

**TMDL-Implementation in the
Upper
San Antonio River
Salado & Walzem Creek
January 2008 – August 2010**



History

Salado Creek and Upper San Antonio River were first identified as impaired due to bacteria in the 2000 Texas Water Quality Inventory and 303(d) List (TCEQ 2000).

Walzem Creek was added to the list in 2002.

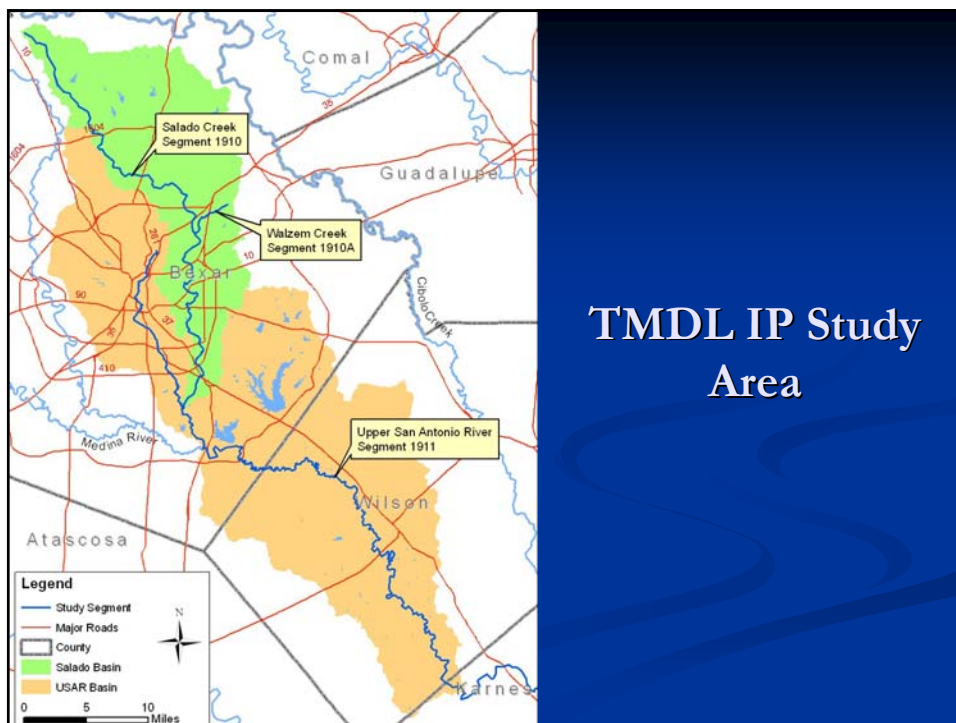
TMDL Adopted by TCEQ July 2007

Bacteria Impaired Reaches

Upper San Antonio River (44 sites) – San Antonio Springs to Wilson County Rd 125 and from 2.5 miles upstream of FM 536 to 4 miles below FM 541.

Salado Creek (23 sites) – 1.5 miles upstream of Loop 410 N to confluence with the Upper San Antonio River

Walzem Creek (3 sites)– 1.5 miles upstream of Walzem Rd. to its confluence with Salado Creek.



San Antonio River



Monitoring Objectives

- Locate and characterize sources of *E. Coli*
- Provide additional data on *E. Coli* loads
- Monitor before, during, and following implementation of controls

