

Upper San Marcos River Watershed Protection Planning

Clean Rivers Program
Steering Committee Meeting
March 20, 2014



Upper San Marcos River Watershed

WIMBERLEY

Hays County

Sink Creek

Lime Kin Rd

Sessom Creek

Spring Lake

SAN MARCOS

Purgatory Creek

RR 12

Blanco River

Hwy 80

San Marcos River

Willow Springs Creek

I-35

Hwy 123

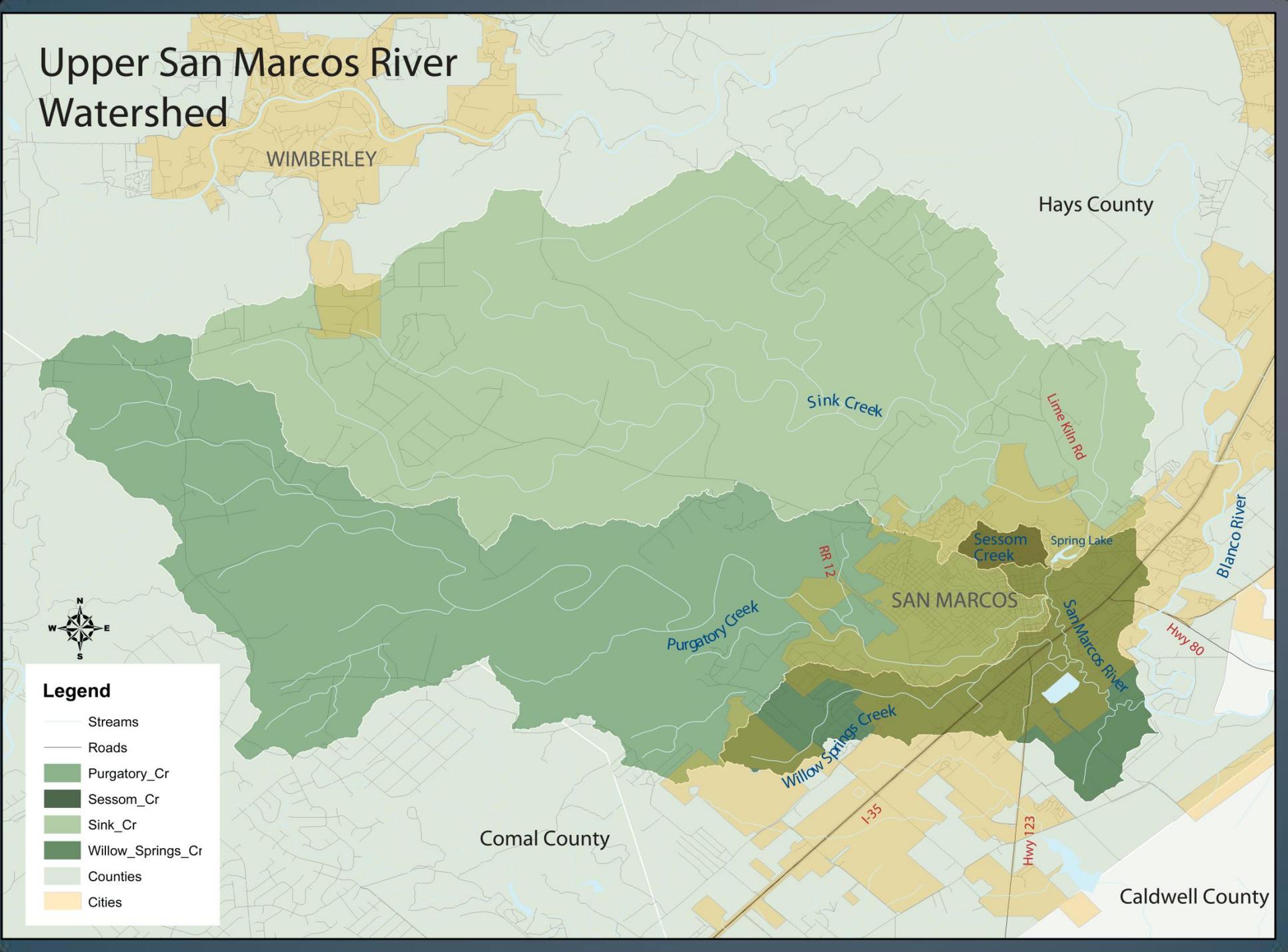
Comal County

Caldwell County



Legend

- Streams
- Roads
- Purgatory_Cr
- Sessom_Cr
- Sink_Cr
- Willow_Springs_Cr
- Counties
- Cities



