Texas State Soil and Water Conservation Board
State Nonpoint Source Grant Program
FY 2017 Workplan 17-50

SUMMARY PAGE			
Title of Project	Development of a Watershed Protection Plan for Mid and Lower Cibolo Creek		
Project Goals	1) Develop local watershed committee to solicit input and encourage participation of local stakeholders; 2) Complete assessment of pollutants by reviewing existing water quality data, conducting an inventory of point and nonpoint sources, land use data and known stressors influencing water quality; 3) Conduct water quality monitoring, analyze data, assess loadings and determine origin and distribution; 4) Develop watershed protection plan, establishing goals and objectives, load allocations, strategies and timetables for implementation		
Project Tasks	(1) Project Administration; (2) Quality Assurance; (3) Water Quality Monitoring; (4) Data Acquisition and Evaluation of Existing Data for Pollutant Characterization and Source Identification; (5) Watershed Partnership Facilitation and Watershed Protection Plan Development		
Measures of Success	• Coordination and engagement of a watershed stakeholder group • Completed Watershed Protection Plan for Mid and Lower Cibolo Creek		
Project Type	Implementation ( ); Education (X); Planning (X); Assessment (X); Groundwater ( )		
Status of Waterbody on *2012 Texas Integrated Report*	Segment ID 1913 1902	Parameter of Impairment or Concern Depressed Dissolved Oxygen Bacteria, Impaired Fish Community	Category 4b 5b, 5c
Project Location (Statewide or Watershed and County)	Mid and Lower Cibolo Creek watershed including portions of Kendall, Bexar, Comal, Wilson, and Karnes Counties		
Key Project Activities	Hire Staff ( ); Surface Water Quality Monitoring (X); Technical Assistance ( ); Education ( ); Implementation ( ); BMP Effectiveness Monitoring ( ); Demonstration ( ); Planning (X); Modeling (X); Bacterial Source Tracking ( ); Other ( )		
2012 Texas NPS Management Program Reference	• Component 1: LTG Objectives 1, 2, 6, 7, 8 STG 1 Objectives B, C, D; STG 3 Objectives A, B, D, G • Component 2 • Component 5		
Project Costs	$ 348,891		
Project Management	• Texas A&M AgriLife Extension Service, Texas Water Resources Institute, San Antonio River Authority		
Project Period	November 1, 2016 – May 31, 2019		

Part I – Applicant Information

Applicant							
Project Lead	Lucas Gregory						
Title	Sr. Research Scientist & Quality Assurance Officer						
Organization	Texas A&M AgriLife Extension Service; Texas Water Resources Institute						
E-mail Address	LFGregory@ag.tamu.edu						
Street Address	578 John Kimbrough Blvd.; 2260 TAMU						
City	College Station	County	Brazos	State	Texas	Zip Code	77843-2260
Telephone Number	979-845-1851/ 979-458-5915			Fax Number	979-845-0662		

Project Co-Lead	Patricia M. Carvajal						
Title	Quality Assurance Supervisor						
Organization	San Antonio River Authority						
E-mail Address	pmcarvajal@sara.tx.org						
Street Address	600 Euclid						
City	San Antonio	County	Bexar	State	Texas	Zip Code	78212
Telephone Number	210-227-1372			Fax Number	210-858-0265		

Project Partners	
Names	Roles & Responsibilities
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TCEQ.
Texas A&M AgriLife Extension, Texas Water Resources Institute (TWRI)	Provide project administration, stakeholder coordination, quality assurance, development of the WPP, and water quality modeling.
San Antonio River Authority	Provide assistance for stakeholder relations, water quality monitoring and support the development of task final reports
SWCA Environmental Consultants	Provide assistance in the collection of stormwater samples