Sampling Types

Routine Synoptic
Sampling

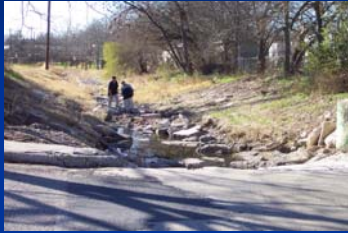
Spatially Intensive
Survey



Salado Creek



Walzem Creek

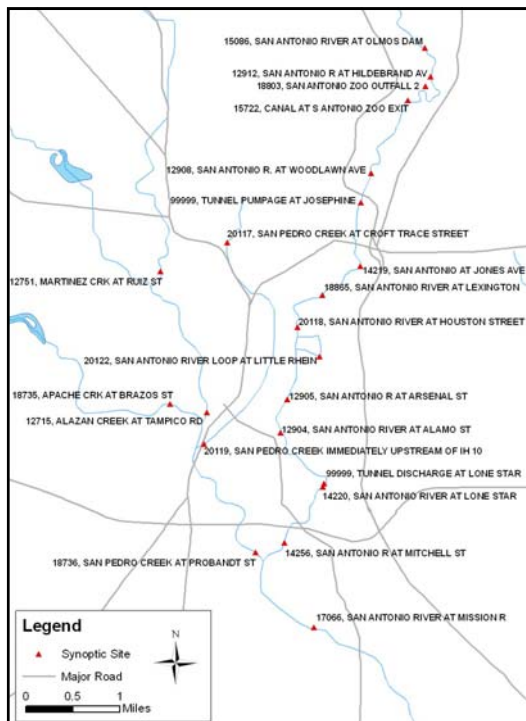


West Side Creeks



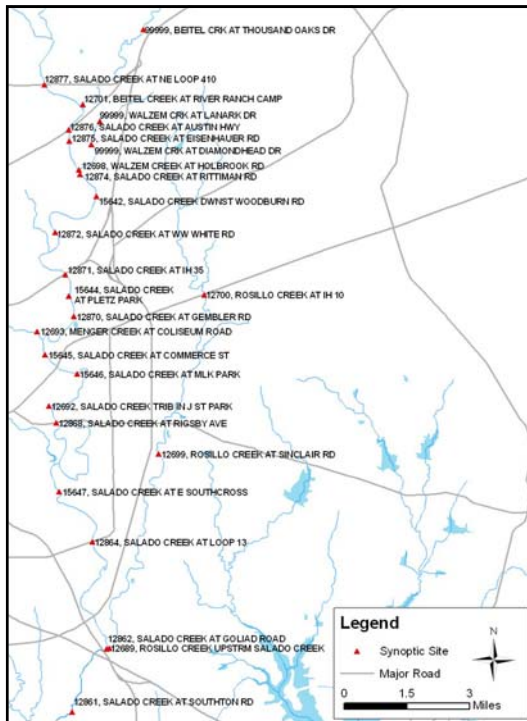
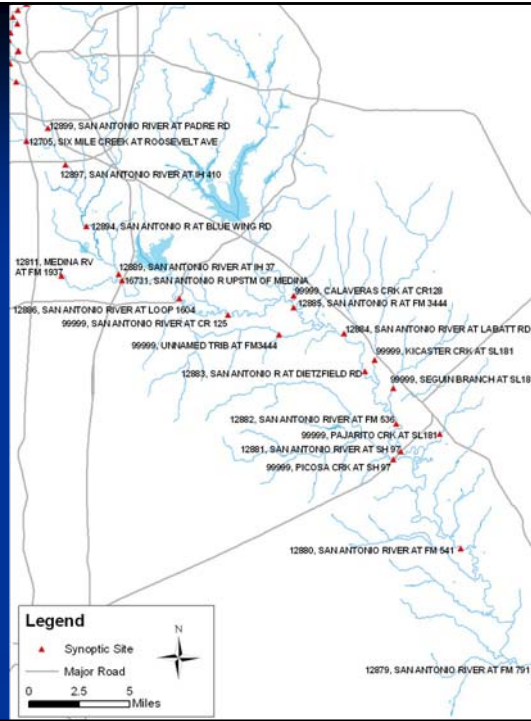
Monitoring Sites

- Representative of in stream conditions
- Maximize spatial coverage
- Assess all potential sources
(outfalls, tributaries, and seeps)
- Historical data sites
- Bracket sources



USAR Synoptic
Sampling Stations
above Loop 13

USAR Synoptic Sampling Stations below Loop 13



Salado Creek Sampling Stations

Routine Synoptic Sampling

Monthly Sampling

These surveys will be important for determining changes in bacteria levels over time

Samples will be collected at 44 sites in the Upper San Antonio River watershed and 26 sites in the Salado Creek watershed.

Synoptic Sampling Reach

	Miles
San Antonio River	
Olmos Dam to 410 South	14
410 South to FM 791 (Falls City)	66
San Pedro Creek	14
Westside Creeks	9
Salado Creek	
410 North to Rosillo Creek	27
Walzem Creek	3.5
Total	133.5

