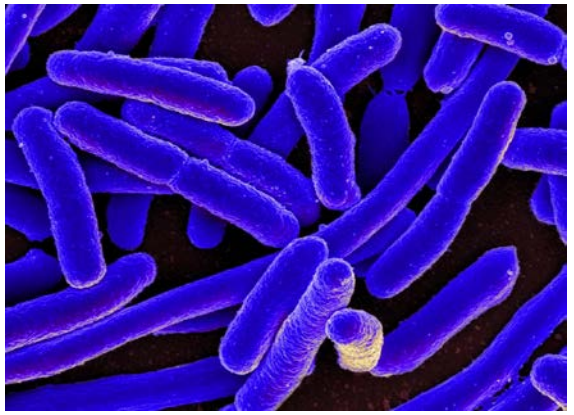


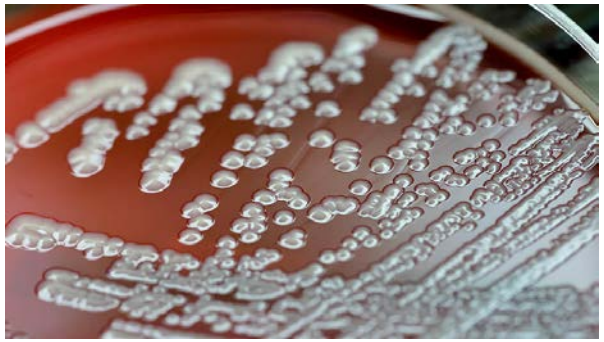
# Rowlett Creek Impairment

- The Texas Commission on Environmental Quality (TCEQ) produces the Texas Integrated Report of Surface Water Quality every two (2) years.
- The most recent publication in May 2020 identified that of the 2,681 assessment units (AUs) in Texas, 325 AUs are impaired for bacteria, 148 AUs are concerned with near nonattainment for bacteria, 231 AUs are listed as a concern for nitrate, and 164 AUs are listed as a concern for total phosphorus (TCEQ, 2020).

# Rowlett Creek Water Quality

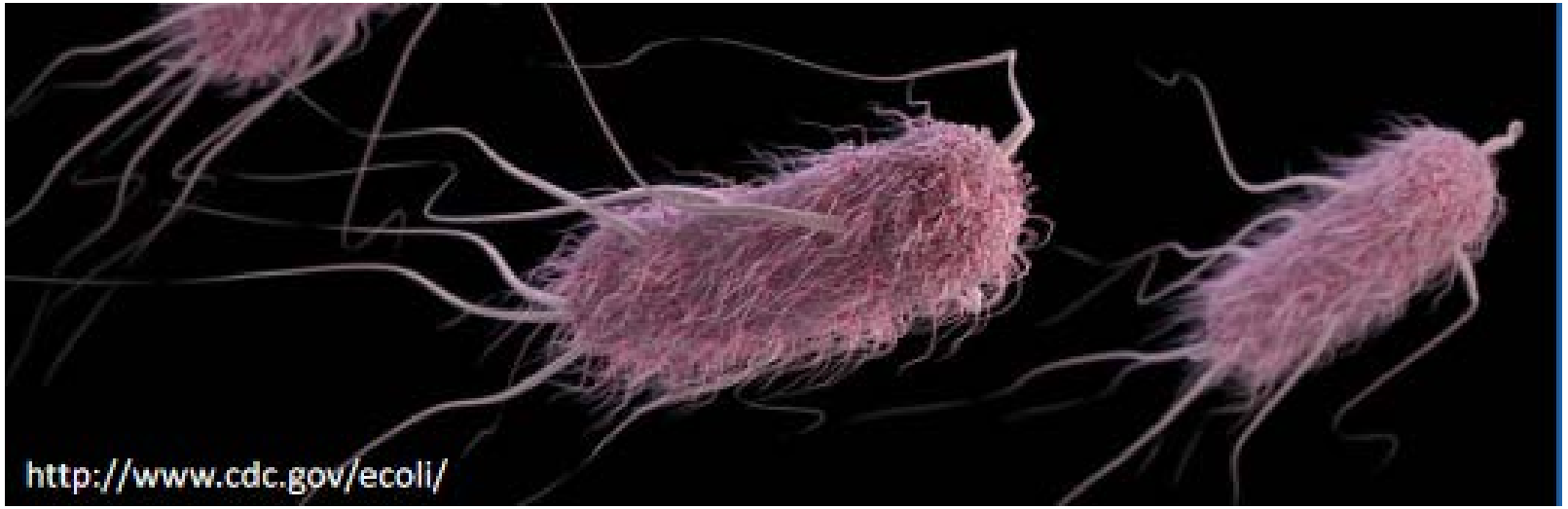
- Rowlett Creek was placed on the 2014 Texas Integrated Report -303(d) List (IR) for bacteria and is still currently listed in the 2020 IR.
- Rowlett Creek was also listed on the 2014 Texas IR for Water Bodies with Concerns for Use Attainment and Screening Levels as having a concern for nitrate and is still currently listed in the 2020 IR.