Part II – Project Information

Project Type							
Surface Water	X	Groundwater					
Does the project implement recommendations made in (a) a completed WPP, (b) an adopted TMDL, (c) an approved I-Plan, (d) a Comprehensive Conservation and Management Plan developed under CWA §320, (e) the *Texas Coastal NPS Pollution Control Program*, or (f) the *Texas Groundwater Protection Strategy*?				Yes		No	X
If yes, identify the document.							
If yes, identify the agency/group that developed and/or approved the document.				Year Developed			

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2012 IR	Size (Acres)
Mid Cibolo Creek	121003040304 121003040301 121003040302 121003040305 121003040303	1913	4c	27,764.88
Lower Cibolo Creek	121003040405 121003040403 121003040402 121003040404 121003040401	1902	5b, 5c	349,379.09

Water Quality Impairment

Describe all known causes (i.e., pollutants of concern) and sources (e.g., agricultural, silvicultural) of water quality impairments or concerns from any of the following sources: *2012 Texas Integrated Report*, Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.

2013 San Antonio River Basin Clean Rivers Program Basin Summary Report
http://www.sara-tx.org/public_resources/library/documents/water_quality_monitoring/2013BSR-web.pdf

Ammonia, Nitrite, Ortho-phosphorus and Total phosphorus could be the result of wastewater treatment plant discharge; low flows and natural weathering and leaching of sedimentary rocks, soils and salt deposits; runoff of inadvertent over-application of fertilizers; and organic matter carried to the stream with stormwater runoff.

Causes of *E. coli* impairment can be attributed to sewer breaks and overflows, poorly maintained septic systems, stormwater runoff from livestock operations, and wildlife.

2012 Water Quality Impairments

1902 Lower Cibolo Creek		Category
1902_01	Bacteria	5b
1902_02	Bacteria	5b
1902_03	Bacteria	5c
1913 Mid Cibolo Creek		
1913_02	Depressed Dissolved Oxygen	4b

2012 Water Quality Concerns

1902 Lower Cibolo Creek	
1902_03	Impaired Fish Community
1902_04	Nitrate
1902_05	Nitrate, Total Phosphorus
1913 Mid Cibolo Creek	
1913_01	Bacteria, Nitrate, Total Phosphorus
1913_02	Dissolved Oxygen 24hr, Total Phosphorus, Nitrate

Project Narrative

Problem/Need Statement

The 2012 303(d) List identified the Lower Cibolo Creek (Segment 1902) as exceeding the contact recreation criterion for *E. coli* bacteria. The ultimate water quality goal for this segment is to reduce bacterial concentrations to within acceptable risk levels for the stream to meet the Primary Contact Recreation Standard 1. (https://www.sara-tx.org/public_resources/library/documents/water_quality_monitoring/2013BSR-web.pdf).

In 2011, a Recreation Use Attainability Analysis (RUAA) was conducted by Texas AgriLife Research and Texas A&M University (http://www.tceq.texas.gov/waterquality/standards/ruaas/lowercibolo1902). At public meetings for this project, the public made it clear that their desire was to have the Lower Cibolo Creek meet Primary Contact Recreation Standards. One of the objectives of this project is to harness this desire to gain support for the necessary activities to reduce bacteria concentrations in the Mid and Lower Cibolo Creek in order to meet the Primary Contact Recreation Standard.

The Mid Cibolo and Lower Cibolo Creek have seen increased development in the residential sector as well as increased activity as a result of hydraulic fracturing activity in the Eagle Ford Shale formation. With this increased development, it is important that a plan to protect the watershed's creeks and streams be developed in order to protect the biological and riparian resources in the Mid and Lower Cibolo Creek watersheds.

Previous monitoring efforts conducted by the San Antonio River Authority include intensive monitoring efforts in the Lower Cibolo Creek Watershed to assist in identifying areas that may be contributing to elevated pollutant loads in the watershed. This proposed project will allow this data to be used in the watershed protection plan process to identify areas that need to be focused on. This project will include gathering and assessing data to develop Load Duration Curves and spatial analysis using Geographic Information Systems (GIS) analysis. Gaining local support of watershed protection plans is crucial to long term success of implementing the watershed protection plan and achieving water quality standards. Stakeholders will be engaged in order to characterize the watershed and estimate pollutant loading reductions for watershed protection plan development.

