

# Elm and Sandies Creeks TMDL Project: Overview

---



Total Maximum Daily Load Program  
Environmental Planning and Implementation Division  
Texas Commission on Environmental Quality



# Current Status of 303(d) Listing

---

## 2002 Water Quality Inventory and 303(d) List

Not supporting the **aquatic life use** due to depressed dissolved oxygen

Not supporting the **contact recreation use** due to elevated bacteria levels

# Water Quality Standards

---

<b>Use</b>	<b>Indicator</b>	<b>Criteria</b>
<b>High Aquatic Life</b>	<b>Dissolved Oxygen</b>	<b>5.0 mg/L Average</b>
		<b>3.0 mg/L Minimum</b>



# Water Quality Standards

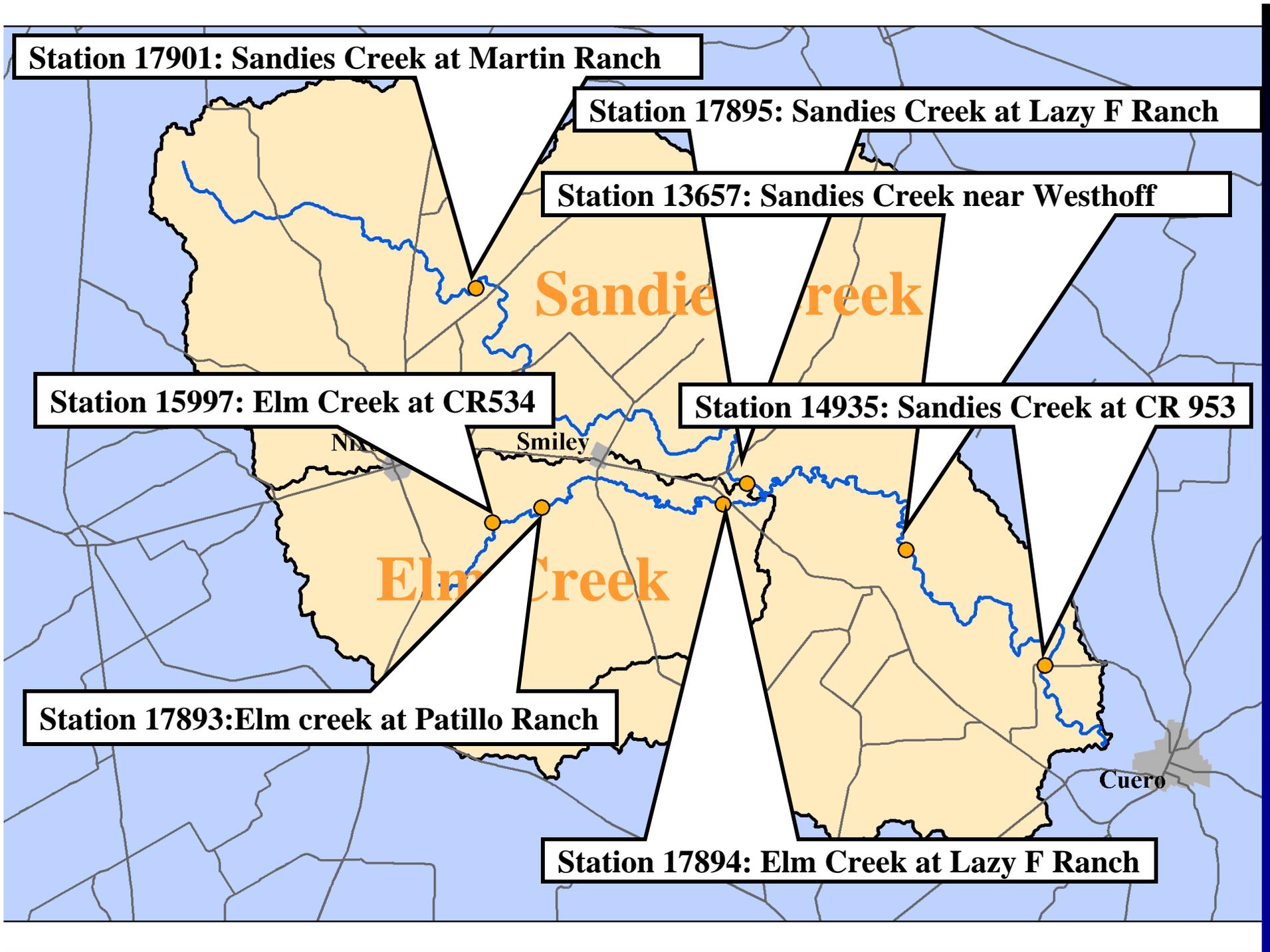
Use	Indicator	Criteria
High Aquatic Life	Dissolved Oxygen	5.0 mg/L Average
		3.0 mg/L Minimum
Contact Recreation	Bacteria ( <i>E. coli</i> )	394 col\100 mL Single sample
		126 col\100mL Geometric Mean