The Upper San Marcos River

- Impaired for elevated Total Dissolved Solids
- Other pollution concerns include:
 - Total Suspended Solids
 - *E. coli*
 - Nutrients
- One of the fastest growing regions in the nation
- A unique ecosystem with constant spring flow and eight endangered and threatened species

Partners

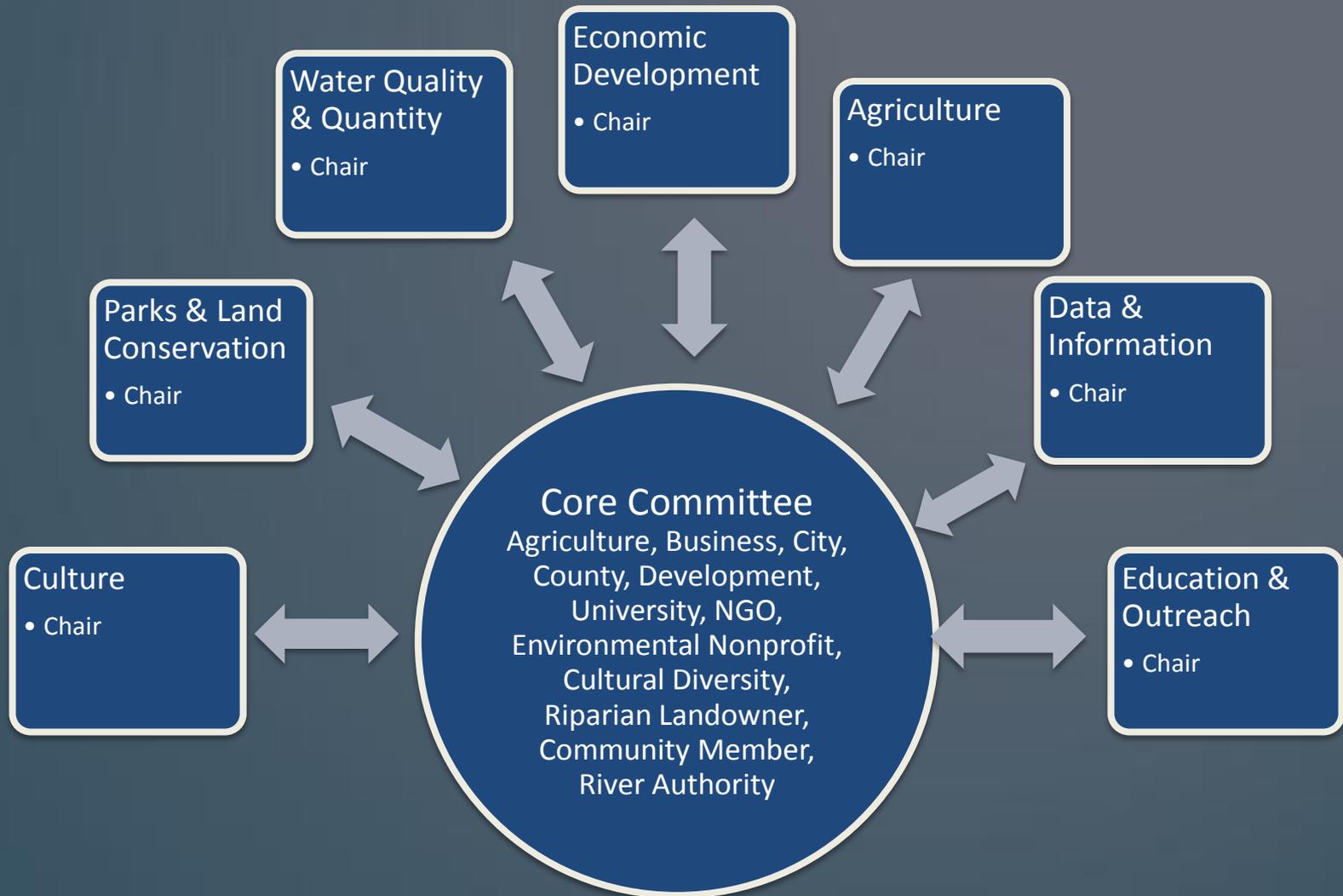


Project	2010	2011	2012	2013	2014	2015	2016	2017	Notes
San Marcos Observing System									Meadows Center for Water and the Environment comprehensive study
Spring Lake Underwater Archaeology									Meadows Center for Water and the Environment Underwater Archaeology in Spring Lake
Spring Lake Watershed Characterization									Meadows Center for Water and the Environment analysis of sediment inputs and stakeholder process
San Marcos Watershed Initiative									Meadows Center for Water and the Environment managed Watershed Protection Plan
Water Quality Protection Plan									EAHCP: Protect surface water and groundwater, for habitat for endangered species
Comprehensive Plan									Revised San Marcos comprehensive master plan.
Stormwater Master Plan									Texas state University.
Drainage Master Plan									City plan to address flooding and erosion.
Sessom Creek Study									Sediment removal options to determine the best procedure to remove sand and gravel bar
Texas Pollution Elimination Discharge System									MS4 Regulatory program to control discharges of pollutants into surface waters
Revisions to Construction Standards									Texas State University
Revision to Land Development Code									City of San Marcos
Habitat Conservation Plan									Plan to protect threatened and endangered species associated with the Edwards Aquifer
Texas State Master Plan									Texas State University-San Marcos to review and update of the 2006-2015 Campus Master Plan

SMWI Vision Statement:

“The vision of the San Marcos Watershed Initiative is a healthy watershed that supports a clean, clear, and flowing San Marcos River for the future as it was in the past.”

SMWI Stakeholder Committee Structure



Task	Timeframe		
	Year1	Year 2	Year 3
Education & Outreach			
Stakeholder Process			
Data Collection			