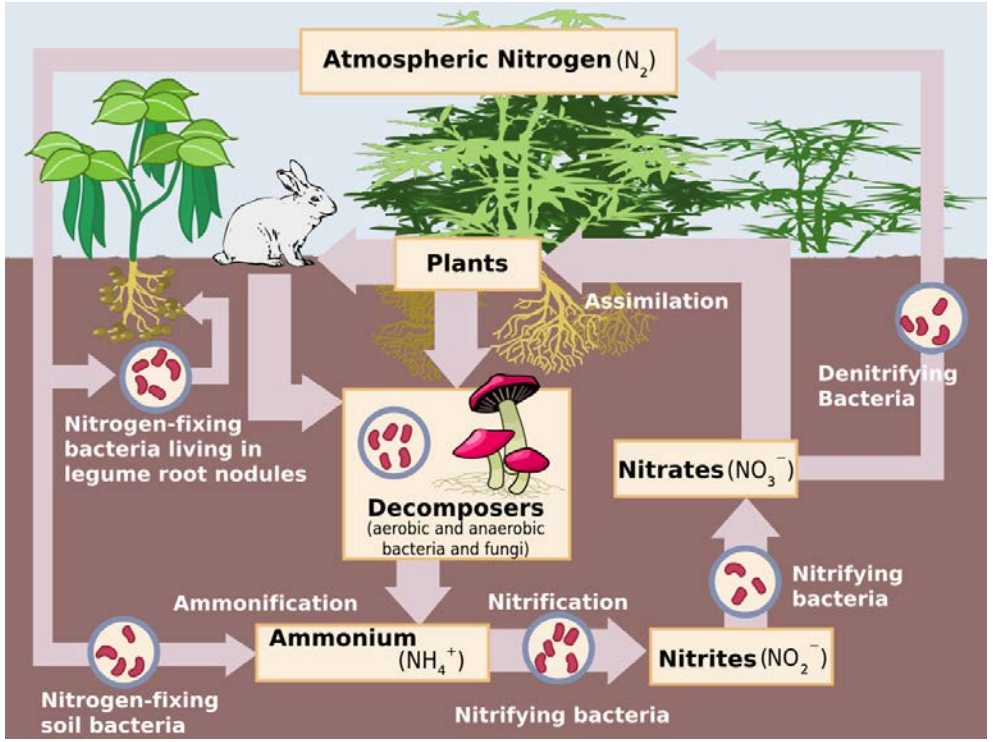
# *Escherichia coli (E. coli)*

- Found in intestines of warm blooded animals
- Most strains harmless
- Used as indicator bacteria