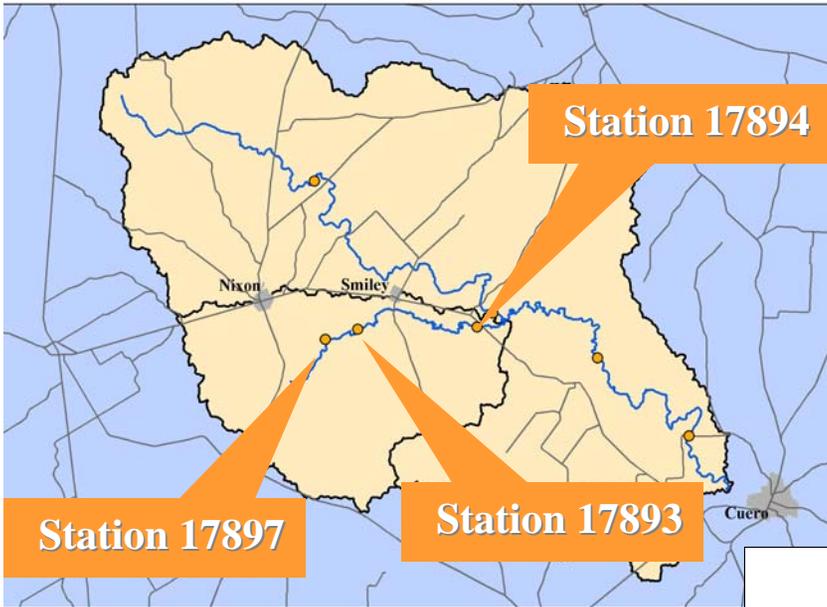
# Potential Outcomes

---

- 1. Conduct TMDL**
- 2. Adjust Water Quality Standard**  
(aquatic life use only)
- 3. Remove impairment from 303(d)  
List**
- 4. Collect additional data**

