Bacteria Reduction Plan

Year One Update

Tara Bushnoe

Natural Resources Coordinator

UGRA

Welcome Stakeholders

- Provide input and feedback on Bacteria Reduction Plan activities
- Stay informed and apprised of all Bacteria Reduction Plan activities
- Assist in disseminating accurate information

Guadalupe River above Canyon Lake TMDL

- Bacteria impairment for contact recreation in a 3.5 mile reach of Guadalupe River in Kerrville
- Placed on 303(d) list in 2002
- TMDL approved in 2007
- Implementation Plan approved in 2011

December 13, 2012

Lauren Young
TCEQ TMDL Program

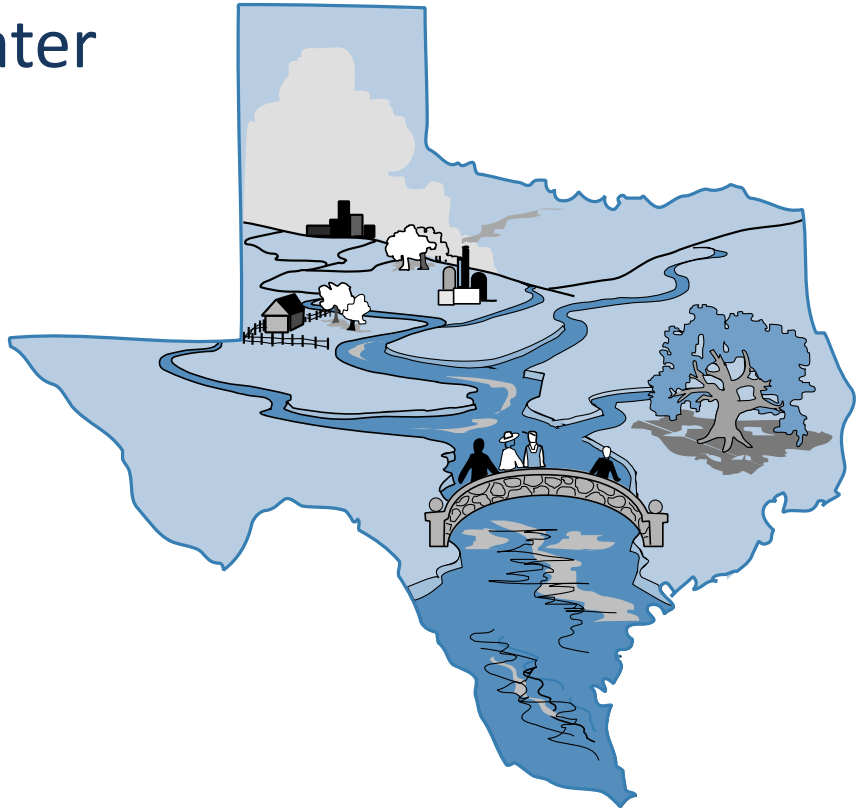
TMDL Implementation Plan Year 1

Key Elements

- TMDL
- Implementation Plan
- Status Updates
- Telling Our Story

What is a TMDL?

- Total Maximum Daily Load
- A basis for restoring water quality

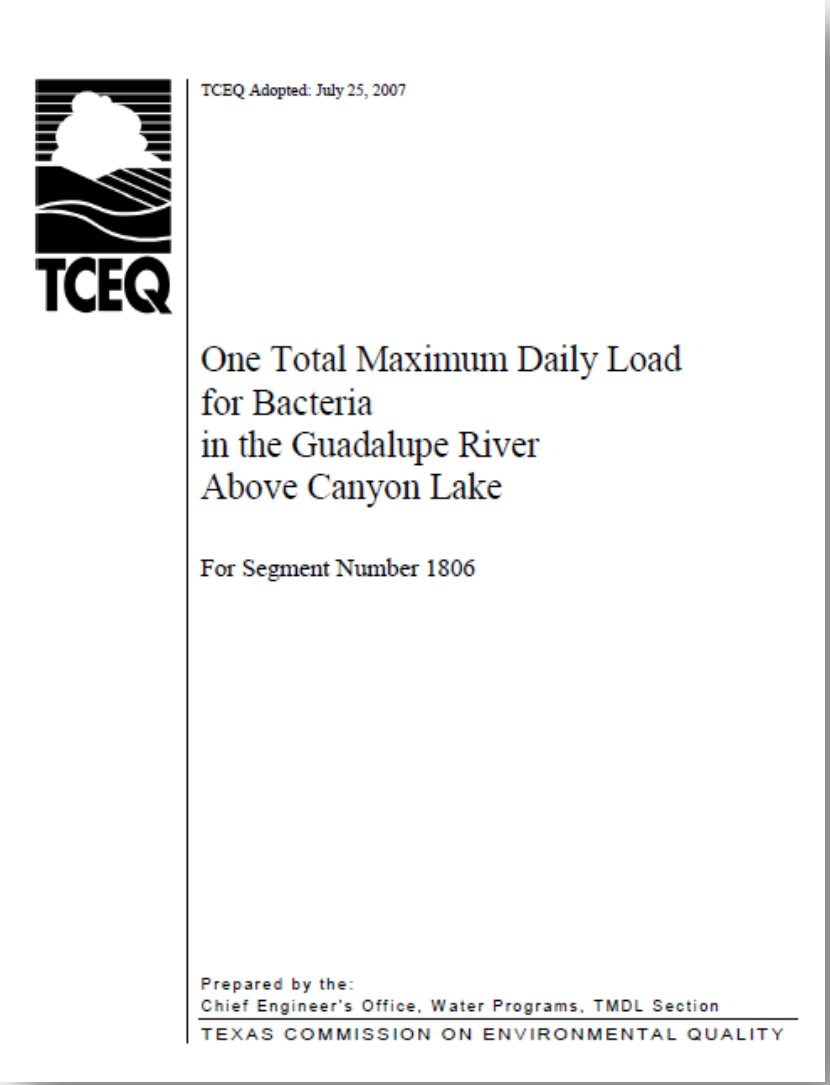


Federal Legal Requirements

- Clean Water Act
  - Identify polluted water bodies - Section 303 (d)
  - Develop TMDLs to guide restoration

Why do a TMDL?