# Nitrate Nitrogen

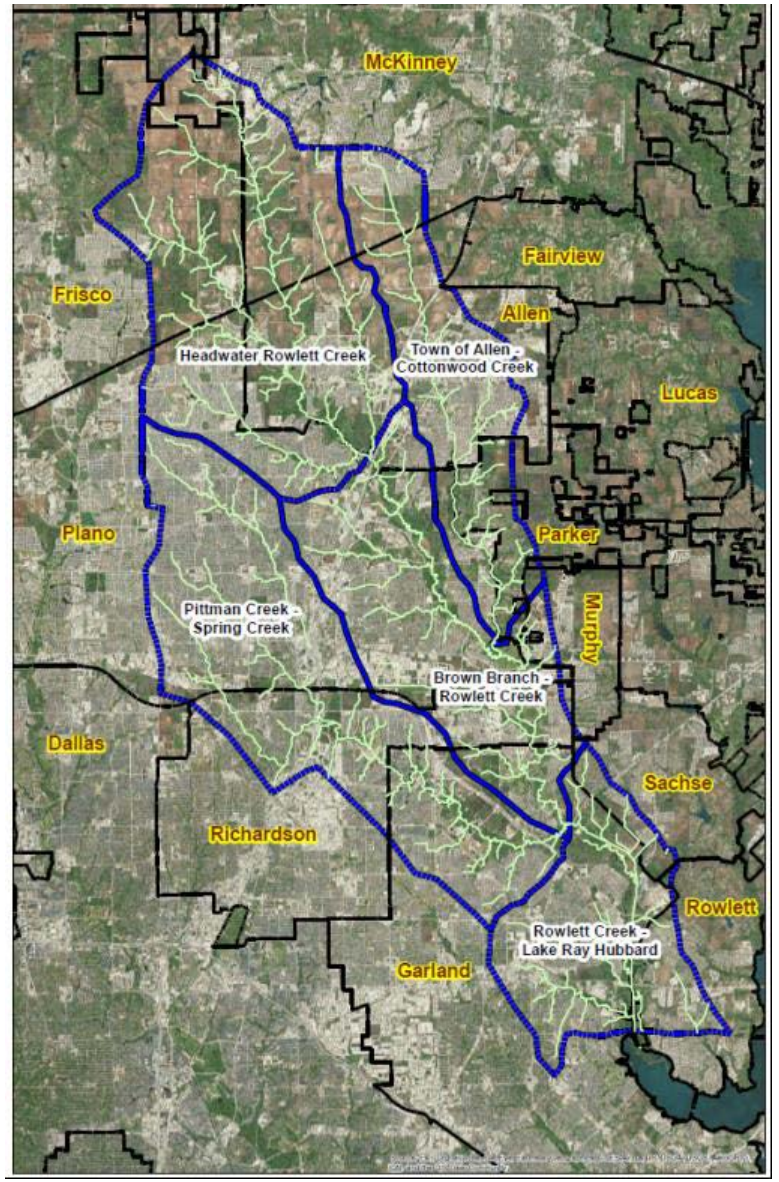
- Commonly found in fertilizer
- Can be produced by biological/chemical conversion of other nitrogen species
- Can be harmful in drinking water
- Causes Algal blooms, reduced dissolved oxygen and sometimes fish kills




NPS.gov

# Current Activities from this project

- Data Collection
  - Existing Sources
  - Site Monitoring
- Modeling
  - Identify sources of pollution
  - Determine reduction needs to reduce impairment
- Stakeholder Meetings
  - Share information with stakeholders
  - Begin the process of approving a Watershed Protection Plan



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# Building a Watershed Protection Plan

# Non-Point Source Management

- The Clean Water Act (CWA) established the Section 319 Nonpoint Source Management Program (1987 amendment)
- Impaired waters placed on the 303(d) list by TCEQ –“because it does not attain the water quality criteria associated with its designated use”.
- Provides grant money to states, territories, and tribes to support activities that address NPS pollution
- Prioritize funding for development and implementation of watershed-based plans in impaired waterbodies
- Promotes the ‘Watershed Approach’ to restoring and protecting impaired & threatened waters