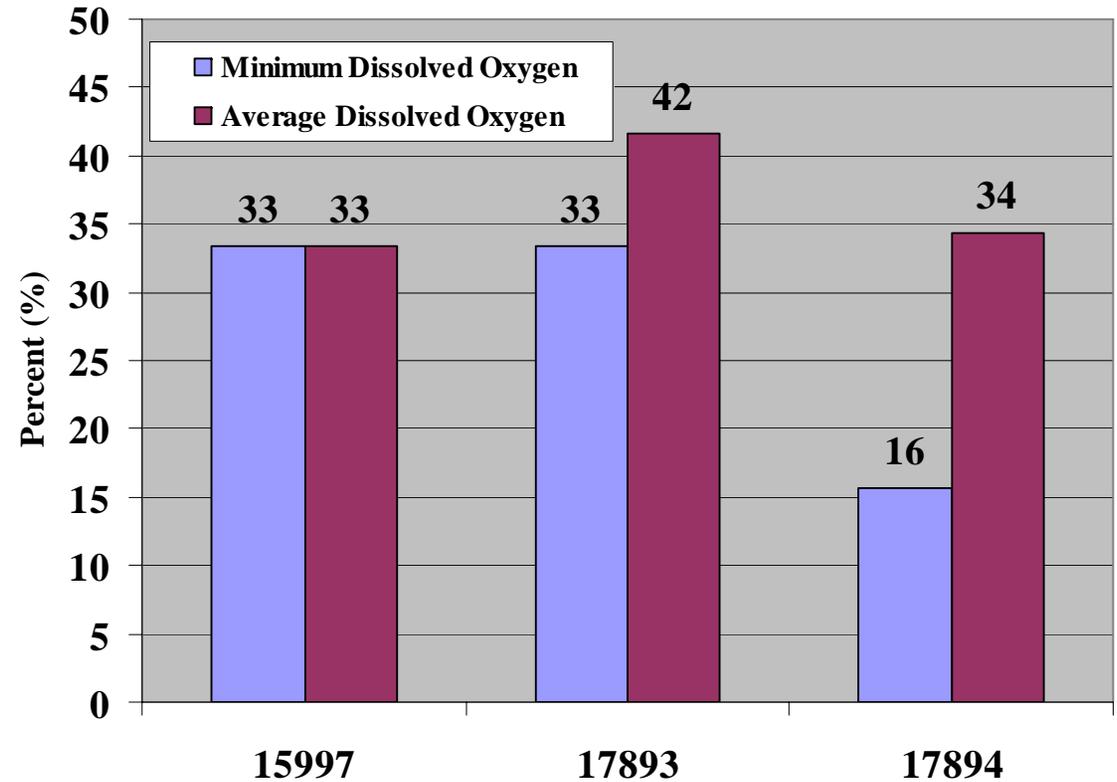


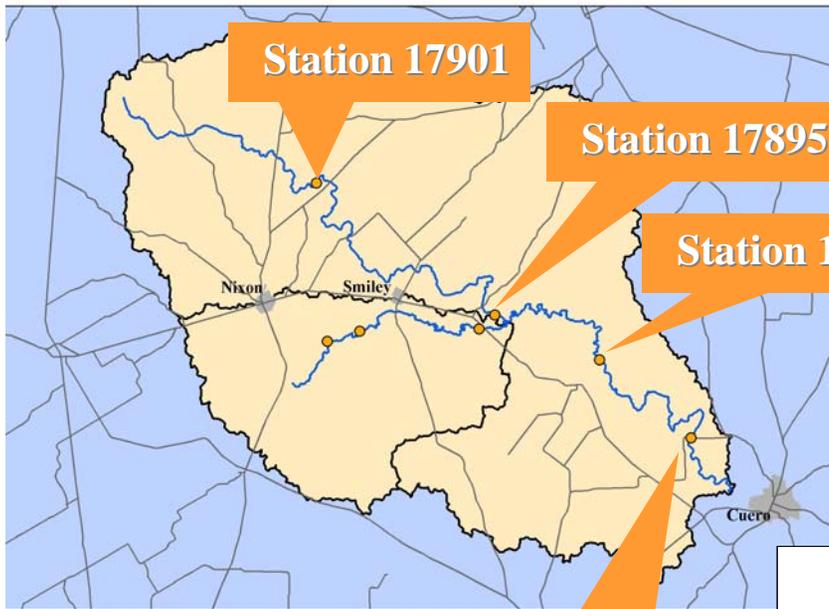
# Results



# Elm Creek

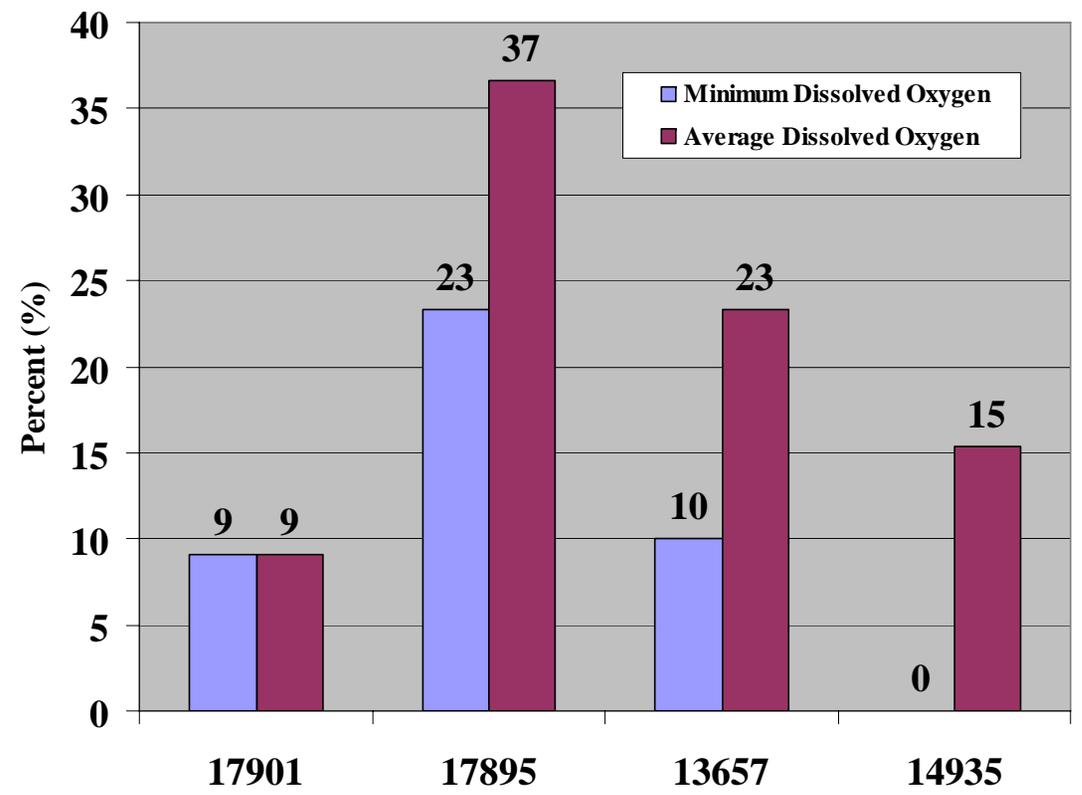
## Dissolved Oxygen

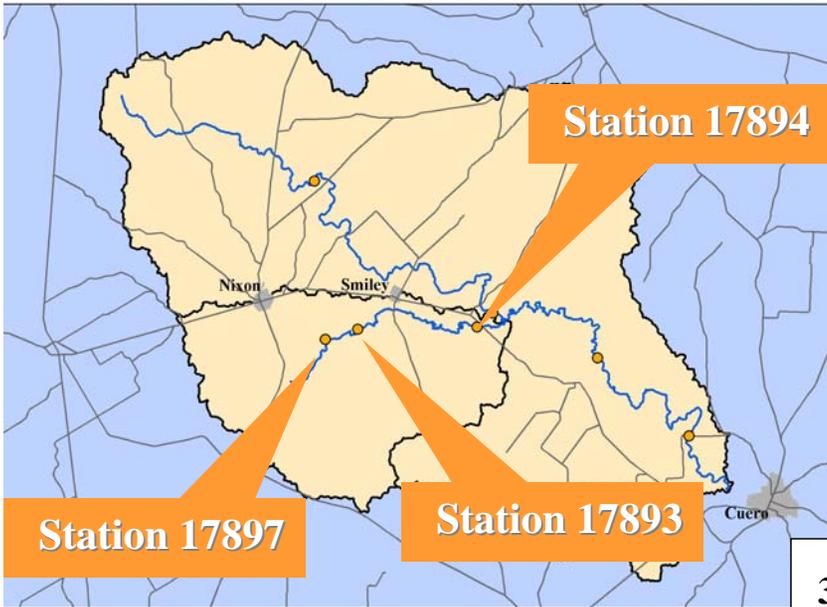




# SandiesCreek

## Dissolved Oxygen

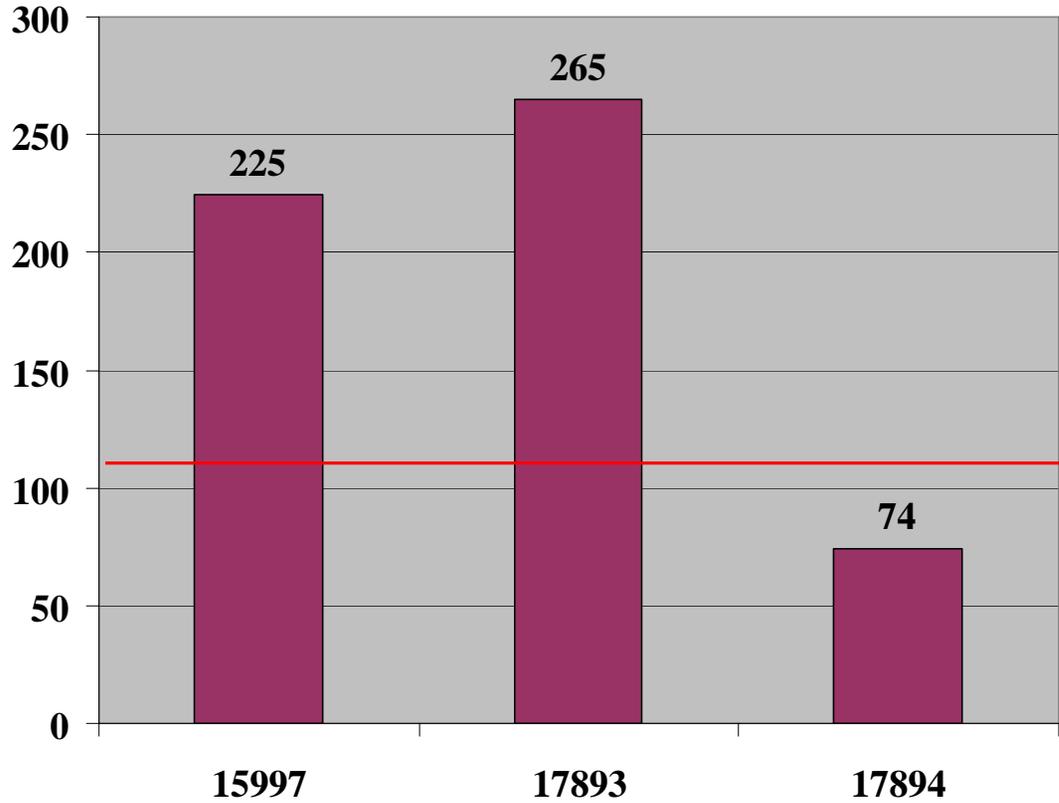


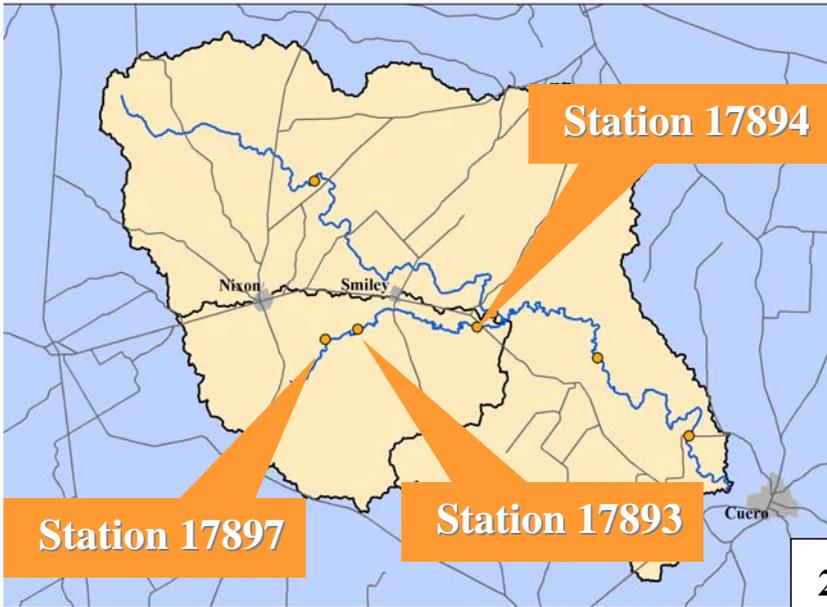


# Elm Creek

## Bacteria

### Geometric Mean

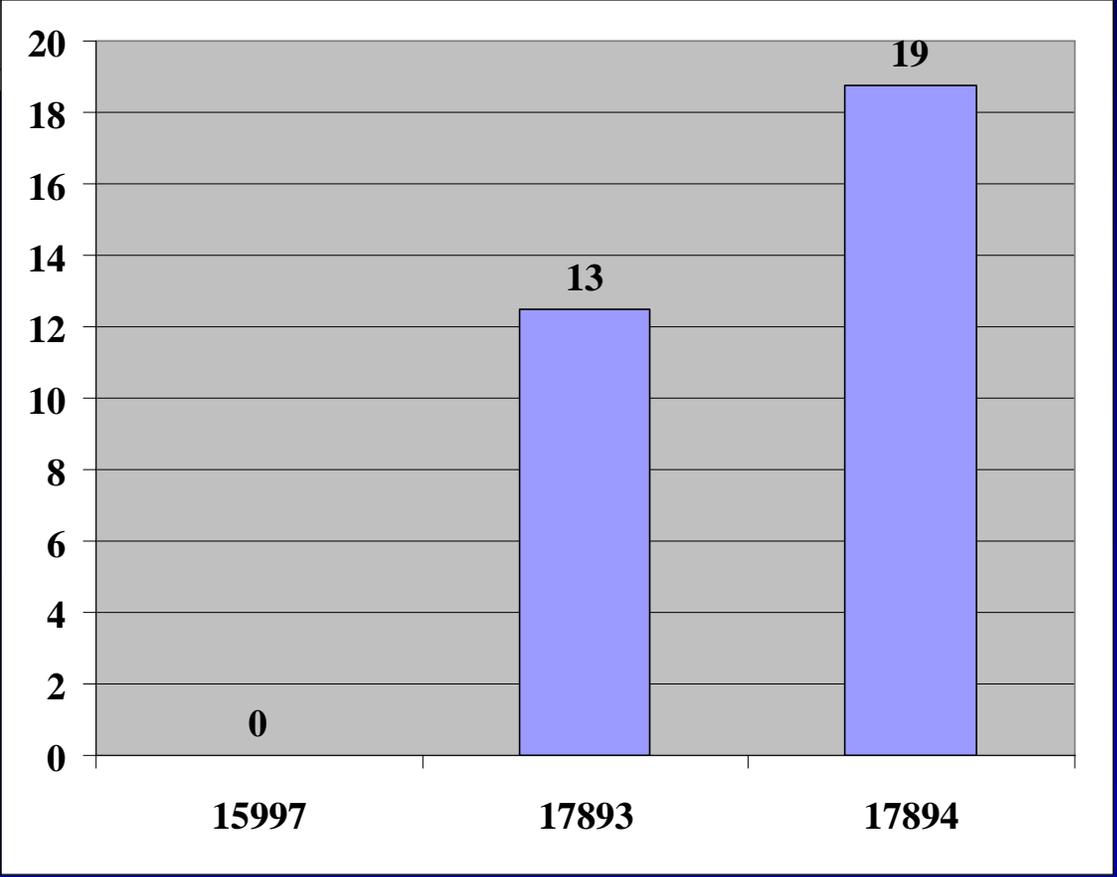