- Restoration
- Tool
- Sources



TCEQ Adopted: July 25, 2007

One Total Maximum Daily Load
for Bacteria
in the Guadalupe River
Above Canyon Lake

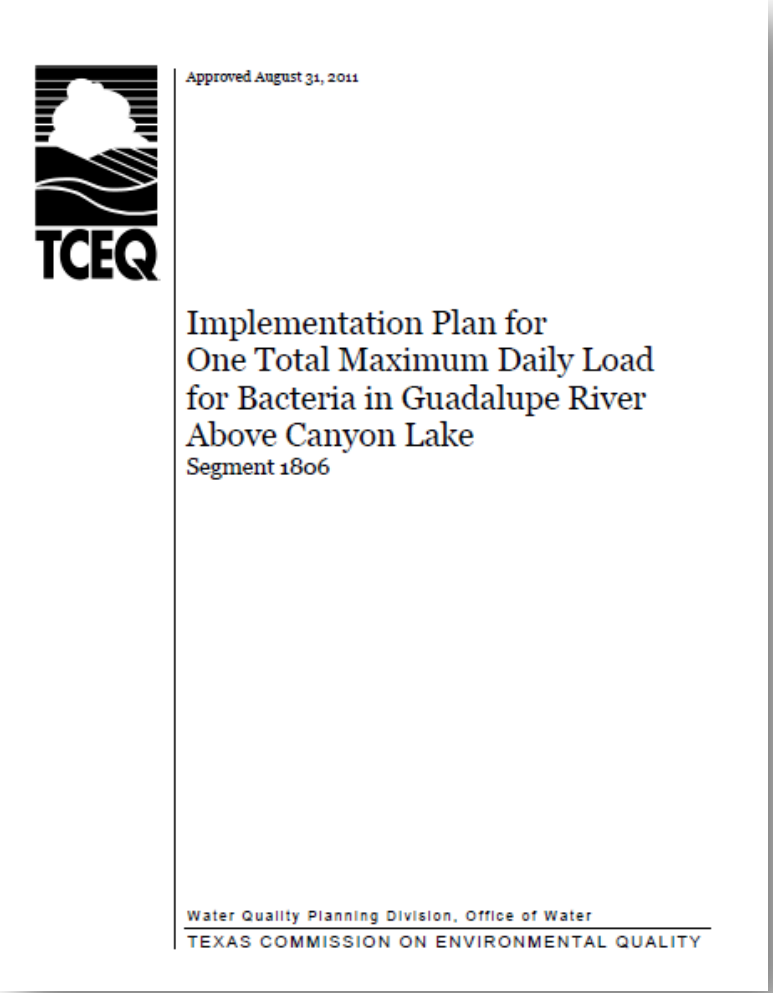
For Segment Number 1806

Prepared by the:
Chief Engineer's Office, Water Programs, TMDL Section
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

What is an I-Plan?

Why do an Implementation Plan?

- TMDL requirement
- Developed by stakeholders
- Approved by TCEQ 8/31/2011



Approved August 31, 2011

TCEQ

Implementation Plan for
One Total Maximum Daily Load
for Bacteria in Guadalupe River
Above Canyon Lake
Segment 1806

Water Quality Planning Division, Office of Water
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Why GRACL?

Impaired Segment
Stream Segment
Project Watershed
Junction
MASON
LLANO
KIMBLE
GILLESPIE
BLANCO
Fredericksburg
Pedernales River
KERR
Johnson Creek
Ingram
Blanco
North Fork Guadalupe River
1806 Guadalupe River Above Canyon Lake
Kerrville
Comfort
KENDALL
Canyon Lake
South Fork Guadalupe River
REAL
COMAL
BANDERA
BEXAR
MEDINA
San Antonio
UVALDE
Hondo
0 5 10 15 20 Miles

Ultimate Goal

- Reduce bacteria concentrations

copyright Matthew Lee High

Wildlife
Wastewater
Human Contributions
GRACL I-Plan
Urban Runoff
Pet Waste

Bacteria Reduction Plan

- Funded by TCEQ Non Point Source Program
- $475,201 Total Project
  - 60% Federal Funding ($285,121)
  - 40% Local Match ($190,080)
- October 15, 2011 – August 31, 2014
- Partners
  - UGRA
  - City of Kerrville
  - Kerr County
  - TXDOT

Wildlife

- Install bird exclusion/deterrent structures
- Reduce bird feeding
- Manage waterfowl population
- Partners involved:
  - UGRA
  - City of Kerrville
  - Kerr County
  - TxDOT

copyright Matthew Lee High

Wildlife Results

- Install bird exclusion/deterrent devices
  - Bird deterrent structures designed for SH 16 and SH 534 bridges
  - Plans reviewed by local partners
  - Comments incorporated
  - TXDOT utility installation agreement
  - Publically bid
  - Contractor selected
  - Construction start date December 17th