Watershed Characterization			
Modeling			
BMP Identification			
Watershed Protection Plan Finalization			
Engaging Stakeholders to Ensure Implementation			

Currently

- Watershed Characterization Report and Education/Outreach Plan excerpts will be discussed at meetings during last week of March.
- Draft reports will go to the stakeholders around April 1st for a comment period. Comments to be incorporated then discussed at April 16th meeting. Reports to be voted upon for approval on April 16th and submitted to TCEQ on April 17th.

Watershed Characterization Report Outline

1.0 Physical and Natural Features*

- 1.1 Watershed Boundaries*
- 1.2 Hydrology*
- 1.3 Topography*
- 1.4 Soils*
- 1.5 Geomorphology*
- 1.6 Karst Features
- 1.7 Aquifers
- 1.8 Climate*
- 1.9 Aquatic Life
- 1.10 Wildlife*
- 1.11 Habitat*
- 1.12 Endangered Species

2.0 Geography

- 2.1 Watershed Narrative
- 2.2 Culture
- 2.2 Demographics
- 2.3 Projected Growth
- 2.3 Land Use/Land Cover*
- 2.4 Vegetation
- 2.5 Existing Land Management Practices

3.0 Watershed Conditions*

- 3.1 Water Quality Standards*
- 3.2 305(b) Report*
- 3.3 303(d) List*
- 3.4 Existing TMDL Reports*
- 3.5 Total Dissolved Solids
- 3.6 Source Water Assessments*

4.0 Pollution Sources*

- 4.1 Point Sources*
- 4.2 Wastewater Treatment Plant
- 4.3 Fish Hatchery
- 4.4 Nonpoint Sources*
- 4.5 Estimation of Pollution load
- 4.6 Pollution Load Reductions Needed

5.0 Monitoring Data*

- 5.1 Water Quality and Flow*
- 5.2 Biology*
- 5.3 Geomorphology*
- 5.4 Sediments
- 5.5 Aquatic Life
- 5.6 Fish Hatchery Monitoring
- 5.7 Wastewater Treatment Plants

6.0 Partner Activities and Initiatives

- 6.1 Habitat Conservation Plan
- 6.2 MS4 (University and City)
- 6.3 City of San Marcos Activities
 - 6.3.1 Water Quality Protection Plan
- 6.4 County Activities

7.0 Discussion and Recommendations

- 7.1 Areas of Vulnerability
- 7.2 Vulnerable Tributaries
- 7.3 Flooding
- 7.4 Groundwater Vulnerability
- 7.5 Pollutant Potential in the Watershed
- 7.6 Assessment of Water Quality and Economic Conditions
- 7.7 Summary of Watershed Characterization and Recommendations

Modeling – BASINS & HSPF



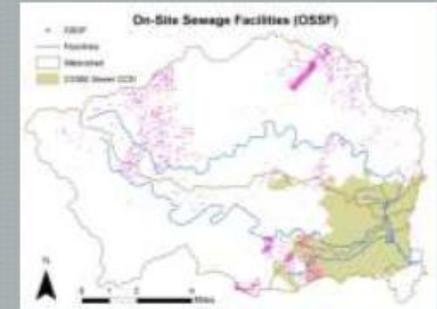
(Precipitation & Discharge)