# Elm Creek

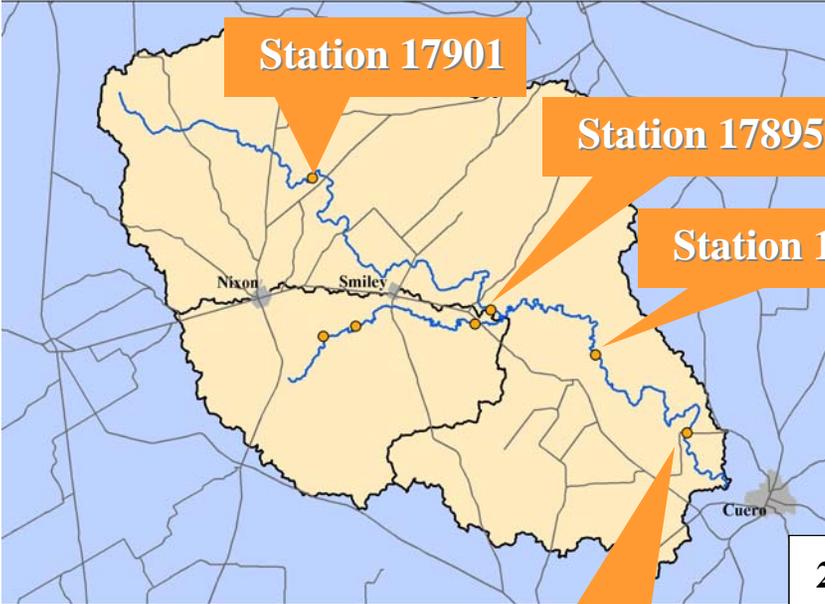
## Bacteria

**Single  
Sample  
Exceedance**



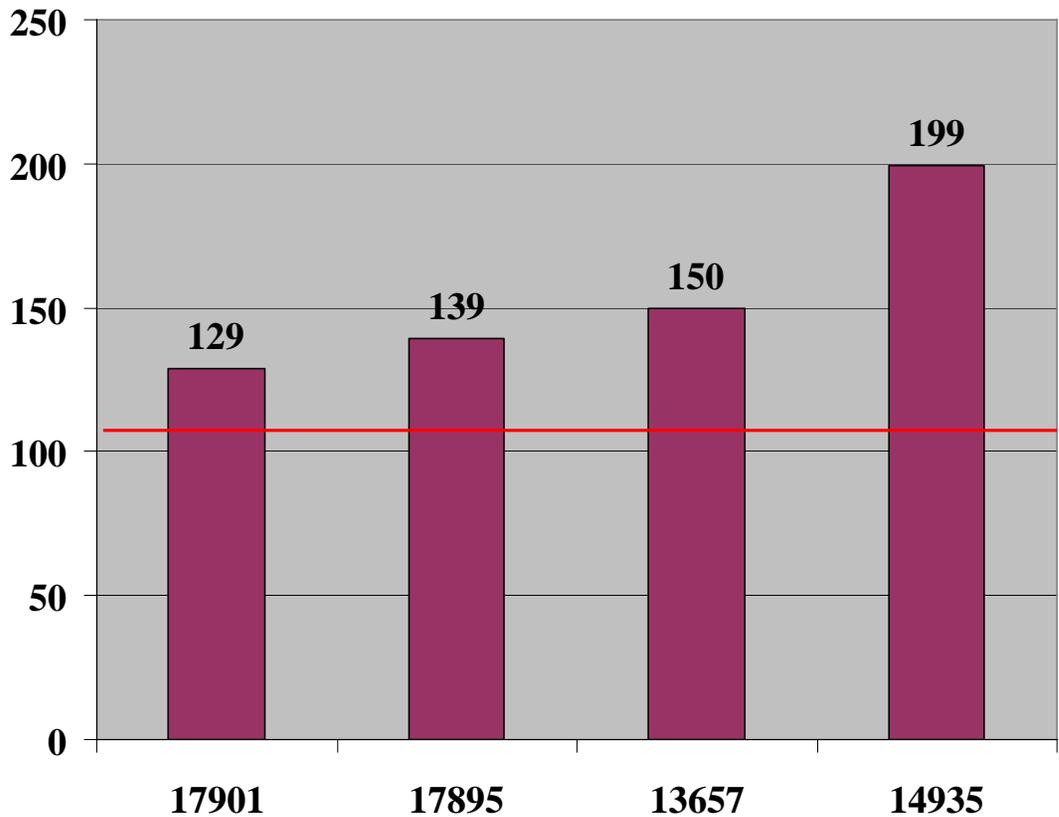
# SandiesCreek

## Bacteria



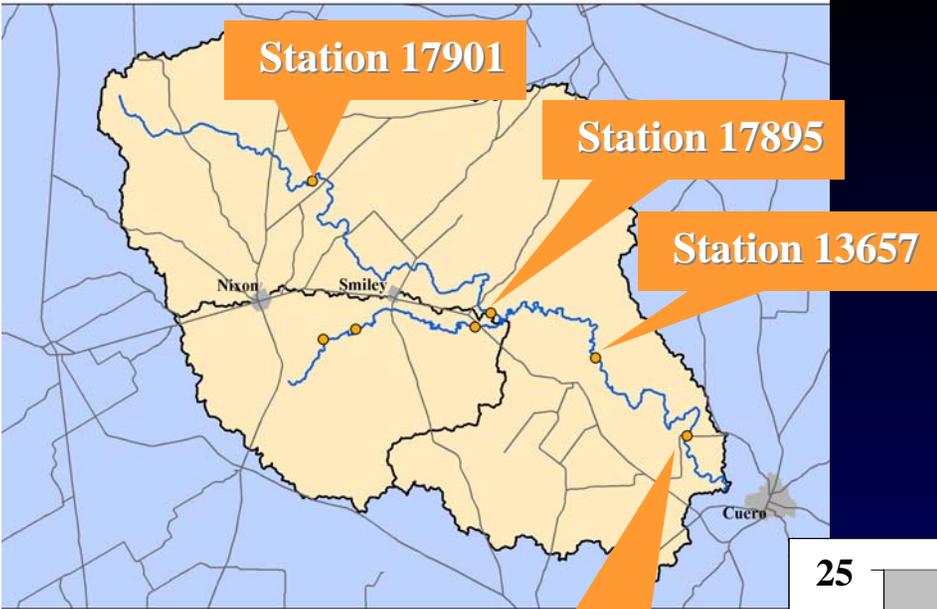
Station 14935

## Geometric Mean



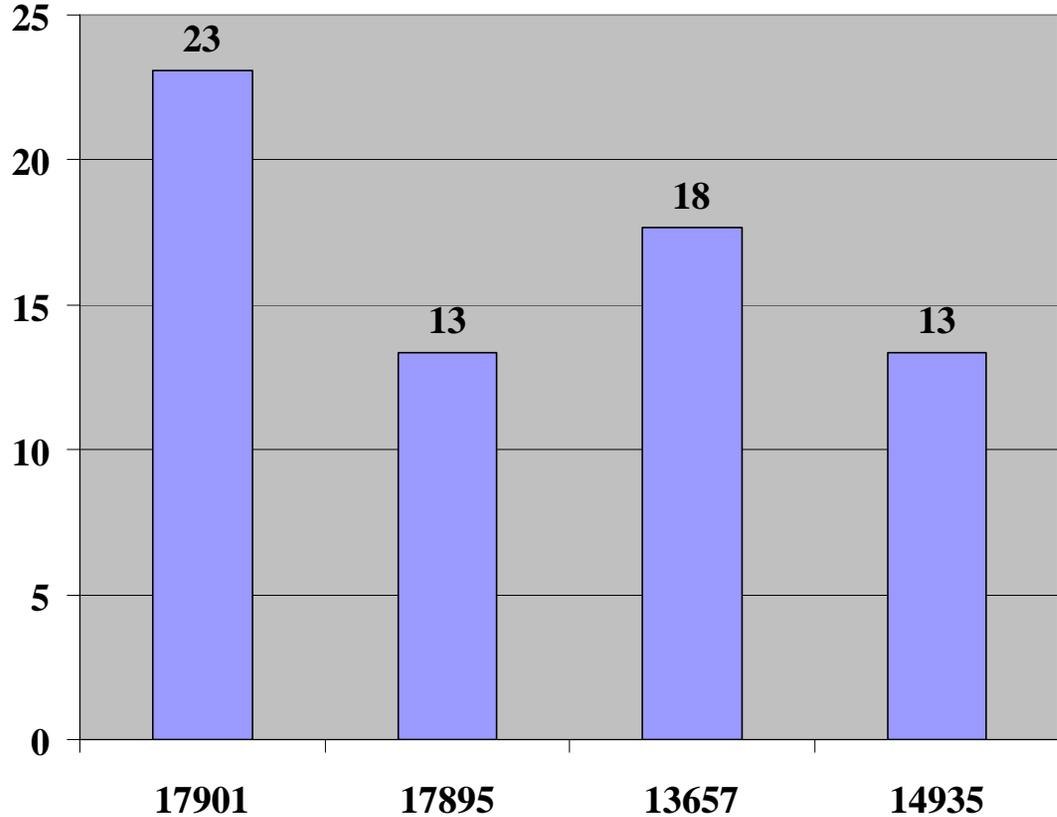
# SandiesCreek

## Bacteria



Station 14935

**Single  
Sample  
Exceedance**



# **Aquatic Life Use Outcome**

---

**1. Conduct TMDL**

**2. Adjust Water Quality Standard**  
(aquatic life use only)

**3. Remove impairment from 303(d)  
List**

**4. Collect additional data**

# Recreational Use Outcome

---

**1. Conduct TMDL**

**2. Adjust Water Quality Standard**  
(aquatic life use only)

**3. Remove impairment from 303(d)  
List**

**4. Collect additional data**

# Current Status....

---

## **TMDL Development Underway**

### **Data Collection**

**Event Data Collection – High flows**

**Kinetics – Low Flows**

### **Water Quality Modeling**

**Establish Watershed Committee**

# TMDL Process



# Key Elements of the Program

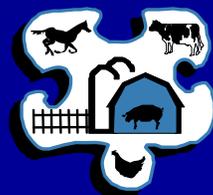
---

➤ **TMDL – Total Maximum Daily Load**

Determines the maximum amount (load) of a pollutant that a water body can receive and still maintain uses, and allocates this load to sources in the watershed.

