



Lower Guadalupe River Instream Flow Study Update

March 24, 2016



**Identify/Engage Stakeholders &
Orientation Meetings**

Jan. - Feb. 2013



**Collect Baseline
Information and Evaluate**

Summer 2014



Study Design Workgroup

April - June 2013



**Goal Development Consistent
with Sound Ecological
Environment**



June 2015

Study Design

Spring 2016

**Peer
Review**

**Summer 2013
- Summer 2016**

**Multidisciplinary
Data Collection
and Evaluation**



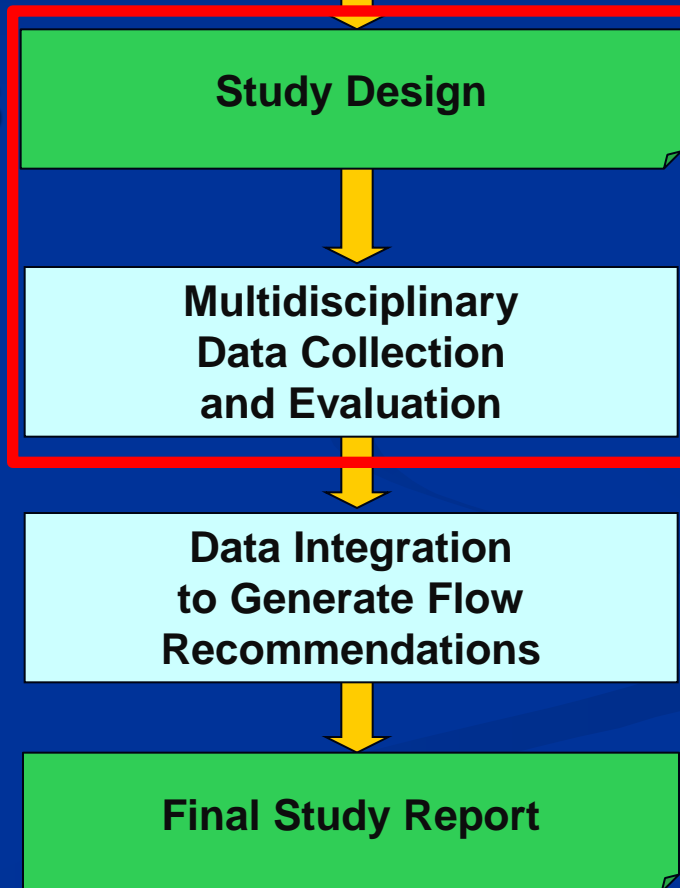
**Data Integration
to Generate Flow
Recommendations**