Spatially Intensive Survey

3 surveys proposed

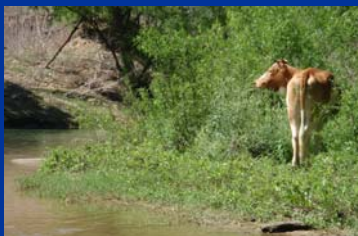
70 Routine Synoptic Sampling Sites

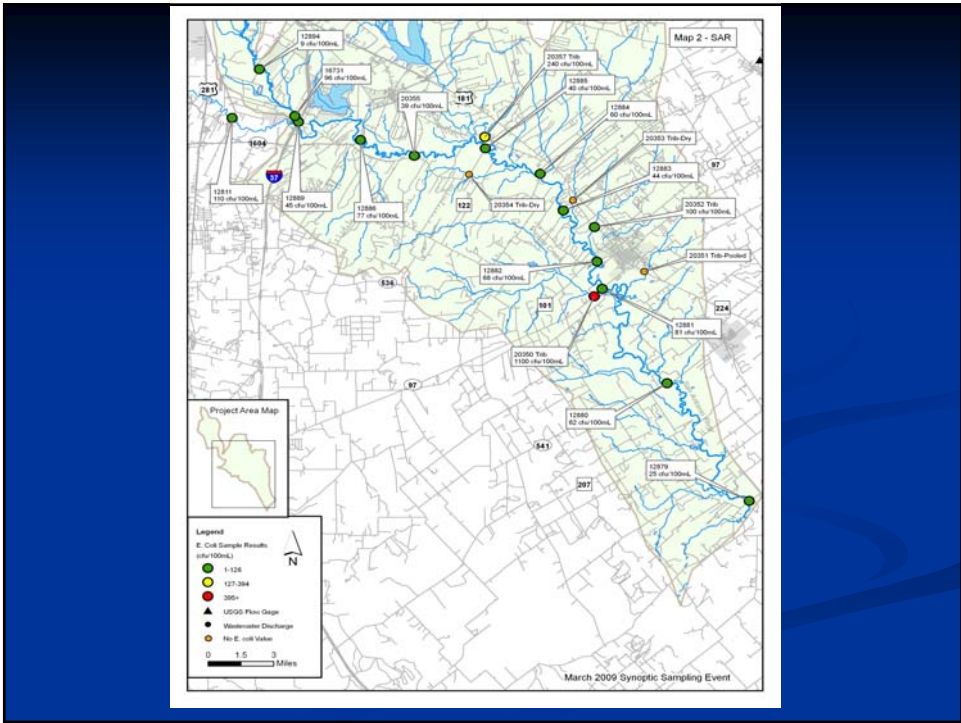
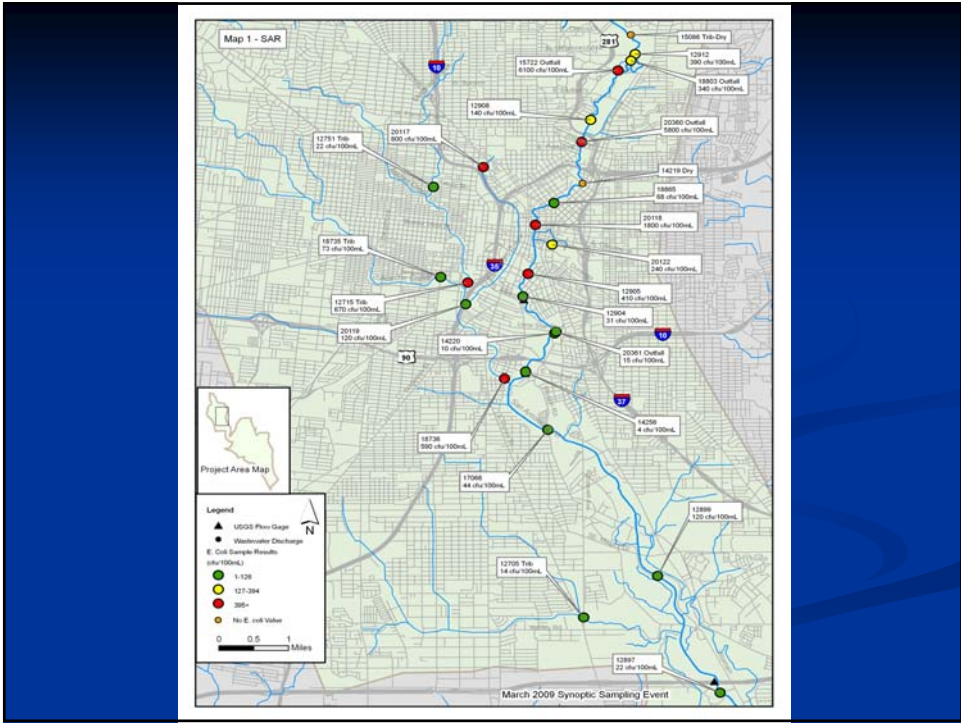
1-mile intervals between synoptic sites on the San Antonio River upstream of Loop 410

3-mile intervals between synoptic sites downstream of Loop 410.



Other Sources of Bacteria





Parameters

- E coli Bacteria
- Dissolved Oxygen
- Temperature
- pH
- Conductivity
- Flow
- Water Color
- Water Odor
- Days Since Last Rain



Best Management Practices

Draft BMP Report

February 2009

The final BMP document will provide the basis for moving forward with implementation of control measures designed to reduce bacteria concentrations within the impaired reach to levels that comply with the Texas State Stream Standards.

Reductions

- 90% reduction in nonpoint loading to Salado and Walzem Creeks
- 60% reduction in urban storm water loading to Salado and Walzem Creeks
- 99.9 % reduction in base flow loading from the SA Zoo to the USAR
- 50% reduction on nonpoint source loading to the USAR
- 30% reduction in urban storm water loading to the USAR

Questions