➤ **Implementation Plan**

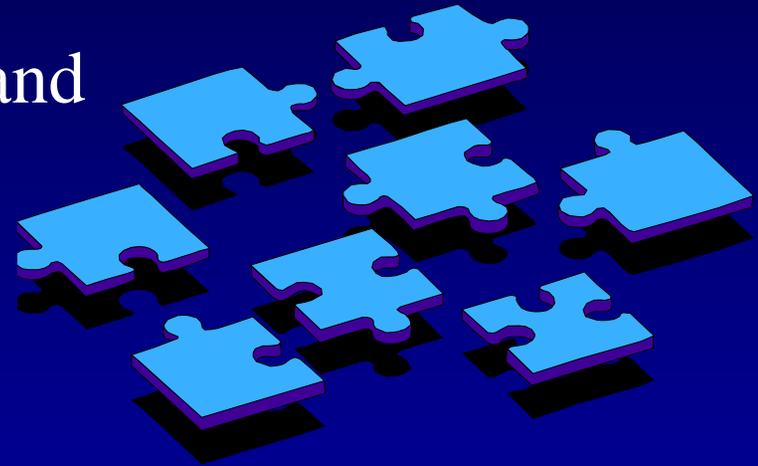
A detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reductions identified in a TMDL.



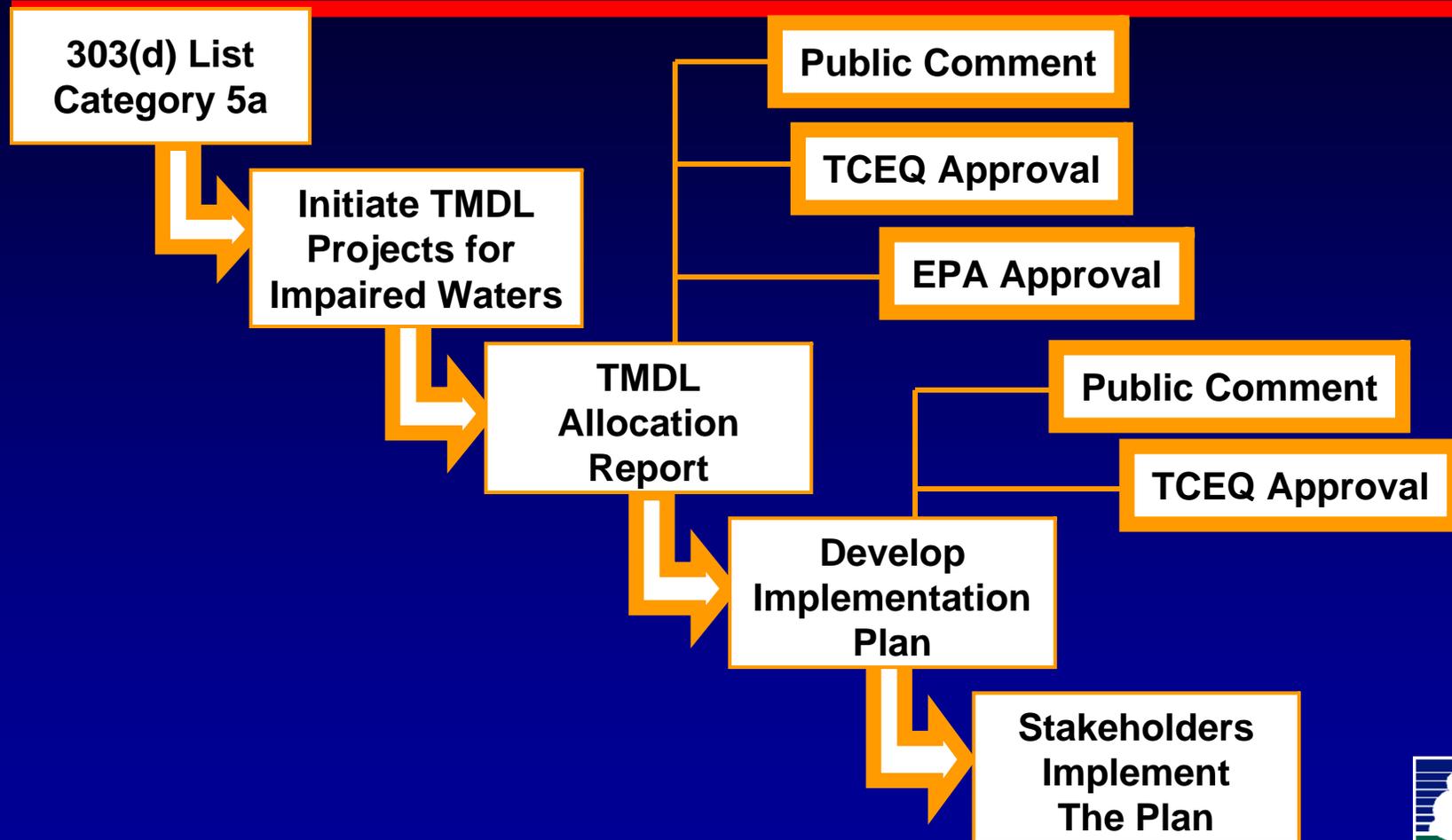
# Main Elements of a TMDL

---

- Problem Definition
- Endpoint Identification
- Source Analysis
- Linkage Between Sources and Receiving Waters
- Margin of Safety
- Pollutant Load Allocation  
(both point, nonpoint,  
and natural)