Final Study Report

**Peer
Review**

Timeline for Lower Guadalupe Study



Draft Study Design

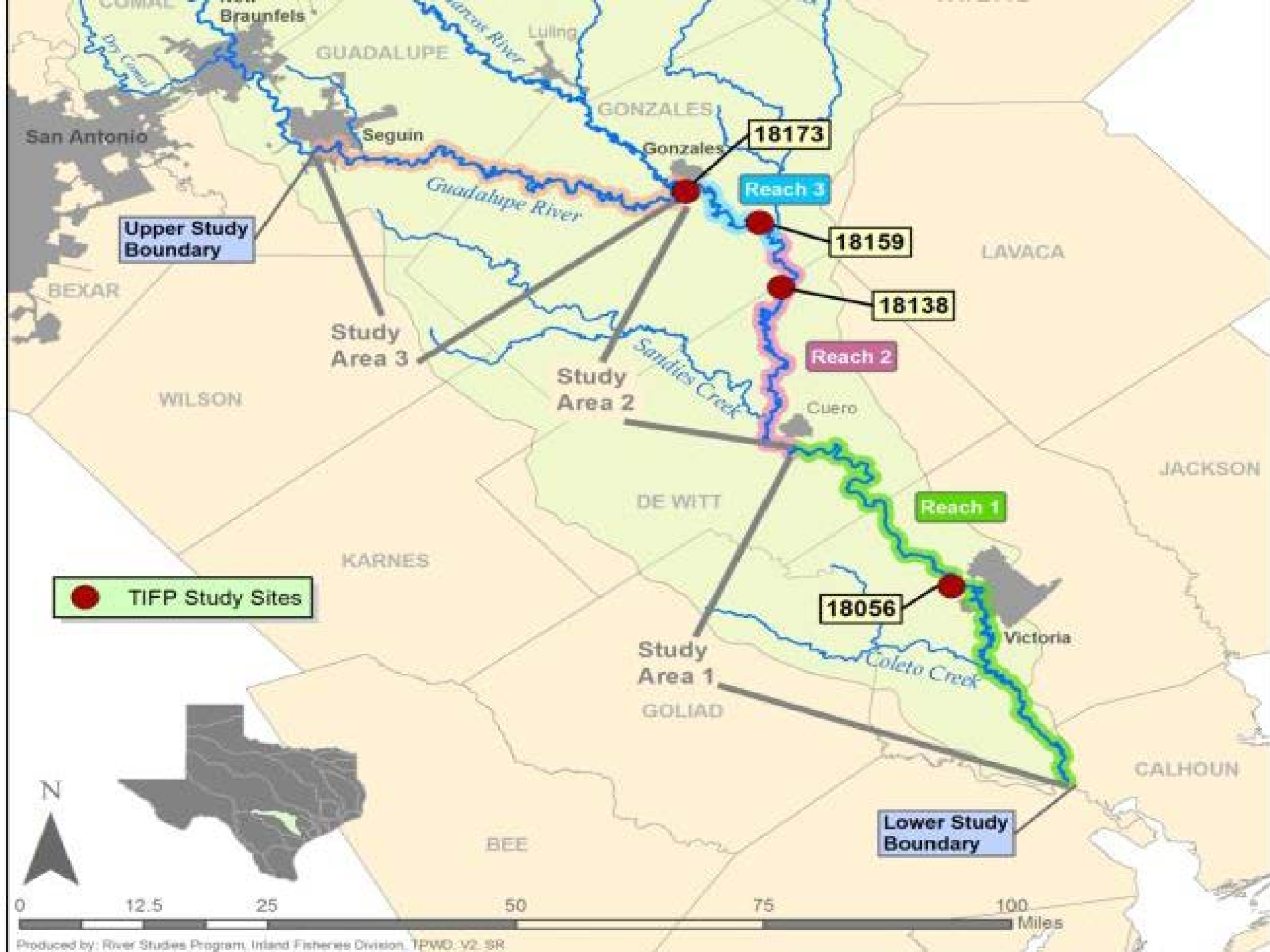
- Agencies held stakeholder meetings to gather input on goals, objectives, and indicators for the Guadalupe River
- First draft developed by agencies and GBRA (June 19, 2015); reviewed by stakeholders
- Multidisciplinary assessment to address flow components
- Currently being revised to submit for scientific peer review

Lower Guadalupe River Priority Instream Flow Study Draft Study Design



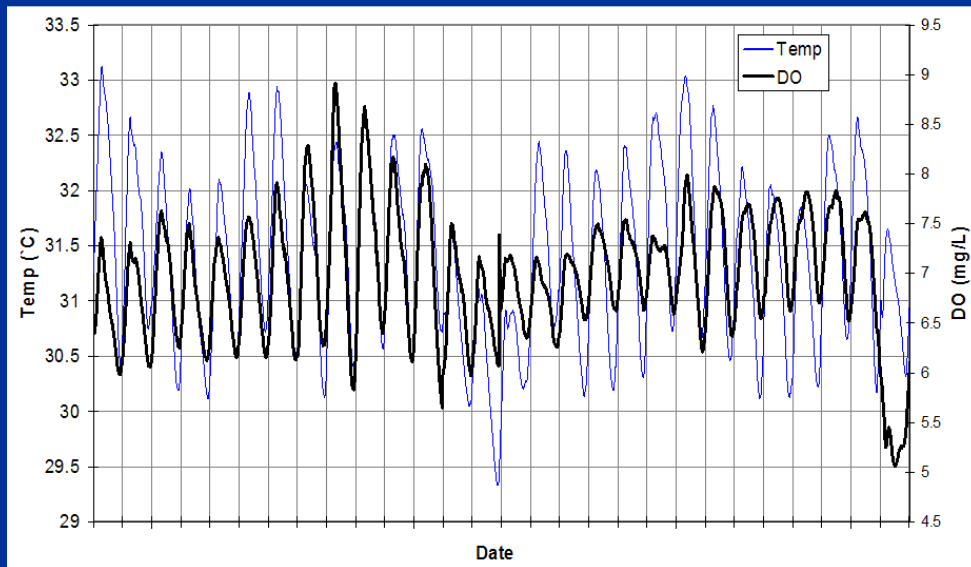
Goal Statement

The goal for the Lower Guadalupe River is a healthy, sustainable ecosystem with native flora and fauna and natural processes that provides ecological, economic, recreational, and educational benefits.