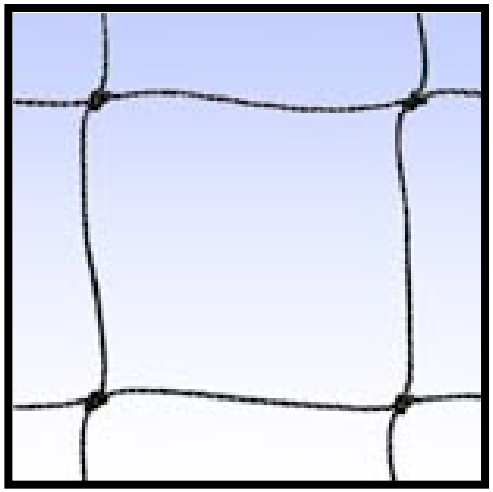
Wildlife Results

- Installation of bird deterrent structures on three sections of SH 16 bridge

- Lane closures – one lane in each direction

Spikes

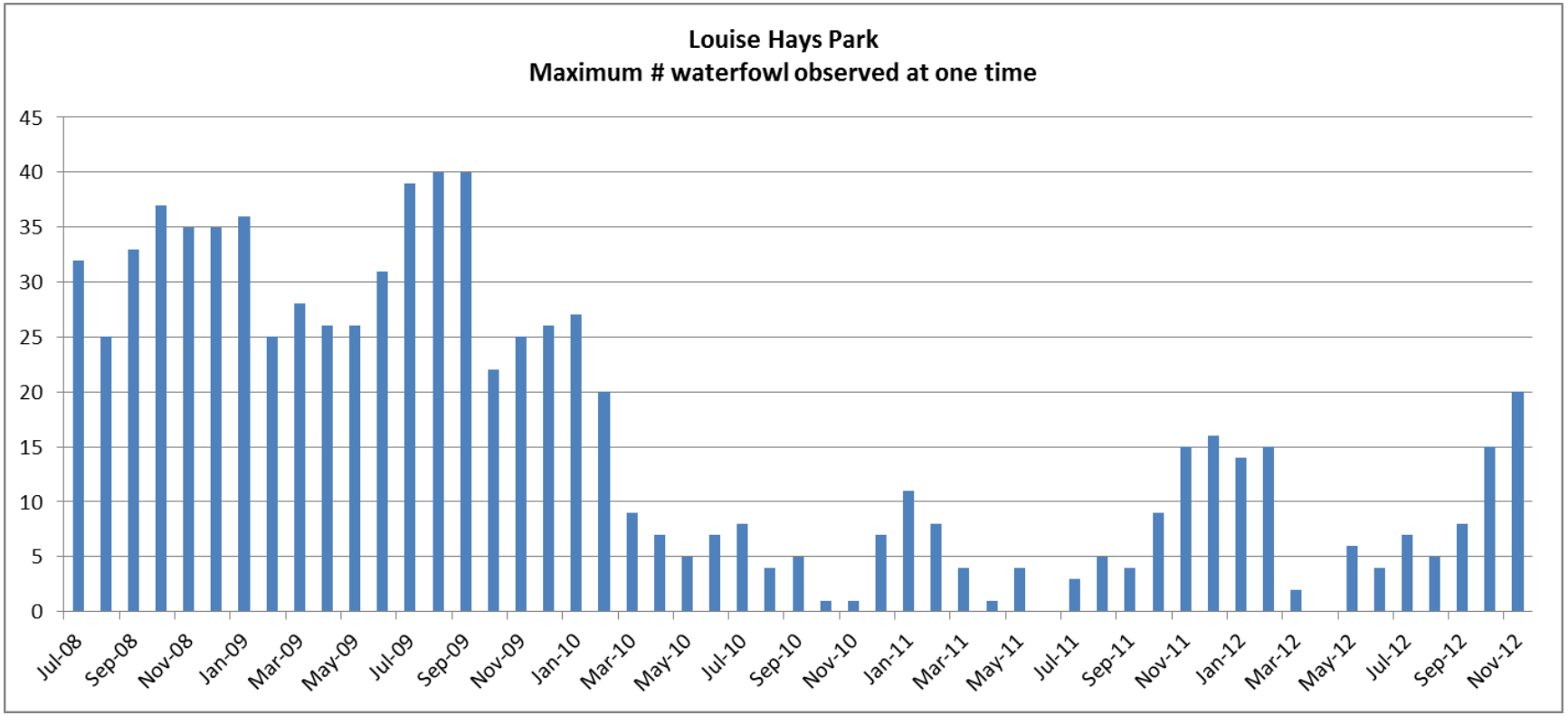
Netting



3/4-inch mesh polyethylene

Wildlife Results

- Reduce bird feeding
- Manage waterfowl population



Wildlife Results

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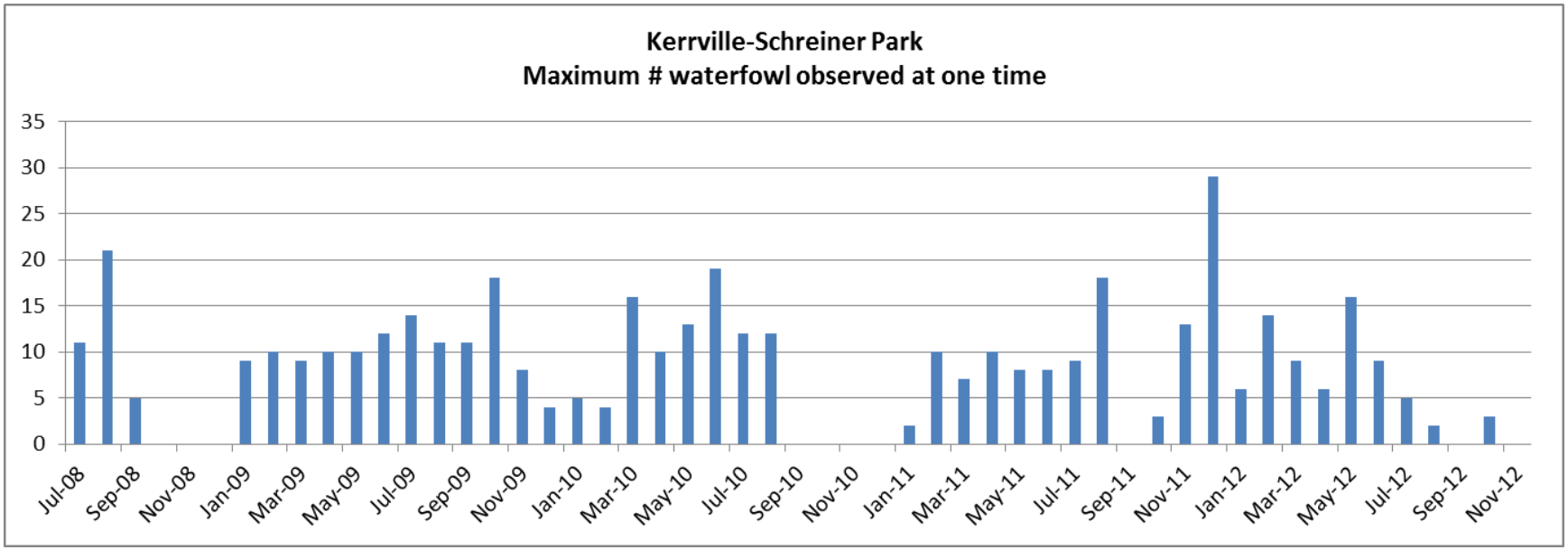
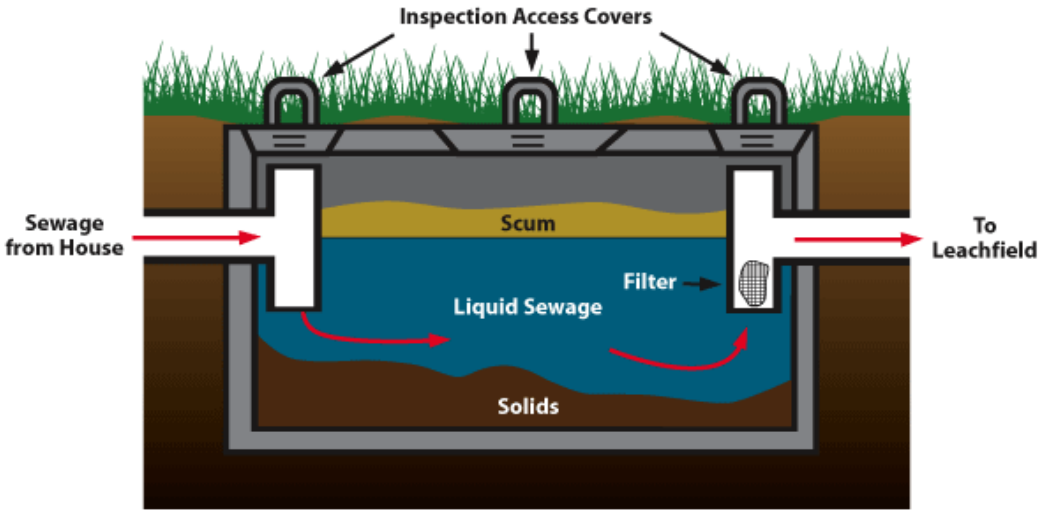


