

The San Marcos Watershed Initiative

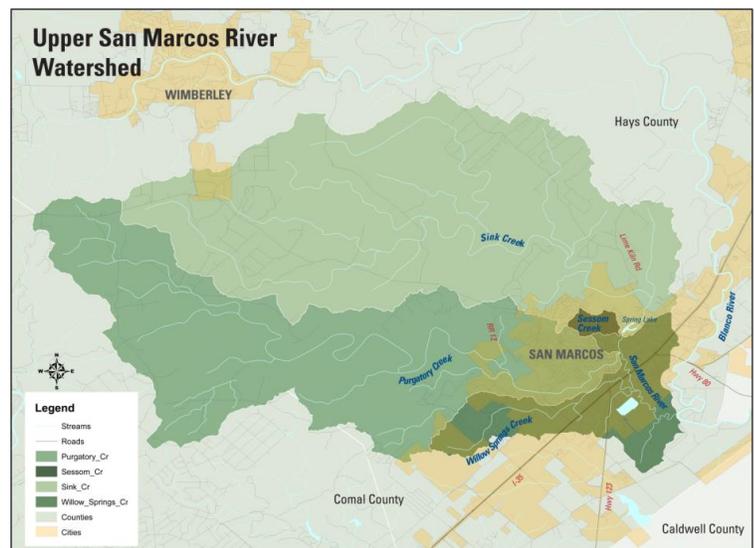
Developing the Watershed Protection Plan

In 2010, the Upper San Marcos River was cited on Texas Commission on Environmental Quality's 303(d) list of impaired waterways, for exceeding total dissolved solids (TDS) water quality standards. The River is currently in compliance with the Clean Water Act Standards, but several pollutants have been identified as a concern.

The San Marcos Watershed Initiative (SMWI) began in 2012 as a multi-year process of research and information gathering with the end goal of implementing a community approved and federally accepted Watershed Protection Plan for the Upper San Marcos River. The Meadows Center for Water and the Environment and SMWI Stakeholders collected relevant data, identified potential sources of nonpoint source pollution and modeled water quality for existing and predicted future land use conditions. Because the Upper San Marcos River is spring fed and previously had exceptional water quality, stakeholders identified target levels that are more stringent than state standards and screening levels to protect the river.

Using this information, best management practices (BMPs) were selected to be implemented over time to preserve water quality throughout the watershed, including:

- Structural BMPs for new development and retrofits for existing development
- Demonstration projects to encourage water quality protection practices
- Education and Outreach Strategies
- Non Structural Management Measures including land management and preservation of undeveloped land
- Enhancement and support for codes & regulations impacting water quality
- Information gathering and monitoring to address data gaps



Efforts resulted in a comprehensive, voluntary and stakeholder-driven plan to manage surface water resources in the Upper San Marcos River watershed. The WPP addresses Total Dissolved Solids (TDS), *E. coli*, nutrients, sediment (TSS) and other pollutants associated with future growth and development and is expected to be accepted by TCEQ and US EPA in the Spring of 2017.

Implementing the WPP

SMWI Stakeholders selected a suite of activities to mitigate current and future water quality impairments. A subset of these BMPs was prioritized for immediate implementation, while others will be implemented over a number of years, as required to mitigate nonpoint source pollution from future development and other activities in the watershed. The first Implementation Phase, beginning in September 2017, will include coordination of water quality monitoring, demonstration projects, BMPs, education and outreach activities and assessments of water quality protection ordinances. TCEQ has awarded watershed partners approximately \$173,000 to begin this first phase.



BMPs installed during the initial Implementation phase will serve as demonstrations highlighting the effectiveness of BMPs to water resource managers, community leaders, developers and citizens. Demonstrations will include preventative, storm-water and low impact development (LID) measures and will be coordinated with the City of San Marcos' stormwater management efforts and pollution reduction efforts by the Edwards Aquifer Habitat Conservation Plan. Educational signage, websites, materials and reports/documents will be coupled with functional demonstration BMPs that may include rainwater harvesting, rain gardens, biofiltration ponds, green channel conversion, pervious pavement and walkway, stormwater retrofit, erosion control or other BMP demonstrations.

Education and outreach efforts will be coordinated among the WPP and its partners – City of San Marcos, Hays County, Texas State University, The San Marcos River Foundation, the Guadalupe Blanco River Authority and many, many others. WPP efforts will be aligned with educational resources and activities associated with the regional Habitat Conservation Plan, City and University MS4 (multiple separate storm sewer system) and City Water Quality Protection Plan (WQPP) to ensure that preserving water quality in the Upper San Marcos river is a common theme throughout the watershed. A multifaceted approach will engage the community and key stakeholders in both the implementation of WPP activities and the expansion of pollution reduction strategies across the watershed. Specific activities include coordinating water quality monitoring efforts and disseminating information, public service announcements, community workshops, newsletters, watershed tours and other outreach activities.

A review of new and existing ordinances will assist the City, County and other partners in quantifying the effectiveness of ordinances pertaining to water quality and may provide support for implementing the City's new land development codes. Project partners and SMWI Stakeholders will work with partners to interpret the findings of this assessment and to entertain the incorporation of additional LID and green infrastructure components, as well as ways to better coordinate, train staff and educate developers and citizens.

Benefits of the Upper San Marcos Watershed Protection Plan

Implementation of the WPP will yield the following benefits to the community:

- Reduced nonpoint source pollution (NPS) and prevention of increases in NPS in the future
- Demonstrated and proven best management practice options that improve water quality and spring flow
- Site-specific retrofits for LID and green infrastructure
- Increased capacity to preserve water quality through local permitting, ordinances and regulations
- Additional methods to quantify water quality impacts
- Increased accuracy of tools available for decision makers to calculate effects of future land use changes and development activities on NPS loadings
- Coordinated water resources and related environmental outreach/education efforts across the watershed
- Improved understanding of relationships between groundwater and source water, surface water, recharge, and vulnerability to impacts on water quality
- Funding from federal and state programs to implement water quality protection strategies
- Vehicle and funding for implementing Edwards Aquifer Authority Habitat Conservation Plan required activities