Ongoing Studies

- Riparian evaluation
- Connectivity studies
- Habitat modeling (fish, mussels, macroinvertebrates)
- Sediment transport modeling
- WQ modeling



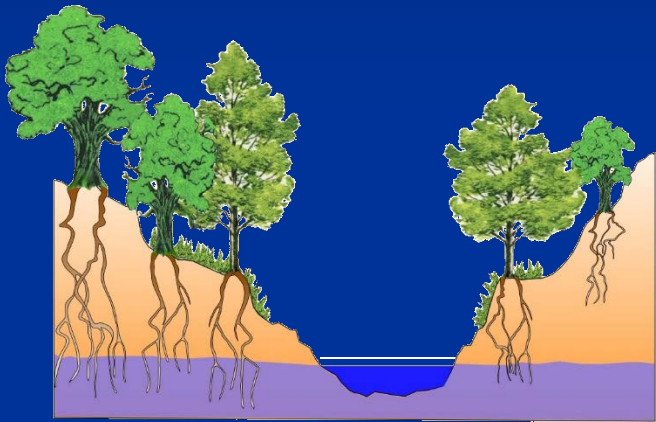
Water Quality

The background of the slide is a solid dark blue. In the lower right quadrant, there are several light blue, stylized wavy lines that resemble ripples on the surface of water, extending from the right edge towards the center.

