Sandy Creek and Wolf Creek TMDL Public Meeting

Water Quality Planning and Implementation in Texas

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November 21, 2019

The Law requires us to determine…

- What are the problems?

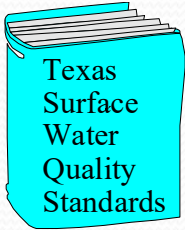- How bad are they?

- How can they be addressed?

Enterococcus

Planning & Program Management
Establish or revise water quality standards; develop monitoring plans; adjust restoration plans.

Monitoring
Collect water quality data for assessment, strategy development, and implementation tracking.

Implementation
Implement pollutions source controls—such as permits, rules, nonpoint source management practices—with multiple parties.

Water Quality Standards
Establish quality goals and define beneficial uses

Strategy Development
Develop new strategies based on assessment, such as TMDLs or evaluation of the standards.

Assessment & Targeting
Assess water quality and identify water bodies that do not meet standards. Establish priorities.

Texas Surface Water Quality Standards

- Explicit goals for the quality of streams, rivers, lakes, and bays throughout the state

- Texas Surface Water Quality Standards are State Rules codified in Title 30 Chapter 307 of the Texas Administrative Code

Texas Surface Water Quality Standards

- The Standards identify appropriate uses (and associated criteria) for surface waters:
  - Aquatic life
  - Recreation
  - Public Water Supply
  - Fish Consumption/Oyster Waters
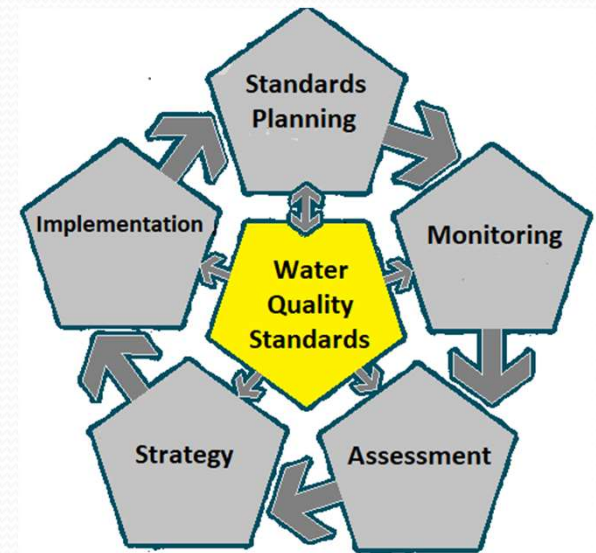
Standards for Selected Streams

SEGMENT	COUNTY	WATER BODY	ALU	DO	DESCRIPTION	ADDITIONAL SITE-SPECIFIC FACTORS
0511	Orange	Coon Bayou	H	4.0	From the confluence with Cow Bayou upstream to the extent of tidal limits	
0511	Orange	Unnamed tributary of Cow Bayou	H	4.0	From the confluence with Cow Bayou (north bank approximately 1.6 km from the Sabine River confluence) upstream to the extent of tidal limits	
0513	Newton, Jasper	Trout Creek	H	5.0	Perennial stream from the confluence with Big Cow Creek in Newton County upstream to the confluence with Boggy Creek and Davis Creek in Jasper County	
0601	Orange	Tiger Creek	L	3.0	Perennial stream from the confluence with Meyer Bayou upstream to the confluence of Caney Creek near the City of Vidor	
0602	Hardin	Unnamed tributary (Booger Branch) of Massey Lake Slough	L	3.0	Perennial stream from Massey Lake Slough upstream to the Santa Fe Railroad crossing south of the City of Silsbee	
0603	Jasper	Sandy Creek	H	5.0	Perennial stream from the confluence with B. A. Steinhagen Lake upstream to 0.5 km below FM 776 east of the City of Jasper	
0604	Anderson, Henderson	Caddo Creek	H	5.0	Perennial stream from the confluence with the Neches River below Lake Palestine in Anderson County upstream to the dam of Caddo Creek Lake in Henderson County	

Primary Contact Recreation Use

- Primary contact recreation (PCR) activities are those involving a significant risk of ingestion of water, such as wading by children or swimming.