Human Contributions

- Ongoing lateral sewage line replacement
- Sewer inspection and rehabilitation
- OSSFs
- Partners involved:
  - UGRA
  - City of Kerrville
  - Kerr County
  - TxDOT



Human Contributions Results

- Improvements to wastewater collection systems
  - $7,938,219.60 spent on improvements
  - 25,660 lateral feet of collection line system repaired/replaced
  - 1 lift station replaced (Birkdale)
  - 15 manholes replaced
  - 59 manholes rehabilitated
  - 9 city cleanouts replaced
  - 276 customer service cleanouts repaired

Human Contributions Results

- Gravity main footage
  - 54,481 lateral feet inspected via camera
  - 190,225 lateral feet cleaned/vacuumed
  - 1,698 lateral feet root sawed

WOW!

Human Contributions Results

- Mapping of On-site Sewage Facilities (OSSF)
  - Designate priority area – 300 feet from waterbody
  - Identify properties in area
  - Cross reference with OSSF database

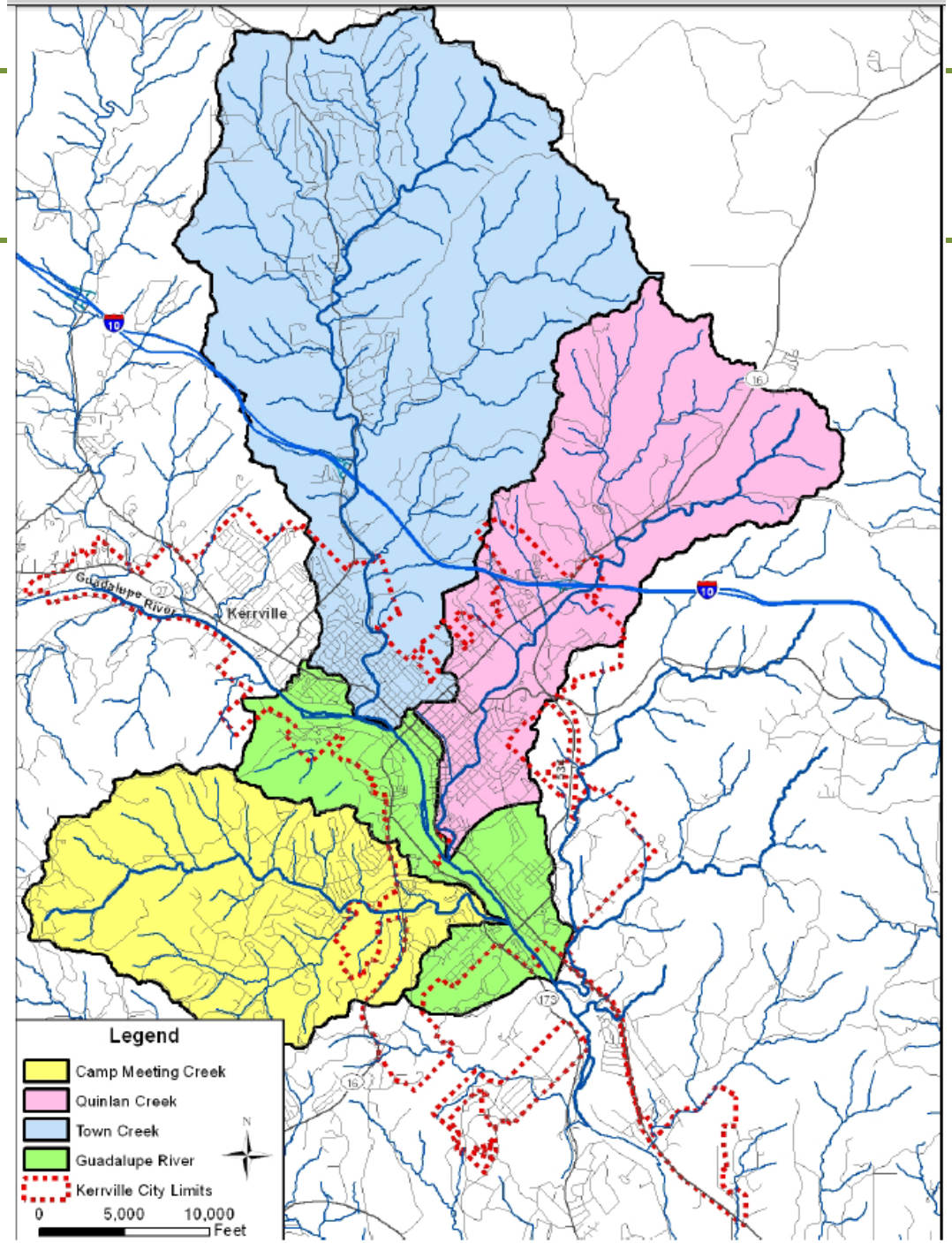


Figure 1: Guadalupe River (Segment 1806) and Study Area Subwatersheds

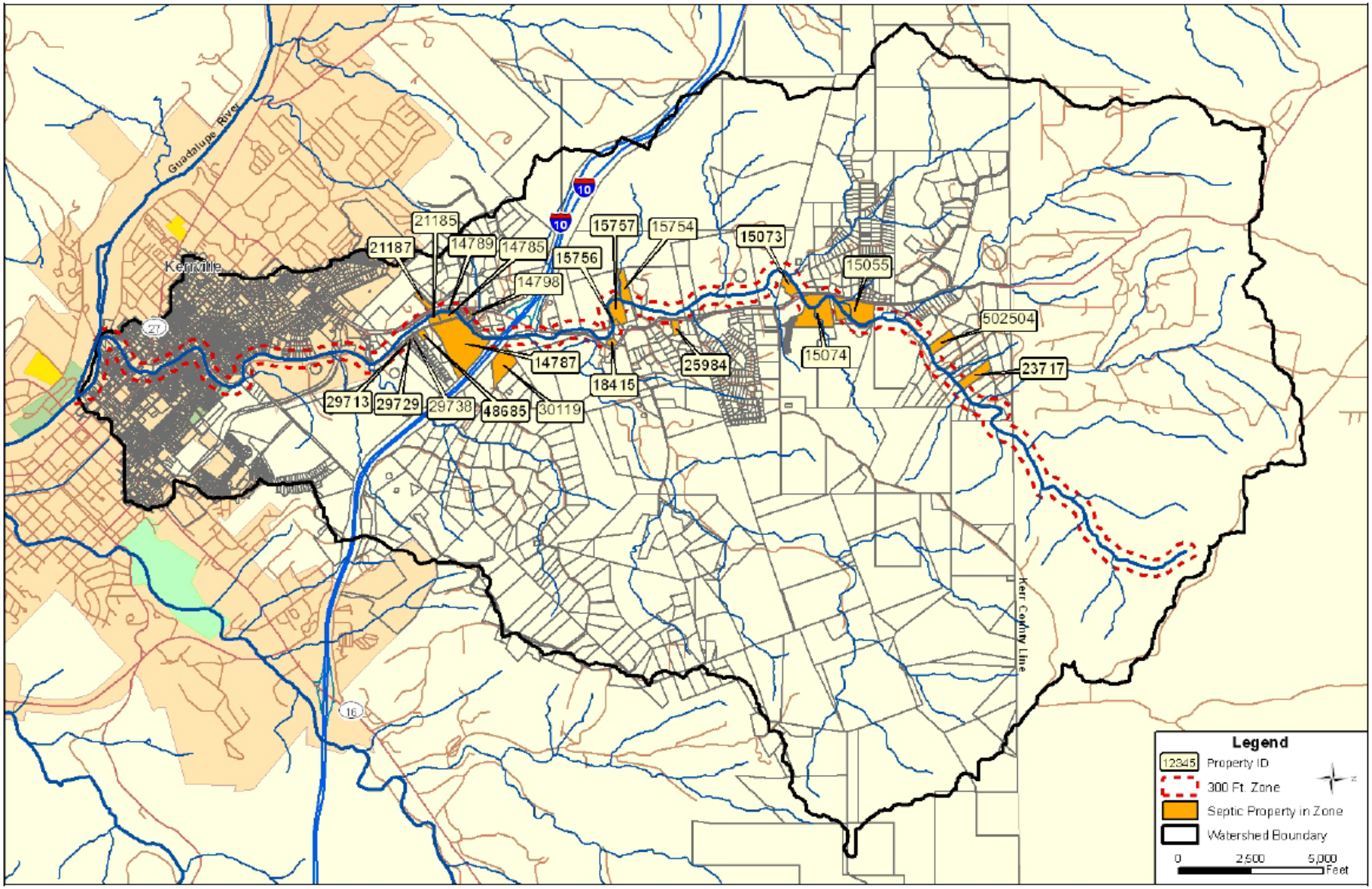


Figure 2: Town Creek Septic System Priority Zone

Human Contributions Results

- Summary of OSSFs in priority area

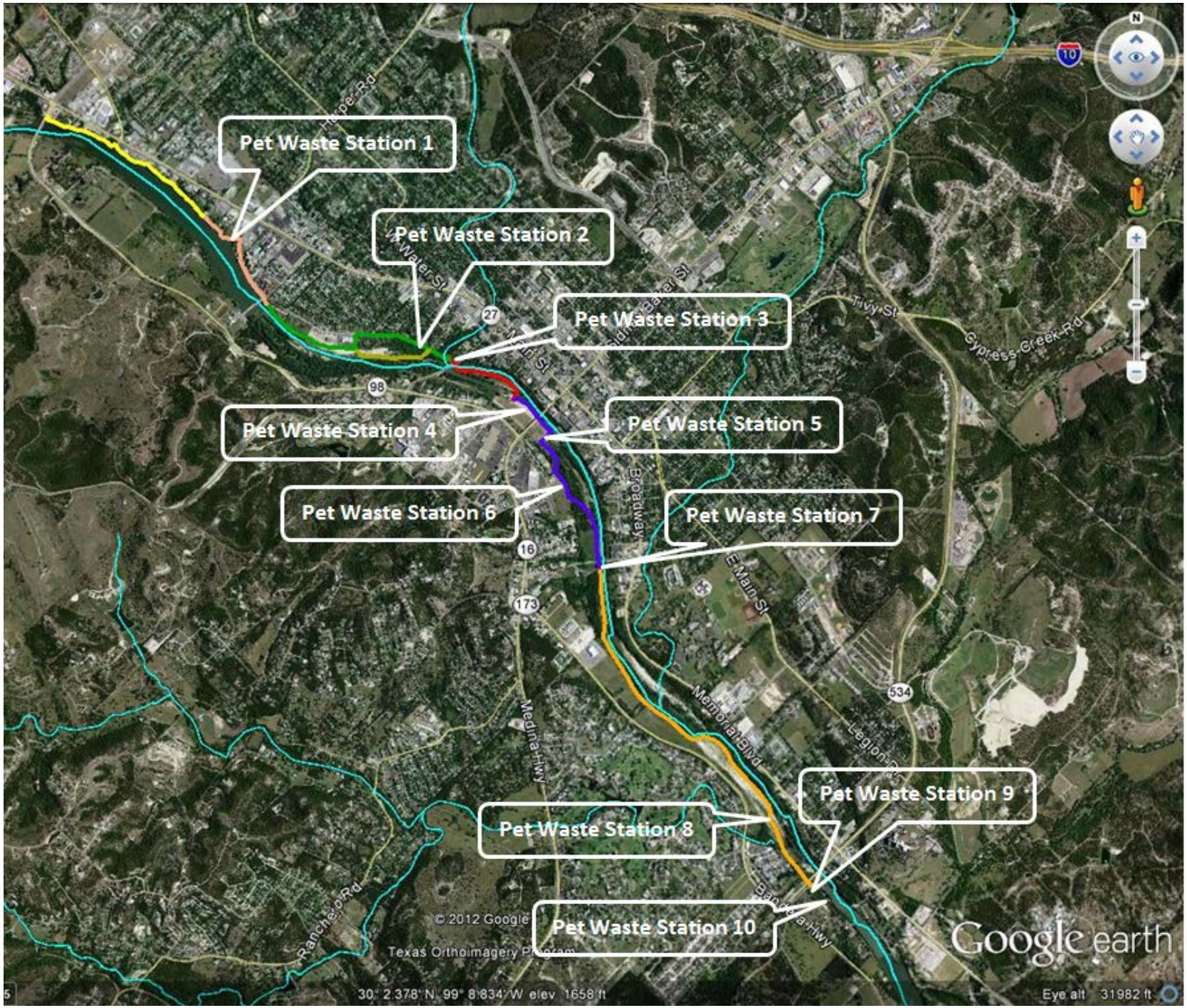
Watershed	Total Number of Septic Properties	Number of Septic Properties in Priority Area
Town Creek	276	21
Camp Meeting Creek	906	69
Quinlan Creek	121	9
Guadalupe River	84	6
Total	**1390**	**105**