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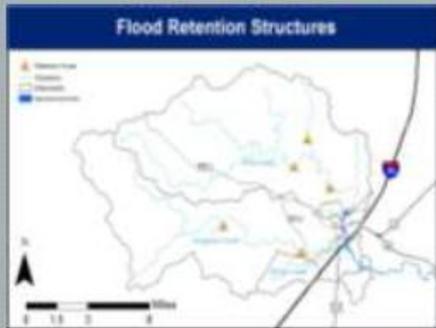
(Land Use Land Cover)

+



(Septic)

+



(Flood Structures)

+



(Agriculture)

+



(WQ data)

+

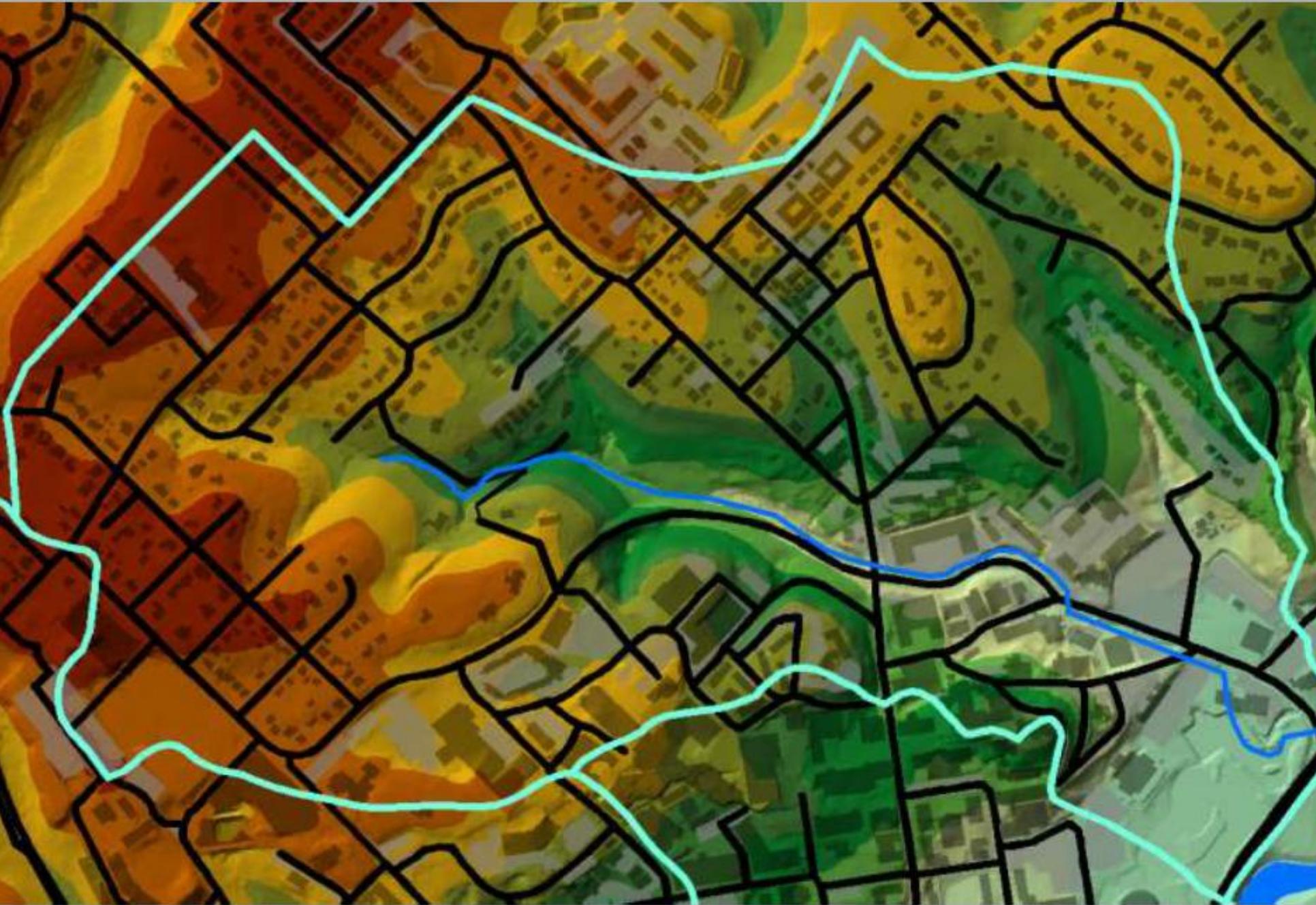
(Pets & Wildlife)