- The PCR use is not met if the geometric mean of all indicator bacteria is greater than:
  - 126 cfu/100 mL for *E. coli* in freshwater streams
  - 35 cfu/100 mL for Enterococci in tidal streams

- PCR is the presumed use for Texas streams. Recreational use analysis can be conducted to confirm actual historical use. <u>PCR has been confirmed for Sandy and Wolf Creeks.</u>

Monitoring

- The SWQM program coordinates the collection of physical, chemical, and biological samples from more than 1,800 surface water sites statewide.
  - Surface water data collected by Clean Rivers Program partners, and other local, regional, and state cooperators.
  - This data may be used by TCEQ to determine compliance with the Texas Surface Water Quality Standards through the Texas Integrated Report.
- Sandy Creek
  - Lower Neches Valley Authority (LNVA)
- Wolf Creek
  - LNVA

Assessment

- The Texas Integrated Report of Surface Water Quality
  - Requirement of Clean Water Act Sections 305(b) and 303(d).
  - Assessment period of seven years
  - New report every two years in even-numbered years. The 303(d) List is submitted to EPA for approval.
- 2016 Texas 303(d) List
  - EPA approved August 2019
- Draft 2018 Texas 303(d) List
 - TCEQ approved September 2019
  - Pending EPA approval
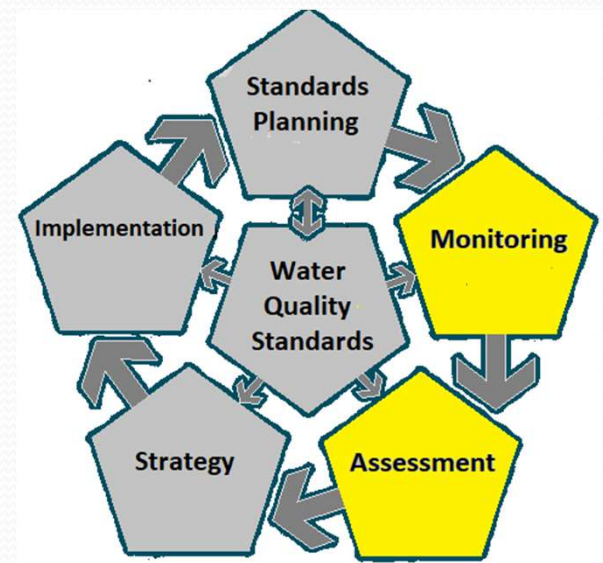
Section 303(d) of the Clean Water Act

- Identify water bodies that do not meet water quality standards, or are not expected to meet standards within two years (threatened)

- Establish schedules for developing total maximum daily loads (TMDLs)

- Develop TMDLs and Implementation Plans that identify parties responsible for reducing pollution loads

TMDL: Total Maximum Daily Load

- How much is too much?

- How bad is the problem?

