



THE MEADOWS CENTER FOR WATER AND THE ENVIRONMENT

No natural resource is more important to our future than Water. Water is what we do.

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FOR WATER AND THE ENVIRONMENT

TEXAS STATE UNIVERSITY

Cypress Creek and Upper San Marcos Watershed Protection Plan Updates

March 23, 2017

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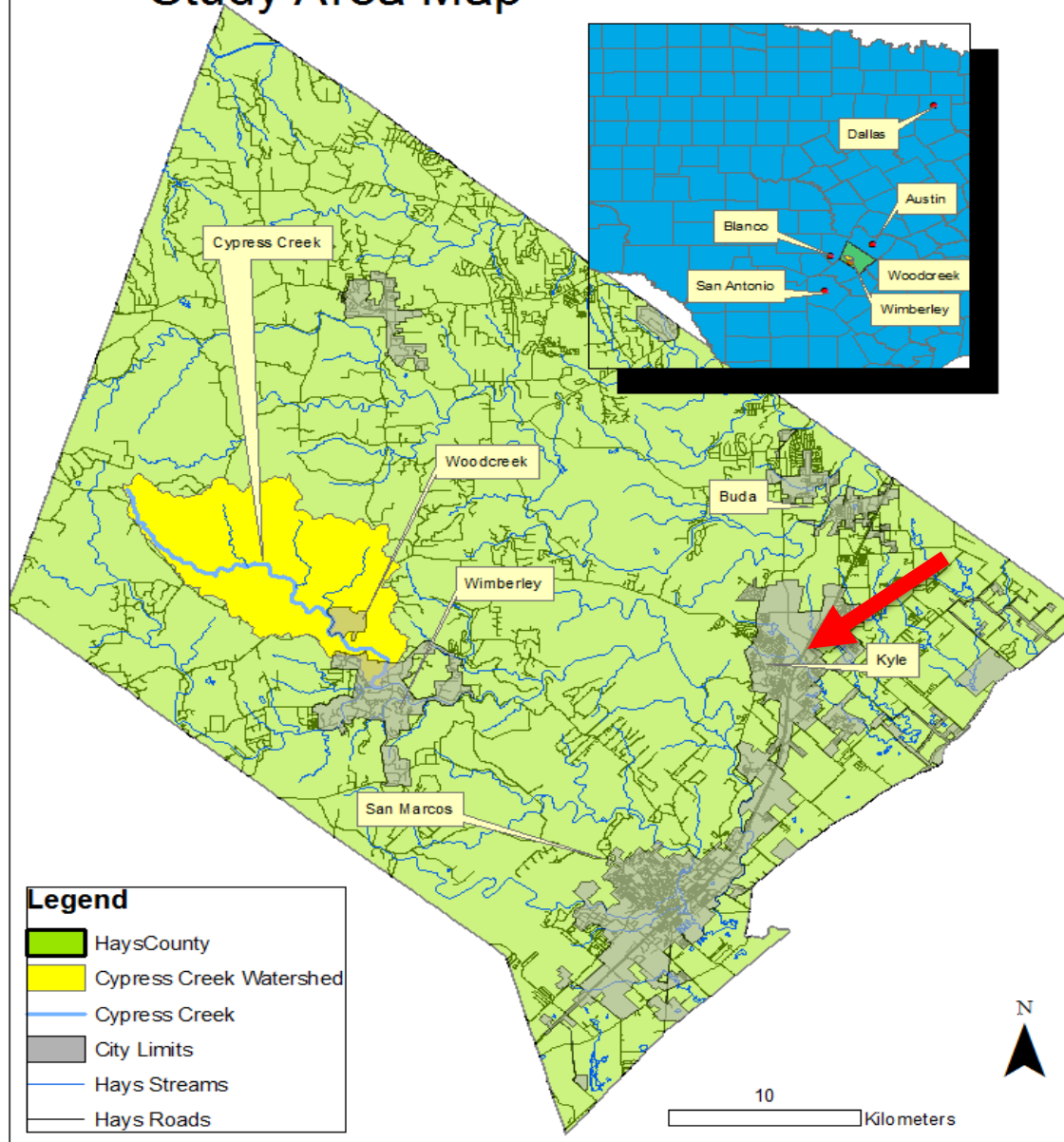
SERVICE



CYPRESS CREEK

Let's keep it clean, clear & flowing

Cypress Creek Watershed Study Area Map



Cypress Creek Watershed Protection Plan

- Impetus - Dissolved Oxygen crashes, cessation of flow (2000)
- Stakeholder partnership formed, led by City of Wimberley, City of Woodcreek, Hays County, Wimberley Valley Watershed Association
- Texas Commission on Environmental Quality 319 funding to develop a science-based, stakeholder driven Watershed Protection Plan