# TMDL Development Process

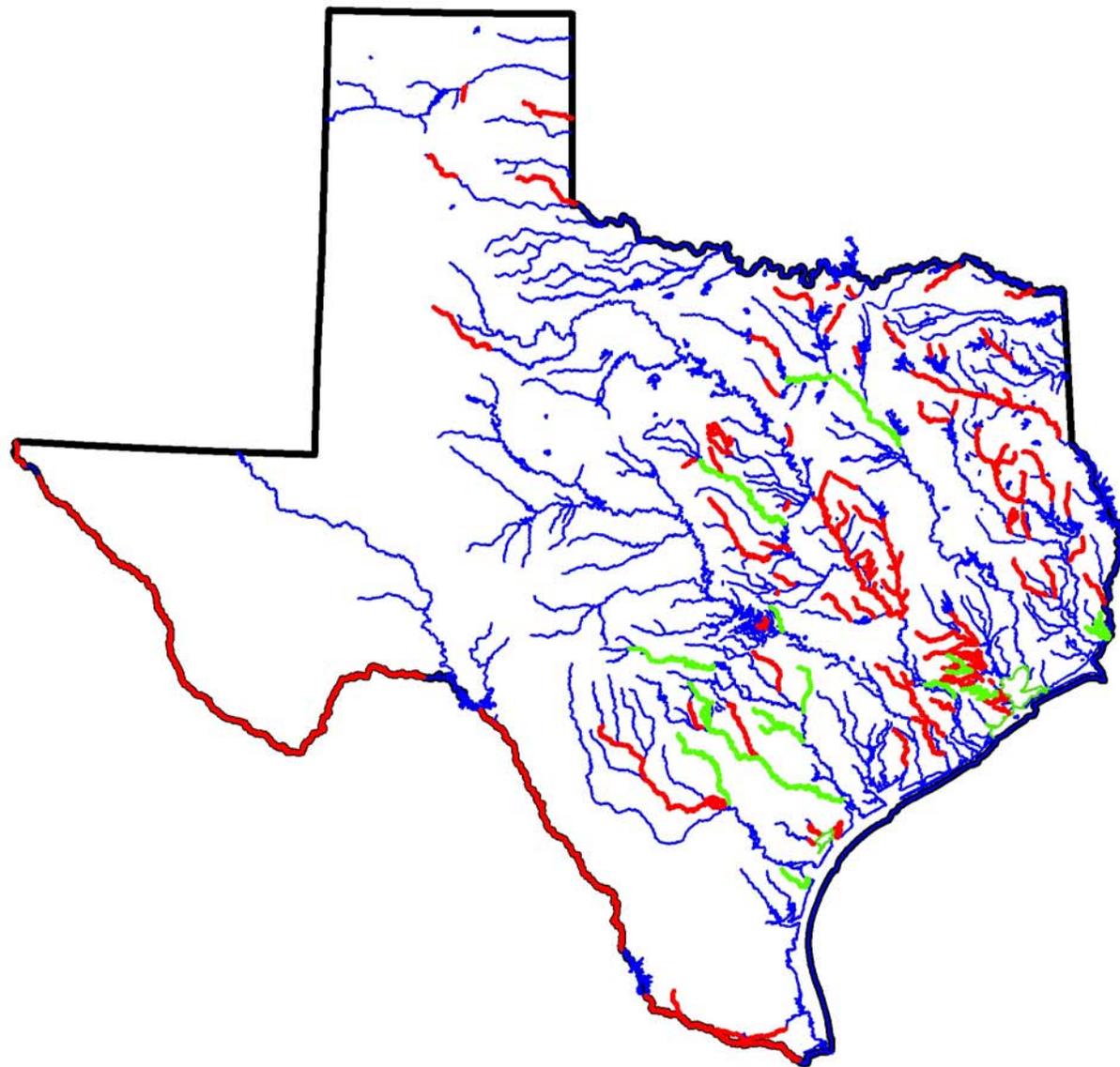


# Two Kinds of Restoration Plans

---

- TMDL Implementation Plans (IPs)
- Watershed Restoration Plans (WRPs)
- Both have the same goal — improving water quality in rivers, lakes, or bays.
- IPs are remedial actions for impaired waters; WRPs may be either remedial or preventive.
- IPs are based on total maximum daily loads; WRPs use other measurable goals for water quality.





# Texas Surface Water Quality Standards

---

## Uses and numerical criteria

Title 30, Chapter 307 of the Texas Administrative Code

**All waterbodies in Texas presumed to have contact recreation except where specifically proven otherwise**

## Two categories of recreation

**Contact – 126 col./100ml**

**Noncontact – 605 col./100ml**



# Texas Surface Water Quality Standards

---

## Use *Attainability Analysis*

Required to change to a use to noncontact

Included as part of rule revisions every three years

EPA has approved few noncontact designations

Currently evaluating UAA procedures to:

Better conduct UAAs

Improve procedures to assess attainment



# Texas Surface Water Quality Standards

---

## Use Attainability Analysis (cont)

### Factors which support a noncontact use

Water not physically amenable to recreation

No evidence of recreation

Seasonal recreation does not and could not occur  
when stream is flowing or in pools under low flow  
conditions



[www.tceq.state.tx.us/water/  
quality/tmdl/](http://www.tceq.state.tx.us/water/quality/tmdl/)



Andrew Sullivan  
asulliva@tceq.state.tx.us  
512/239-4587