- Where is it coming from?
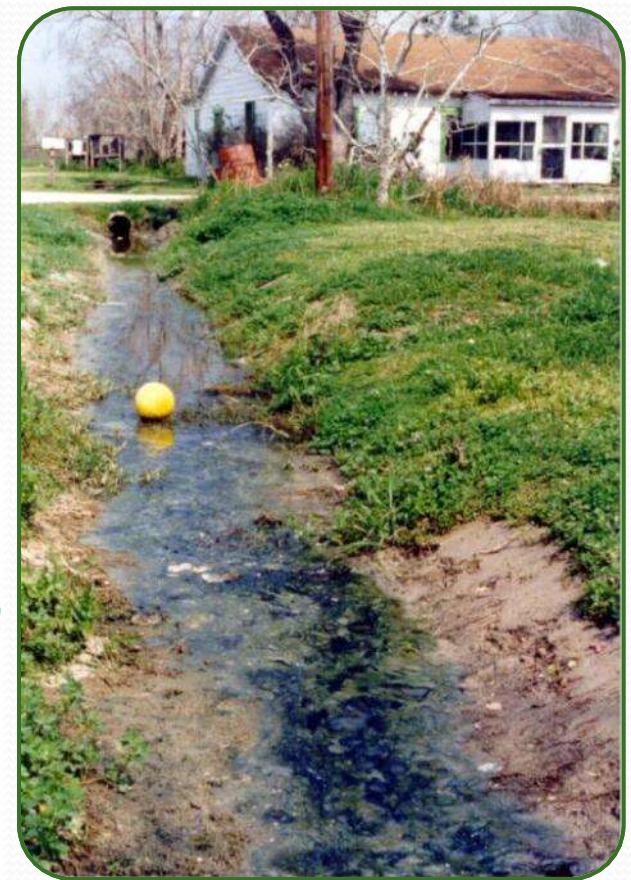
TMDL – Total Maximum Daily Load

- Determines the maximum amount (load) of a pollutant that a water body can receive and still maintain uses

- Allocates this load to broad categories of sources in the watershed.

- Adopted by the TCEQ

- Approved by the EPA

Contact Recreation Use
TMDL Watersheds
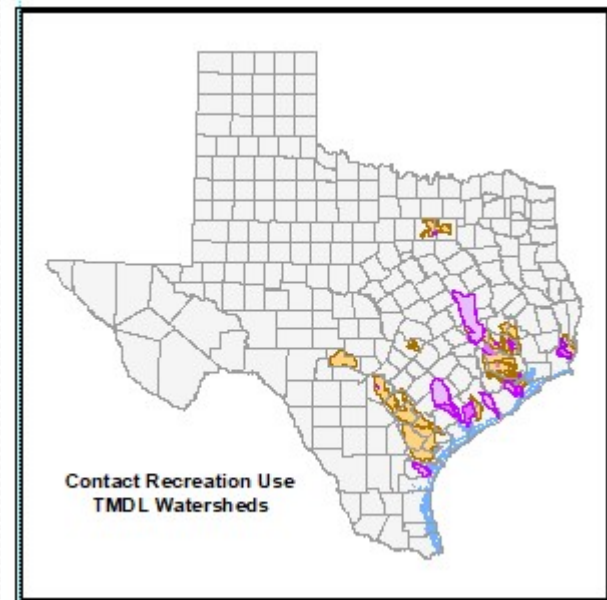
Implementing Legislation

- Federal mandate for state TMDL programs: Clean Water Act of 1972 and its amendments

- Section 303(d)(1)(C) of the Clean Water Act; EPA's implementing regulations in 40 CFR 130

- Texas develops TMDLs for water bodies in Category 5 of its *Texas Water Quality Inventory and 303(d) List*

Wolf Creek (0603B)

- From the confluence of B.A. Steinhagen to the upstream perennial portion of the stream south of Colmesneil (two assessment units)