# Non-Point Source in Texas CWA §319(h)

- The *Texas State Soil and Water Conservation Board* (*TSSWCB*) 50% of funds
  - Silviculture
  - Agriculture
- the *Texas Commission on Environmental Quality (TCEQ) 50% of funds*
  - Urban
  - Work that is not covered in the MS4 management plans
  - Rural
  - Non-silvicultural activities
  - Non-agricultural activities


# Project Funding

- 60% Federal funds provided by EPA and allocated through the State NPS program
- 40% matched by Grantee
  - State or local funds
  - In-kind services
  - Salaries and Volunteer hours

# Types of Projects Funded

- Characterize watersheds
- Identify sources off non-point pollution (NPS)
- Develop and implement best management practices (BMPs)
- Monitor effectiveness of BMPs
- NPS education and outreach
- Be sustainable

# The Watershed Approach (EPA)

- Watershed-Based Plan designed to protect priority waters or restore waters already impaired by pollutants
- WBP eligible for a large portion of 319 Grant funds
- Specific components (9 Elements) required in WBP's for funding
- https://www.epa.gov/nps/addressing-water-quality-challenges-using-watershed-approach

# Nine Elements of WPP

**Summary of the nine minimum elements to be included in section 319-funded watershed plans for threatened or impaired waters**

a. Identify causes and sources of pollution
b. Estimate pollutant loading into the watershed and the expected load reductions
c. Describe management measures that will achieve load reductions and targeted critical areas
d. Estimate amounts of technical and financial assistance and the relevant authorities needed to implement the plan
e. Develop an information/education component
f. Develop a project schedule
g. Describe the interim, measurable milestones
h. Identify indicators to measure progress
i. Develop a monitoring component

# 6 Steps to Effective Watershed Management

# Step 1: Build Partnerships

- Partnership-building process requires:
  - Stakeholder input on long-term goals
  - Goals to be refined throughout planning process
  - Development of concrete objectives with measurable targets and indicators to measure progress for each goal
- Develop preliminary Indicators
  - *E. Coli* levels in water

# Step 2:Characterize the Watershed

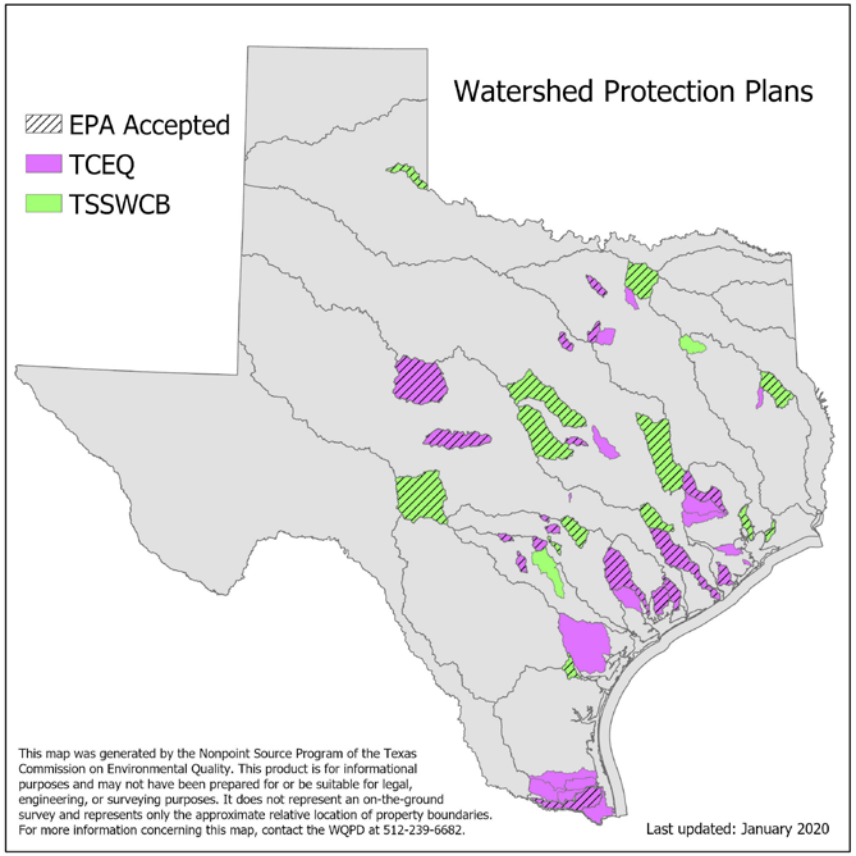
- Collect existing data and create a watershed inventory
- Analyze data
- Identify causes and sources of impairments/pollution that need to be controlled (Element A)
- Identify data gaps and collect additional data if needed
- Estimate/Quantify pollutant loads

