

THE UPPER SAN MARCOS RIVER WATERSHED PROTECTION PLAN

AUs 1814_01, 1814_02, 1814_03, and 1814_04



THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT

TEXAS STATE UNIVERSITY

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM

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- Texas Commission on Environmental Quality
- United States Environmental Protection Agency
- Texas State Soil Water Conservation Board
- Texas A&M AgriLife Extension Service
- Guadalupe-Blanco River Authority
- City of San Marcos
- Hays County
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LIST OF ACRONYMS AND ABBREVIATIONS

AC-FT	Acre Feet	lbs	Pounds	SMRF	San Marcos River Foundation
BMP	Best Management Practices	LDC	Land Development Code	SMTX	San Marcos, Texas
BSEACD	Barton Springs/ Edwards Aquifer Conservation District	LID	Low Impact Development	SMWI	San Marcos Watershed Initiative
BST	Bacterial Source Tracking	MGD	Million Gallons per Day	SSURGO	Soil Survey Geographic Database
cfu	colony forming units	mg/L	Milligrams Per Liter	SO4 -2	Sulfate
Cl-1	Chloride	mi(2)	square miles	TAC	Texas Administrative Code
COSM	City of San Marcos	ml	Milliliter	TCEQ	Texas Commission on Environmental Quality
CRP	Clean Rivers Program	MPN	Most Probable Number	TDS	Total Dissolved Solids
CWA	Clean Water Act	MS4	Municipal Separate Storm Sewer System	TKN	Total Kjeldahl Nitrogen
DO	Dissolved Oxygen	NELAP	National Environmental Laboratory Accreditation Program	TN	Total Nitrogen
EAA	Edwards Aquifer Authority	NEMO	Nonpoint Education for Municipal Officials	TP	Total Phosphorus
EAHCP		NGO	Non-Governmental Organization	TPWD	Texas Parks and Wildlife Department
EARZ	Edwards Aquifer Recharge zone	NH3-N	Ammonia Nitrogen	TSS	Total Suspended Solids
E. coli	Escherichia coli	NOAA	National Oceanic and Atmospheric Administration	TSSWCB	Texas State Soil and Water Conservation Board
e.g.	Exempli Gratia (“for example”)	NRCS	Natural Resource Conservation Service	TST	Texas Stream Team
E&O	Education and Outreach	OSSF	On-site Sewage Facility	USDA	U.S. Department of Agriculture
EMC	Event Mean Concentration	pH	Potential of Hydrogen	USFWS	U.S. Fish and Wildlife Service
EPA	Environmental Protection Agency	PPCP	Pharmaceutical and Personal Care Product	USGS	U.S. Geological Survey
ETJ	Extraterritorial Jurisdiction	PSA	Public Service Announcement	WPP	Watershed Protection Plan
ft(2 or 3)	Foot(squared or cubed)	QAPP	Quality Assurance Project Plan	WQPP	Water Quality Protection Plan
GBRA	Guadalupe-Blanco River Authority	SELECT	Spatially Explicit Load Enrichment Calculation Tool	WWTF	Waste Water Treatment Facility
HHW	Household Hazardous Waste	SIPES	Social Indicator Planning & Evaluation System		
HSPF	Hydrological Simulation Program - Fortran	SMGA	San Marcos Greenbelt Alliance		
HTGCD	Hays Trinity Groundwater Conservation District	SMRC	San Marcos River Corridor		
IH-35	Interstate Highway 35				
IPM	Integrated Pest Management				

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NINE ELEMENT CROSSWALK

The Environmental Protection Agency (EPA) has identified nine key elements that are critical for achieving improvements in water quality. These nine elements are required by the EPA to be addressed in watershed plans funded with the incremental Clean Water Act section 319 funds. The EPA will review watershed plans that provide the basis for section 319-funded projects.

For more information, please refer to EPA's [“Handbook for Developing Watershed Plans to Restore and Protect Our Waters”](#).

A GUIDE TO FINDING THE EPA WATERSHED PLANNING ELEMENTS IN THE UPPER SAN MARCOS WATERSHED PROTECTION PLAN

Element	Element Description	Watershed Protection Plan Section	Page #
A	Identification of causes and sources of pollution that need to be controlled to achieve load reductions	Ch 1. Introduction to the Watershed	25
B	Estimation of load reductions expected from management strategies	Ch 2. Management Measures	48
C	Description of management strategies	Ch 2. Management Measures	57
D	Estimation of technical and financial assistance needed to implement the plan	Ch 2. Technical and Financial Assistance	86
E	Information and education component used to enhance public understanding of the plan	Ch 3. Education and Outreach	91
F	Schedule for implementation of management strategies	Ch 2. Management Measures	58
G	Description of interim, management milestones for determining whether management strategies are being implemented	Ch 2. Management Measures	60
H	Set of criteria that can be used to determine whether load reductions in (B) are being achieved	Ch 2. Management Measures	61
I	A monitoring component to evaluate the effectiveness of the implementation efforts over time	Ch 4. Monitoring Plan	105