Pet Waste

- Implement education program
- Install pet waste stations
- Partners involved:
  - UGRA
  - City of Kerrville
  - Kerr County

Pet Waste Results

- Seven active station in Flat Rock Park
- Five active stations in Kerrville Parks
- Ten planned stations along River Trail


Pet Waste Station 1
Pet Waste Station 2
Pet Waste Station 3
Pet Waste Station 4
Pet Waste Station 5
Pet Waste Station 6
Pet Waste Station 7
Pet Waste Station 8
Pet Waste Station 9
Pet Waste Station 10
Broadway
E Main St
Medina Hwy
Memorial Blvd
Cypress Creek Rd
Ranchero Rd
© 2012 Google
Texas Orthoimagery Program
Google earth
30° 2'378" N 99° 8'634" W elev 1658 ft
Eye alt 31982 ft

Pet Waste Results

- Education materials in Years 2 and 3
- Effectiveness monitoring
  - Weekly monitoring
  - 80-100 pounds of waste/month
  - **2,700 pounds removed since November 2010**
  - 1,207 pounds removed in Year One

Urban Runoff

- Storm water education programs
- River clean ups
- Street sweeping
- Partners involved:
  - UGRA
  - City of Kerrville

Urban Runoff Results

- Interactive kiosk coming soon
- Watershed model presentations
- Clean ups
  - 2012 UGRA Annual River Clean 11,165 pounds
  - UGRA Annual River Crossing Clean Up Program 16,170 pounds
  - Tim Lewis work on Town Creek
- City of Kerrville 488 hours of street sweeping

Wastewater

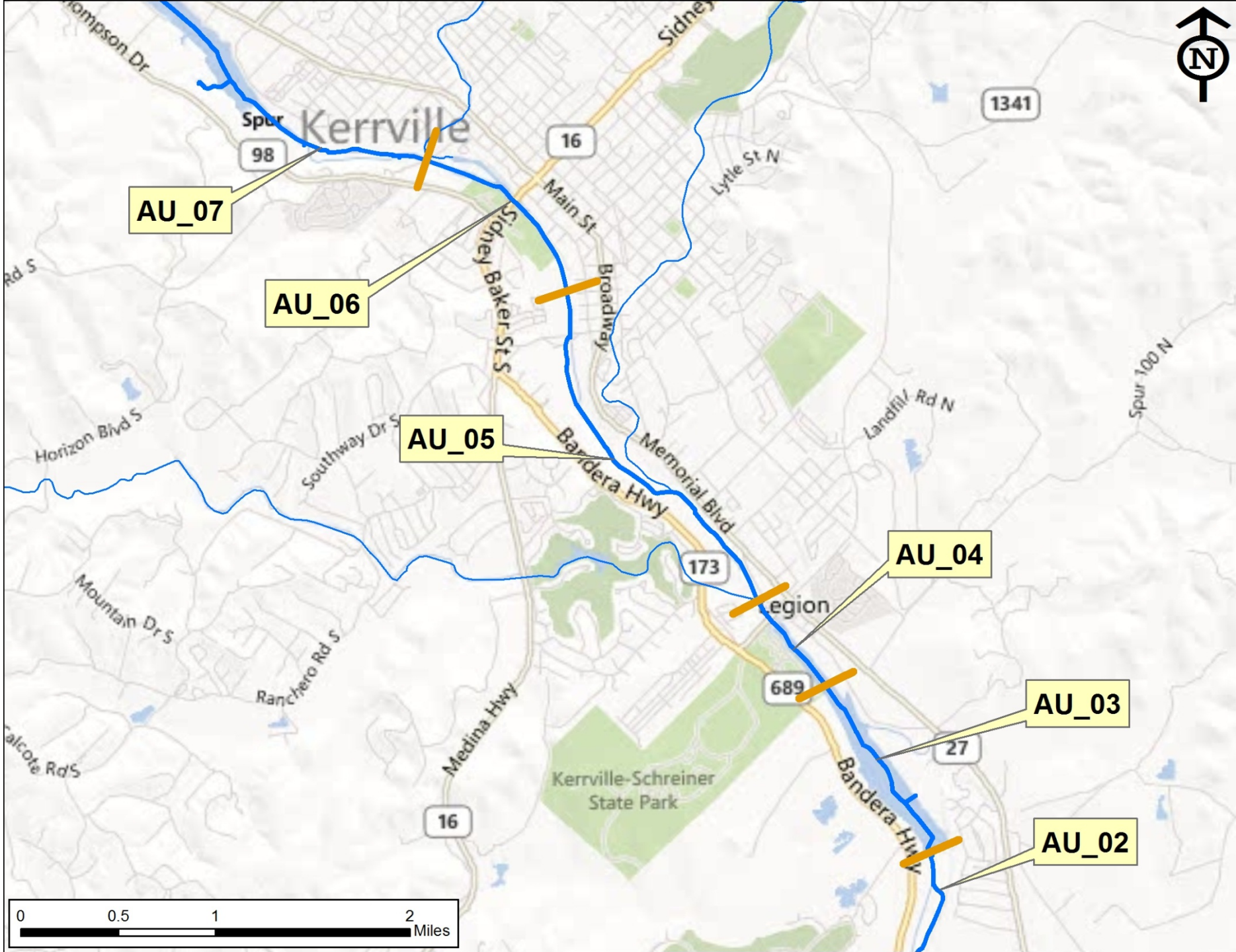
- Monitor and report *E. coli* concentrations
- Partners involved:
  - Local WWTFs
  - TCEQ TMDL Program

Wastewater Results

- WWTFs
- TCEQ TMDL Program
  - Review water quality data
  - Single WWTF not currently operating