  - Lower portion – elevated bacteria levels since 2006 Integrated Report
  - 157 cfu/100mL *E. coli* (Dec. 2009 – Nov. 2016)
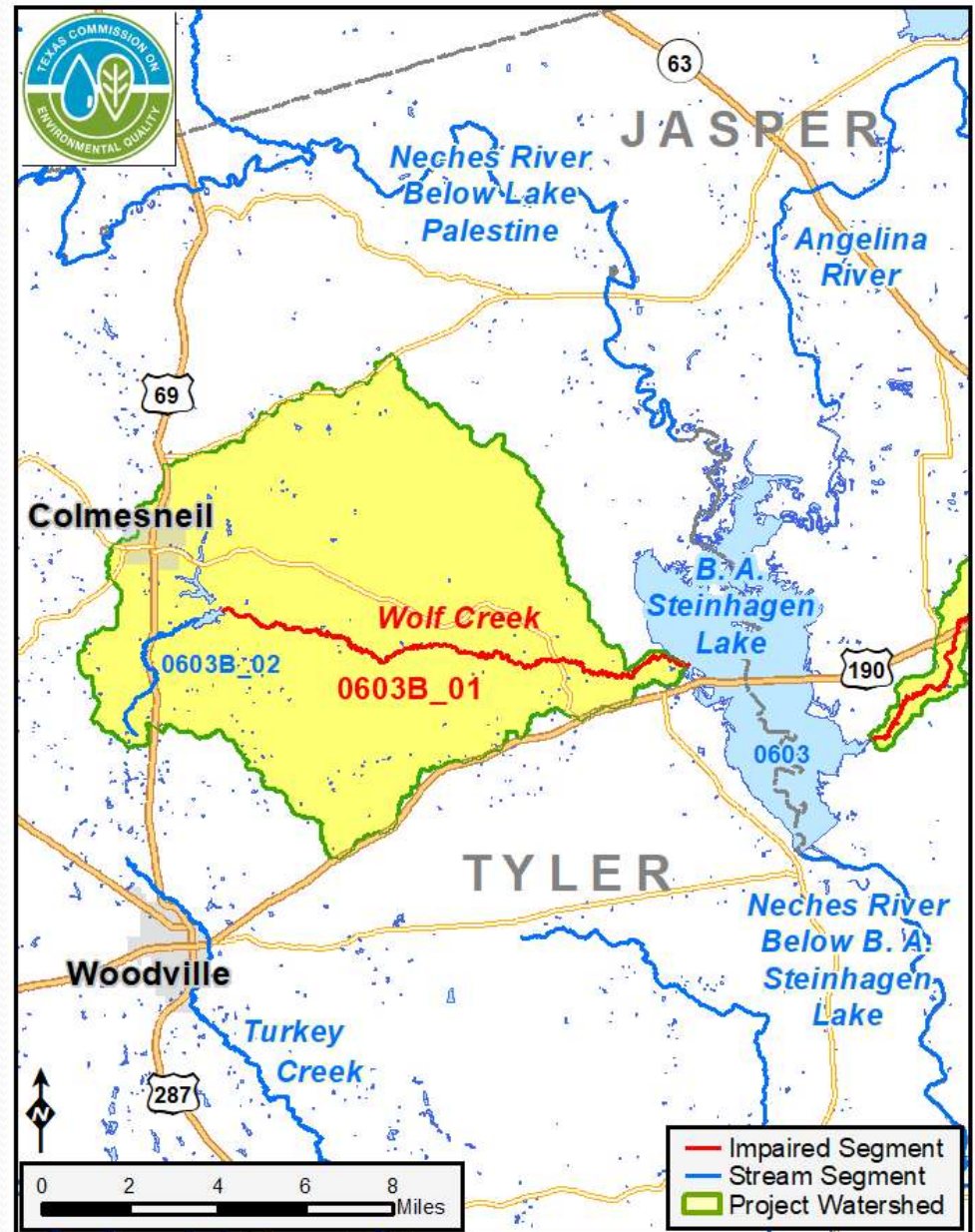
Sandy Creek (0603A)

- From the confluence with B.A. Steinhagen Lake upstream to headwaters at RR 255 (two assessment units)