Goals and Objectives

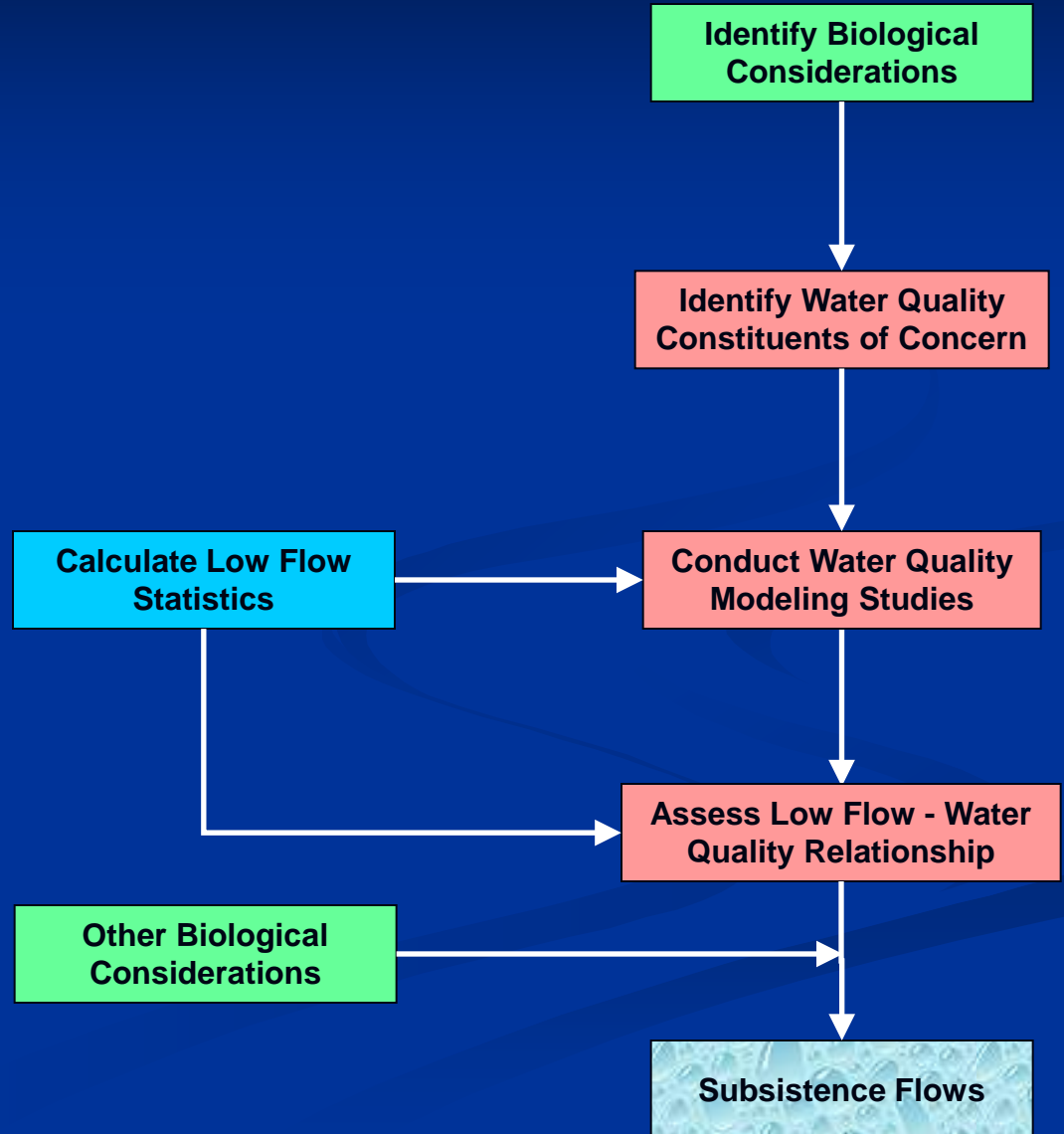
- **State Wide Water Quality Goal:** “Protect the chemical integrity of the states water bodies.”
- **Lower Guadalupe River Basin Objective:** “Identify flows necessary to maintain water quality to support a healthy aquatic and riparian ecosystem.”
- **Indicators:**
 - Dissolved Oxygen
 - Temperature
 - Nutrients
 - Total Suspended Solids
 - Chlorophyll-*a*
 - Bacteria
 - Benthic macroinvertebrates
- **Activities:**
 - Sonde deployments
 - Month long (low flow)
 - Water quality modeling
 - EPD-1, HEC-RAS or a similar 1-d modeling package