Texas Integrated Reports

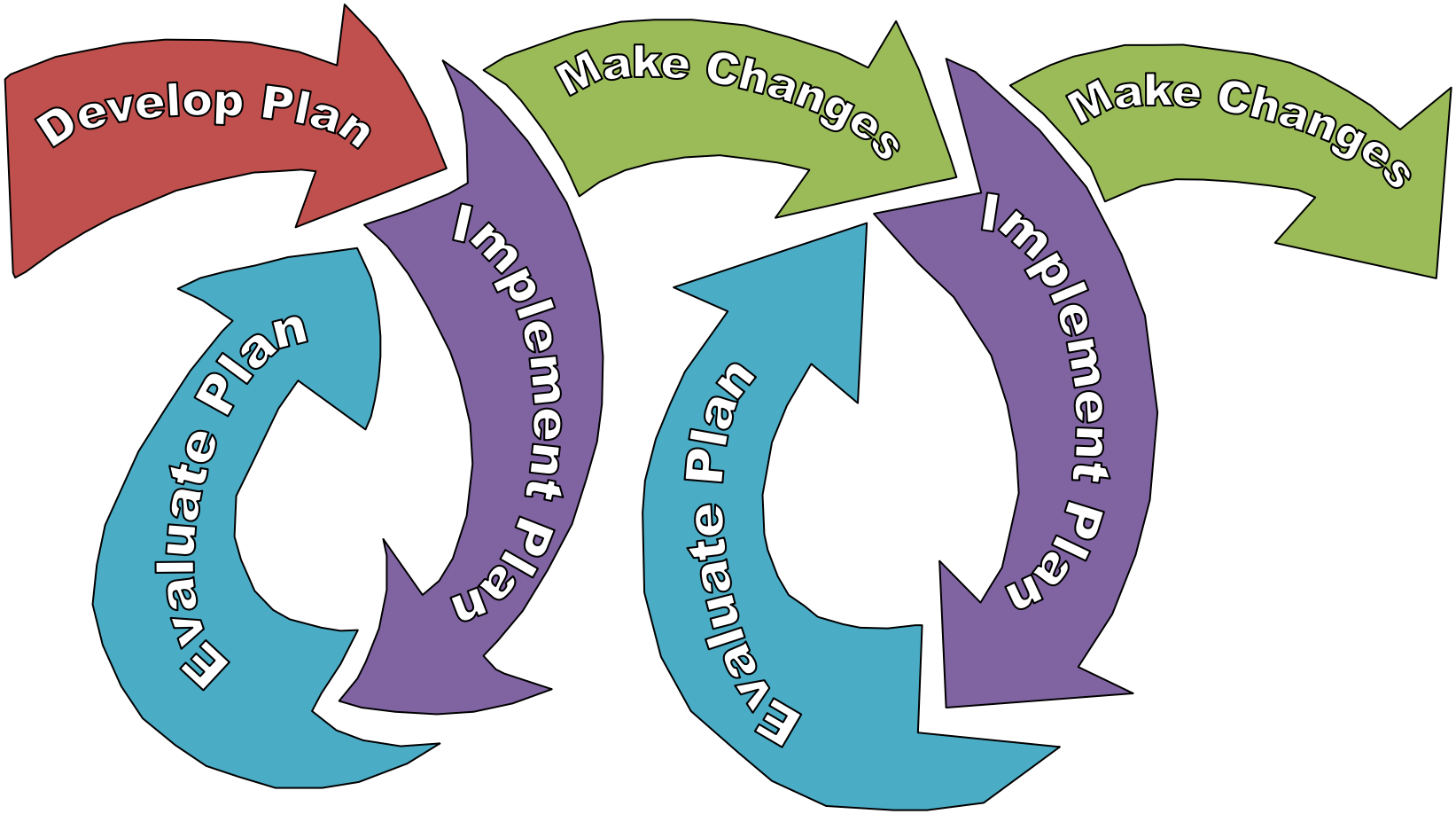
- Segment 1806
- Contact recreation use
  - *E. coli* samples
  - Geometric mean exceeds 126 cfu/100mL


AU_07
AU_06
AU_05
AU_04
AU_03
AU_02
Kerrville
Spur
98
16
Main St
Sidney Baker St S
Broadway
Lytle St N
1341
Bandera Hwy
Memorial Blvd
173
Legion
689
27
Landfill Rd N
Spur 100 N
Horizon Blvd S
Southway Dr S
Mountain Dr S
Ranchero Rd S
Medina Hwy
Kerrville-Schreiner State Park
0
0.5
1
2
Miles

What's Next?

- Year 2
  - Continuation of Year 1 activities
  - Complete bird deterrent structures
  - Install pet waste stations
  - Waterfowl management
  - OSSF homeowner's guide
  - Education
  - Evaluating effectiveness

Adaptive Management



What's your story?

Google
LinkedIn
YouTube
bing

10
Ingram
39
27
Town
Creek
98
394
Kerrville
534
Impaired Reach
173
100
Flat Rock
Lake
16
19
Impaired Reach
0
1
2 Miles
N

- Cleanups, Remediation
- Emergency Response
- Licensing
- Permits, Registrations
- Preventing Pollution
- Recycling
- Reporting
- Rules

- Data
- Forms
- Maps
- Public Notices
- Publications
- Records
- Webcasts

- About Us
- Contact Us

How 's our Customer Service? Please fill out our Customer

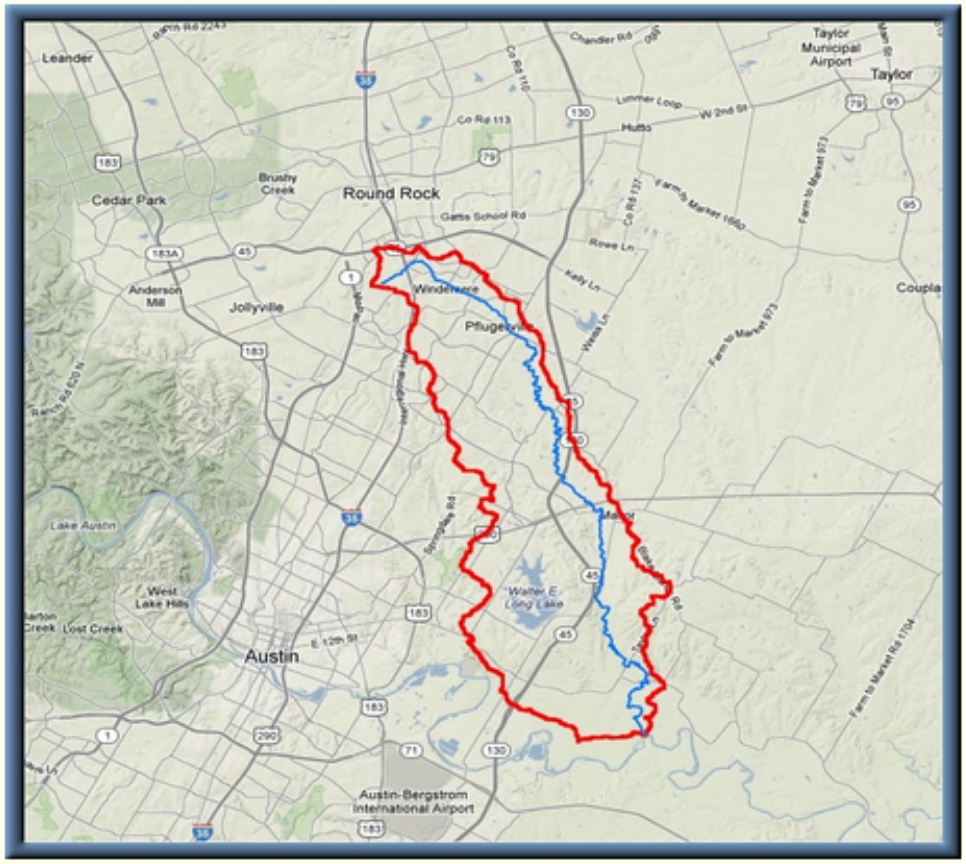
Gilleland Creek: Implementing a TMDL for Bacteria

The goal of this project is to make recreation safe in Gilleland Creek by reducing bacteria. The adopted TMDL and the approved I-Plan combined are the road map to improving water quality in the creek.