  - Lower portion - elevated bacteria levels since 2000 IR
  - 173 cfu/100 mL *E. coli* (Dec. 2009 – Nov. 2016)
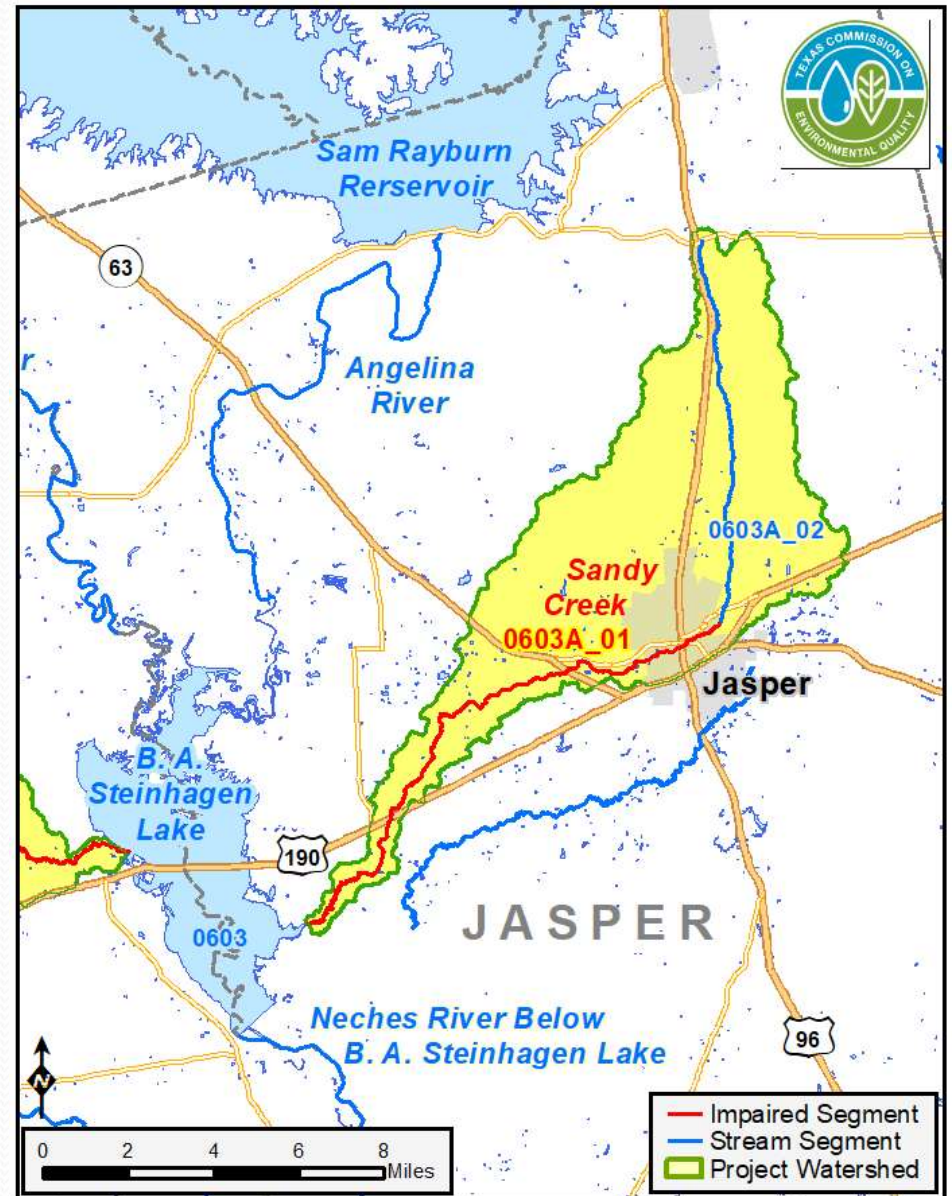
Potential Sources of Bacteria

- Wastewater treatment facilities,
- Urban stormwater runoff not covered by permit,
- Land application fields,
- On-site sewage facilities,
- Wildlife,
- Agricultural activities and animals,
- Unmanaged and feral animals, and
- Domesticated animals/pets

TMDL Equation

$$TMDL = WLA_{(WWTF)} + WLA_{(RSW)} + LA + FG + MOS$$

- $WLA_{(WWTF)}$ – wasteload allocation for WWTF discharges
- $WLA_{(RSW)}$ – wasteload allocation for aggregate regulated stormwater discharges
- LA – load allocation
- FG – future growth
- MOS – margin of safety
  - Units per day