Parameters of Concern or Exceeding Target Levels

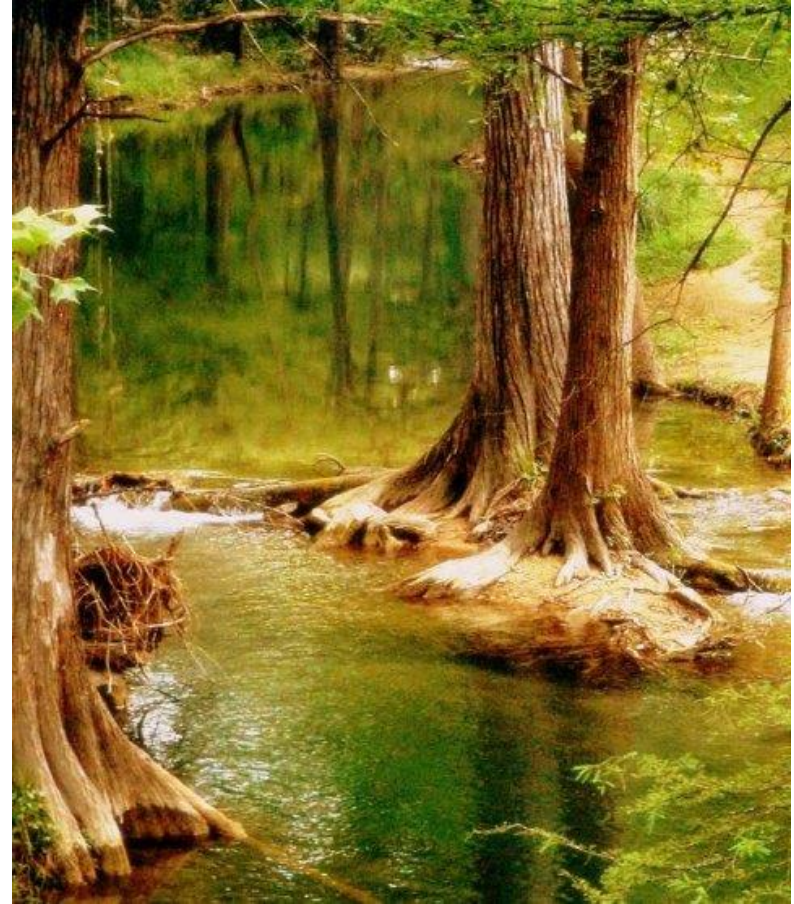
	Primary Causes
Nitrogen	Residential and Commercial fertilizer applications, OSSFs, animal waste, overland flow/impervious cover, atmospheric deposition and low flows.
Total Suspended Solids	Disturbed land cover, impervious cover and natural processes on undeveloped land, low flows.
E. coli	OSSFs, pets, wildlife, low flows.
Dissolved Oxygen	Low base flows limit aeration of water downstream of ground/source waters.
Oil and Grease	Residential wastewater, transportation corridors, improper waste management.
Impervious Cover increases	Increased urbanization.
Preferred Base Flows	Increased water use and well pumpage.

Cypress Creek Plan Components

- Structural best management practices BMPs
- Non-structural BMPs (incentives, regulations, education)
- Source water protection
- Land management, conservation
- Research
- Monitoring

Cypress Creek Plan Status

- Completed 2015
- Implementation grant funded
 - State/Federal Contribution \$804,843
 - Partner and stakeholder Contributions \$529,362
 - Total Cost: \$1,334,205
- Timeline: Sept 2016 – Aug 2019



Cypress Creek Plan Implementation Efforts

- Demonstration BMPs: rain gardens, rainwater harvesting, biofiltration, stormwater mitigation, LID/GI tour
- Monitoring: routine surface, source water and BST
- Ordinance review, permit fast tracking process
- Water quality dashboard
- Publications





SAN MARCOS

WATERSHED INITIATIVE

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Upper San Marcos River Watershed

WIMBERLEY

Hays County

Sink Creek

Lime Kiln Rd

Sessom Creek

Spring Lake

SAN MARCOS

Purgatory Creek

RR 12

Willow Springs Creek

San Marcos River

Hwy 80

Blanco River

I-35

Hwy 123

Comal County

Caldwell County



Legend

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

Upper San Marcos Watershed Protection Plan

- In 2010, cited for exceeding total dissolved solids (TDS) water quality standards
- Other pollutants identified as concern (nutrients, total suspended solids, bacteria, oil and grease).
- TCEQ 319 funding to develop Watershed Protection Plan

Coordinated Efforts

- SMWI/WPP
- COSM Water Quality Protection Plan/WQPP
- COSM MS4
- University MS4
- Habitat Conservation Plan/HCP
- City Planning & Land Development Code Rewrite
- University Planning

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									Protect surface water and groundwater, because both provide habitat for aquatic 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
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

Upper San Marcos Plan Components

- Structural best management practices (BMPs) for new developments and retrofits for existing development
- Demonstration projects to encourage adoption of water quality protection practices
- Education and Outreach Strategies
- Non-Structural Management Measures including land management strategies and preservation of undeveloped land and water quality ordinances
- Information gathering, monitoring to address remaining data gaps

Habitat Conservation Plan's City Water Quality Protection Plan



- Includes groundwater recharge
 - Guided, funded by the Edwards Aquifer Habitat Conservation Plan/City of San Marcos
 - Focused on endangered species and addresses HCP goals to manage the impacts of impervious cover
-
- Plan incorporates WQPP and other HCP efforts into a comprehensive plan
 - Plan is a potential vehicle for funding desired City and WQPP activities/projects

Current San Marcos Plan Efforts

- Editing Plan for last round of comments and state/federal acceptance (Spring 2017)
- Secured funding for 2017-2019 Implementation
 - On the ground stormwater improvement efforts
 - Downtown and Sessom Creek demonstrations
 - Technical support for City, County
 - Water Quality monitoring
 - Education and Outreach
- Land Conservation and Management

Regional WPP Efforts

- Blanco watershed and Hill Country region coordination and WPP framework for expansion
- Conservation Prioritization
- Trash Free Waters Program expansion
- Texas Stream Team





THANK YOU

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