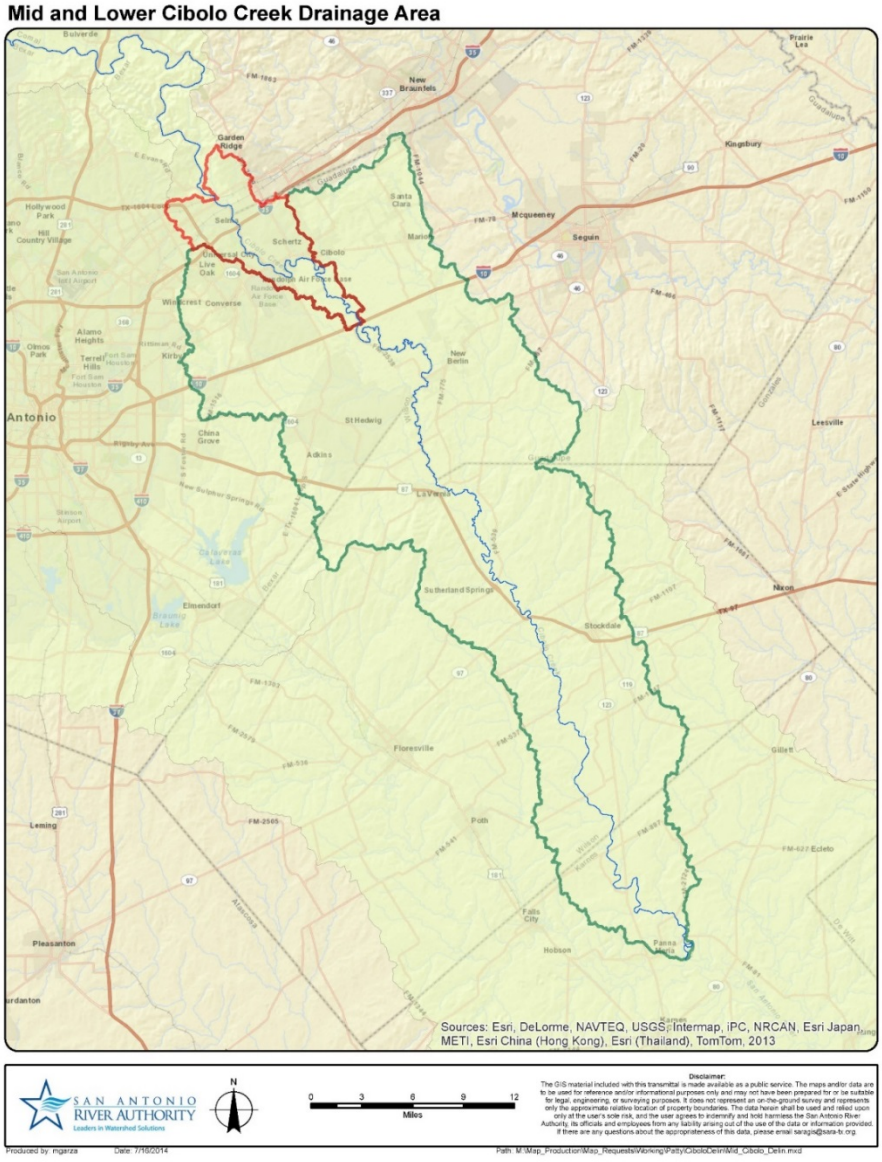
Another project currently underway is the Cibolo Creek Holistic Watershed Master plan project, which will also utilize the water quality monitoring data that will also support the watershed assessment and development of the Mid/Lower Cibolo Creek Watershed Protection Plan. The Cibolo Creek Holistic Watershed Master Plan will focus on flood issues (hydrologic and hydraulic analysis), stream restoration, water quality modeling, water quality best management practices, (GIS)/mapping/remote sensing, low impact development, MS4 permitting, conservation easements, mitigation banking and nature-based park planning. The activities of this project include identification of major flooding reaches, stream characterization and identification of the restoration potential, point and nonpoint pollutant sources that impact water quality, and development of holistic solutions to address identified risk centers and to meet multiple objects and goals. This project will share data and coordinate through SARA during the development of the WPP for this area, which will complement the both planning efforts.