# Step 3: Finalize Goals and Identify Solutions

- Set overall goals and management objectives
- Develop indicators/targets
- Determine load reductions needed (Element B)
- Identify critical areas
- Develop management measures to achieve goals (Element C)
- Develop information/education component (Element E)

# WPPs in Texas

https://www.tceq.texas.gov/waterquality/nonpoint-source/mgmt-plan/watershed-pp.html#list



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# Stakeholder Involvement and Organization

# Who is a Stakeholder

- A stakeholder is anyone who:
  - Makes and implements decisions
  - Is affected by those decisions
  - Participates in the planning process
  - Assisting with implementation
  - Impeding the process

*Don't have to live here to be a stakeholder!*

# Who is a stakeholder

- Citizens/citizen groups
- Community/religious organizations
- Local businesses & industries
- Landowners
- Local government staff & officials
- Academia
- NGOs
- Environmental/conservation groups

# Why Engage Stakeholders?

- It’s the key to developing an effective WPP
- Stakeholder representation must be well-distributed
  - Amongst multiple users with varying needs
  - Throughout the entire watershed
- Local knowledge
  - Know the watershed
  - Know what works, what doesn’t

# GOAL – develop a plan that will drive implementation

- Locally-driven and stakeholder supported
- Improve water quality in Rowlett Creek and tributaries
- Protect water quality in North DFW
- Increase awareness of the watershed, issues, and planning process

# Proposed Group Structure

- **Watershed Protection Partnership (Partnership)**
  - The Rowlett Creek Watershed Protection Partnership (Partnership) will function as the overall stakeholder group
  - The Partnership will be responsible for many of the decisions towards the beginning of the project's lifespan and will act as the initial coordinating body responsible for electing the initial Steering Committee members

# Rules for the Partnership

- No formal meeting ground rules will be adopted for the Partnership meetings, but attendees are asked to abide by a few simple rules of etiquette during meetings:
- Save questions until after each presentation has been given (unless otherwise instructed by the presenter).
- Limit discussion to 5 minutes per person.
- Any additional questions may be answered during the open discussion period before the meeting's end.
- To be respectful of others' time and points of view.

# Proposed Group Structure

- **Steering Committee (Committee)**
  - Core group of stakeholders will act as the voting body of the Partnership
  - The Committee will vote on key watershed decisions and review potential water quality improvement BMPs for applicability in the watershed.
  - These recommendations may eventually become part of the WPP, which the Committee will review on a chapter-by-chapter basis.

# How can I get Involved

- Attend and participate at public meetings
- Provide feedback during the WPP's public comment period
- Serve as Steering Committee member
  - Vote on important watershed issues
  - Vote on WPP components

# Steering Committee Formation

- Will be formed during the next Group meeting
- Surveys will be used to solicit participation in the steering committee
- Initial meeting will be held to establish the goals of the committee, assess membership and determine if additional participation is required

# Future Meetings and General Timeline

- Next Group Meeting- Tentative mid to late July
- First Steering Committee Meeting – August
- Data Analysis, Load Calculations, Modeling Analysis to be completed by Mid 2022

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# Questions, Discussion

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