TMDL Allocations
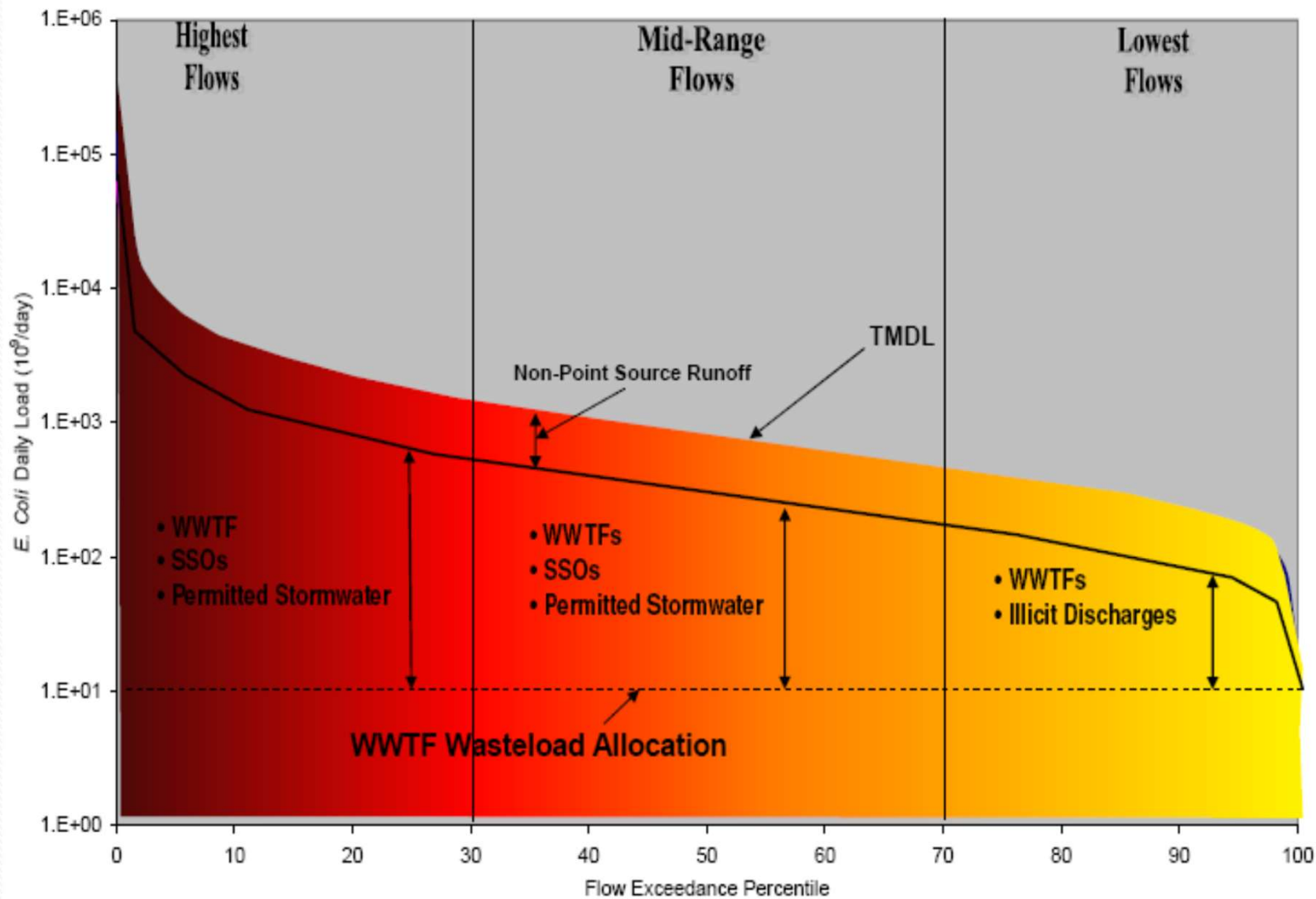
Questions?

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