Back to TMDL Projects

Watershed County: Travis
Parameter: Bacteria
River Basin: Colorado
Segment: 1428C

- Overview
  Why there's a project for Gilleland Creek
- Participate
  Ways to get involved, including meeting notices
- Partners
  People and agencies working on this project
- Status and Activities
  What's going on and what's been done to improve water quality
- Videos, News, and Galleries
  Videos, news, maps, and photos



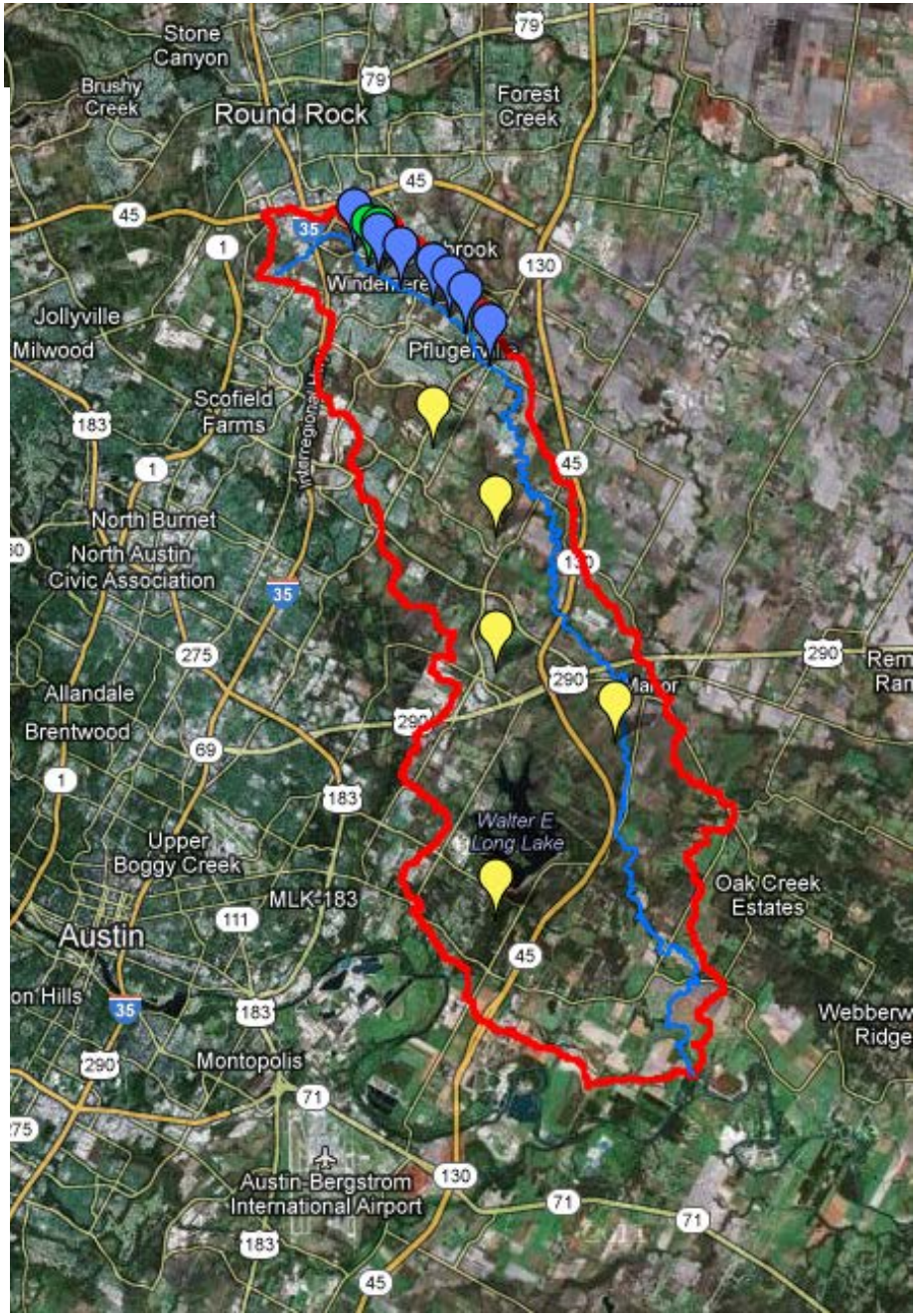
Click map to see monitoring stations, permitted discharges, flood control project sites, and educational inititatives

Google maps

Displaying content from www.tceq.texas.gov
The content displayed below and overlaid onto this map is provided by a third party, and Google is not responsible for it. Information you enter below may become available to the third party.

Contents

- [x] Gilleland Creek
  - [ ] Gilleland-AUs
    - [x] Features
  - [ ] Gilleland Creek Watershed
    - [x] Features
      - [x] Watershed Outline
  - [x] Monitoring Stations
  - [ ] General Information
    - [x] Gilleland - General Information
      - [x] Pet Waste
        Pet Waste Travis County and City of Pflu
    - [x] Gilleland - General Information
      - [x] Water Quality Ordinances
        Water Quality Ordinances The Travis Coun
    - [x] Gilleland - General Information
      - [x] Wastewater
        Wastewater City of Austin, City of Pflug
    - [x] Gilleland - General Information
      - [x] Riparian Zones
        Riparian Zones Texas Wildlife Service
    - [x] Gilleland - General Information
      - [x] Septic Systems
        Septic Systems The authorized agents (Tr
  - [ ] Retrofitting Flood Control



LCRA CRWN Site 369

Gilleland Creek at Swenson Farms

LCRA's Colorado River Watch Network (CRWN) is the first and largest regional volunteer network of water quality monitors in Texas. Trained volunteers submit water quality data that is reviewed and analyzed by CRWN staff, creating an early warning system that alerts LCRA to potential water quality threats.

Project Web Page

Directions Search nearby Save to map more

Questions?

TBushnoe@ugra.org 830-896-4546
Lauren.Young@tceq.texas.gov 512-239-3182