Subsistence Flows



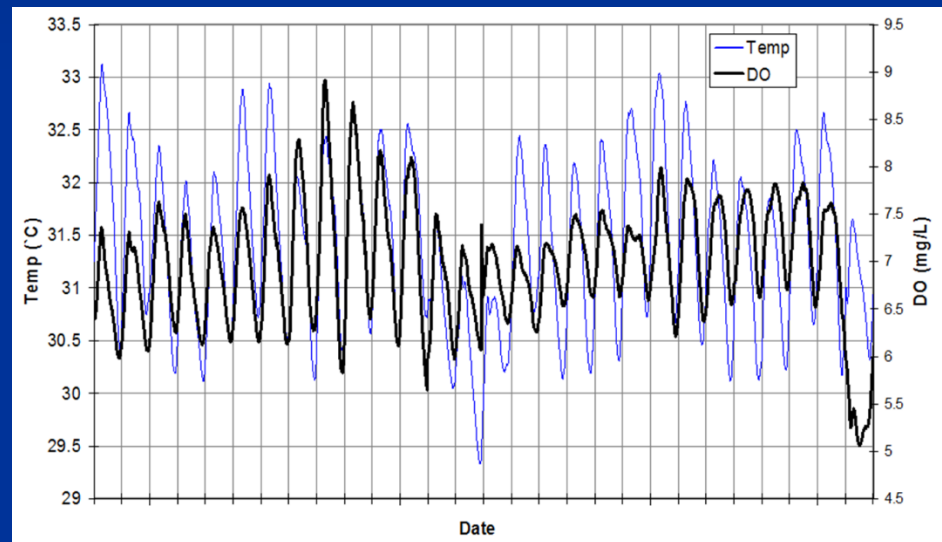
Primary Discipline

- Hydrology/Hydraulics
- Biology
- Geomorphology
- Water Quality

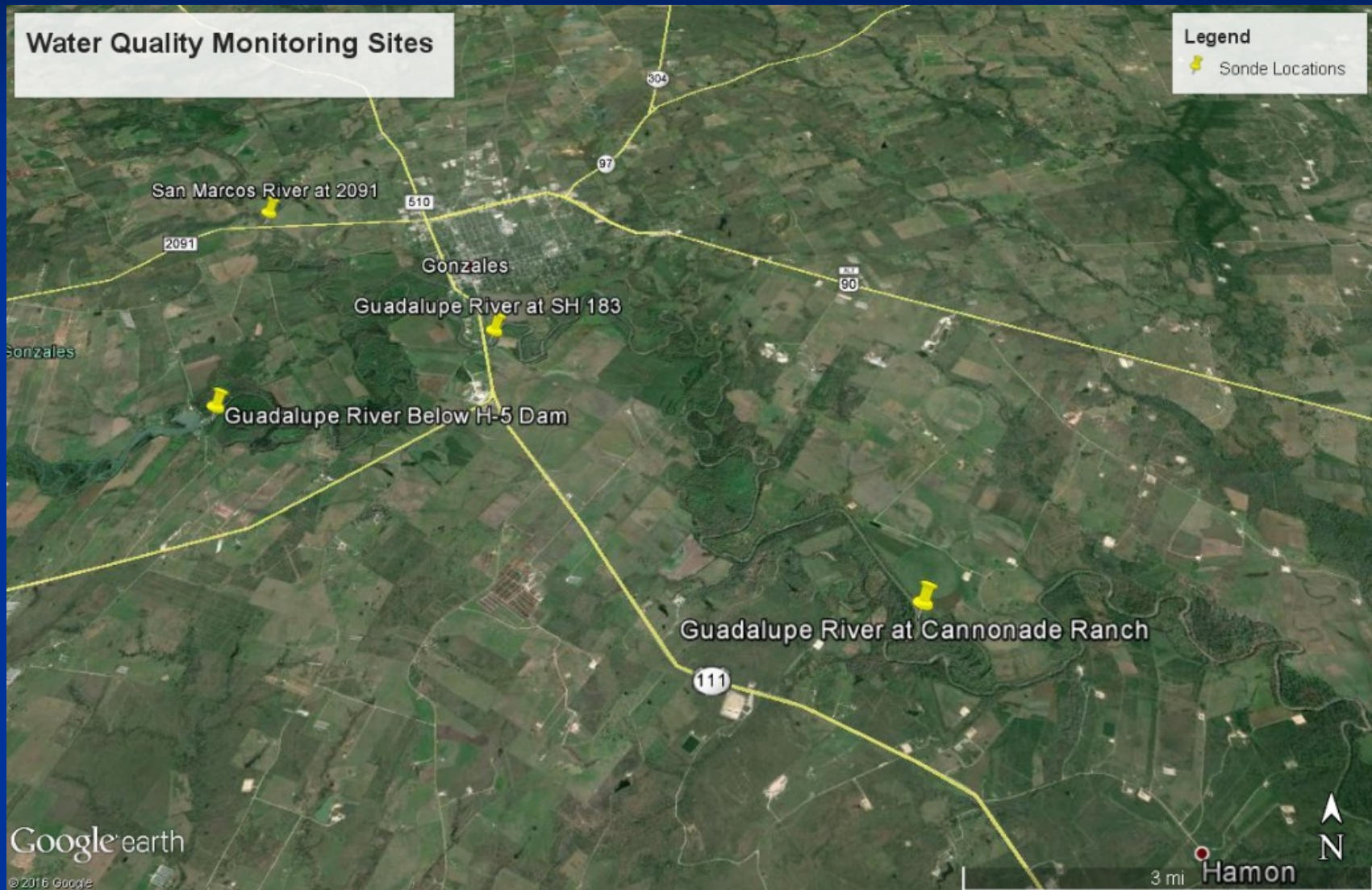


Water Quality Monitoring

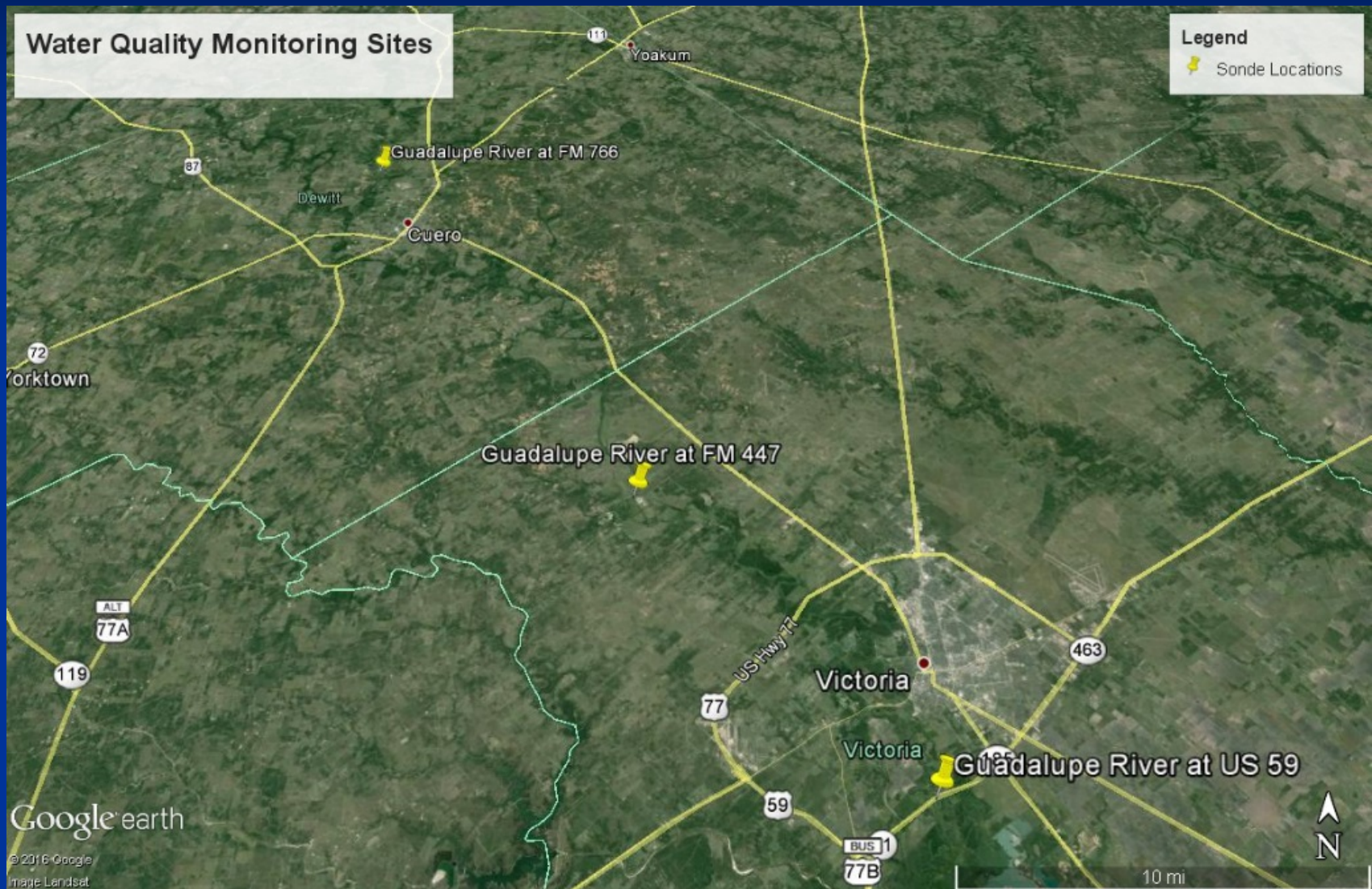
- Monitoring is currently ongoing at multiple sites
- Sites selected based on:
 - Existing water quality information
 - Hydrologic influences
 - Source water characterization
 - Co-occurrence with biological study sites.
- Focused on low flow high temperature critical (summer) period



Water Quality Monitoring Sites



Water Quality Monitoring Sites



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**Fall 2016 -
Summer 2017**

Final Study Report

December 2017

**Peer
Review**

Fall 2017

Timeline for Lower Guadalupe Study

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