+ (Topography)

(Soils)

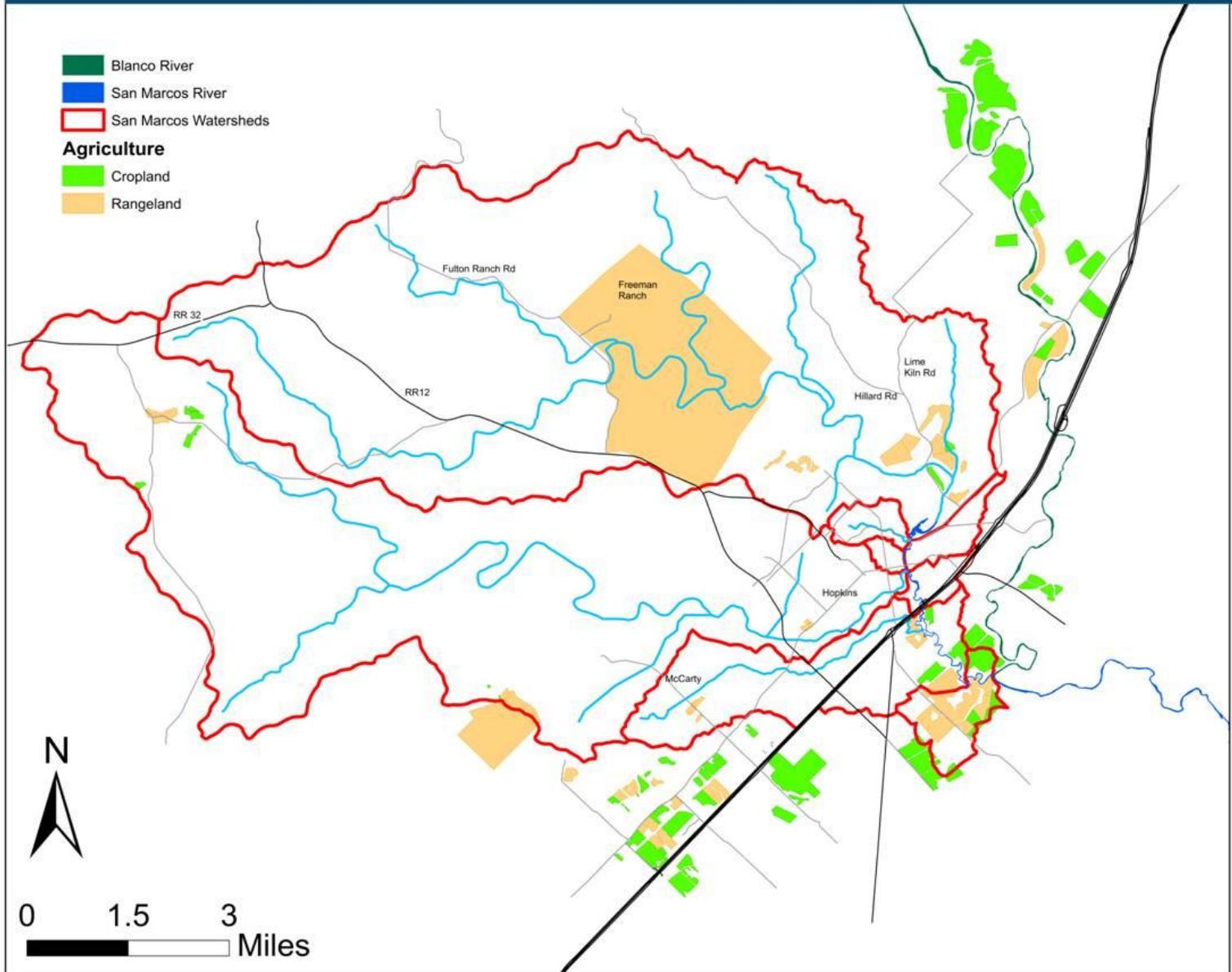
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Receiving Water	Na	P	DO	BOD	Am	eColi	TSS
Sink Creek	?	?	?	?	?	?	?
Sessom	?	?	?	?	?	?	?
Sewell Park	?	?	?	?	?	?	?
Purgatory	?	?	?	?	?	?	?
Willow Creek	?	?	?	?	?	?	?



Example of Resolution- Sessoms Creek Watershed

San Marcos Crop and Rangeland



Thank you!

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**THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT**

TEXAS STATE UNIVERSITY

TEXAS  **STATE**
UNIVERSITY
SAN MARCOS

The rising STAR of Texas