Project Narrative

General Project Description (Include Project Location Map)

The *Development of a Watershed Protection Plan for Mid and Lower Cibolo Creek* project will include stakeholder facilitation, gathering existing data for analysis and collection of stormwater data. This project will develop the plan following the nine elements of EPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (USEPA, 2008). Existing data such as water quality, flow, wildlife and livestock estimates, number of septic systems etc. will be collected and evaluated to assist in identifying causes and sources of parameters impairing water quality. This data will be used to address pollutant sources and act as a base of information for planning purposes. The spatial analysis will be used to estimate *E. coli* and other pollutants within the watershed. The project will result in the production of a watershed protection plan that has been developed with buy-in from local stakeholders and governmental entities. The WPP will identify implementable best management practices that are based on the goals of water quality improvement and watershed protection. A comprehensive watershed approach will be used with concentrations on the most significant sources of pollution contributing to the impairments while at the same time looking ahead at potential sources of pollution from urban and suburban growth.

Mid and Lower Cibolo Creek Drainage Area



The outcomes of the project, which include working with local stakeholders to determine identification and estimation of sources, would also benefit the local government entities as they look at developing future master plans as well as stormwater management strategies. Recommended best management practices that are identified by the steering committee, work groups and partner agencies will be evaluated for their relative impact on water quality. An important benefit of the project would be the identification of implementation strategies that get ahead of growth so that it can be directed in an environmentally safe and community accepted direction. A holistic look at impacts to water quality is important. The WPP could be utilized by local city and county officials as they develop master plans, stormwater management plans and develop ordinances to manage future growth in the area.

The proposed project will include stormwater monitoring with automatic samplers at three locations on the Mid and Lower Cibolo Creek. These units will collect discrete samples along the hydrograph of various storm events. This data will support WPP development and other projects that are currently underway at the San Antonio River Authority, including the Cibolo Creek Holistic Watershed Master Plan. The sample locations for this monitoring have been identified (refer to Proposed Monitoring Sites map). A one-time, exploratory sampling event will be carried out. This event, will collect samples at up to 33 locations during a single day. This will allow potential *E. coli* loading hotspots to be identified within the watershed.

Through this watershed characterization project, existing data will be collected and evaluated to assist in identifying causes and sources impairing water quality. This characterization will be conducted through the use of GIS analysis, National Agricultural Statistics Service, Council of Governments data as well as a variety of other sources. This approach will be similar to the SELECT model and will result in EPA Element A, one of the required nine elements in watershed planning. To supplement existing data and attempt to fill data gaps, additional water quality and flow data will be collected to improve analysis. Such data is crucial in estimating loading reductions, which will accomplish Element B of EPA's guidance. Loading reductions needed to accomplish water quality standards and goals will be calculated through the use of Load Duration Curves. Spatial analysis of potential *E. coli* contributions aids in prioritizing subwatersheds for recommended management strategy implementation. This approach represents the total potential for *E. coli* loads by estimating the maximum *E. coli* load deposited into the watershed. Spatial analysis distributes potential *E. coli* loads across the watershed based on subwatershed land use characteristics and animal estimates verified by stakeholders. *E. coli* loading rates were developed from published literature values regarding daily feces production and its *E. coli* content. This allows for subwatershed specific potential *E. coli* loads to be estimated for each source evaluated. These are then combined to produce an overall potential *E. coli* source load. Both Load Durations Curves and spatial analysis have been acceptable methods for the development of watershed-based plans such as the Plum Creek Watershed Protection Plan, the Buck Creek Watershed Protection Plan, and many others.

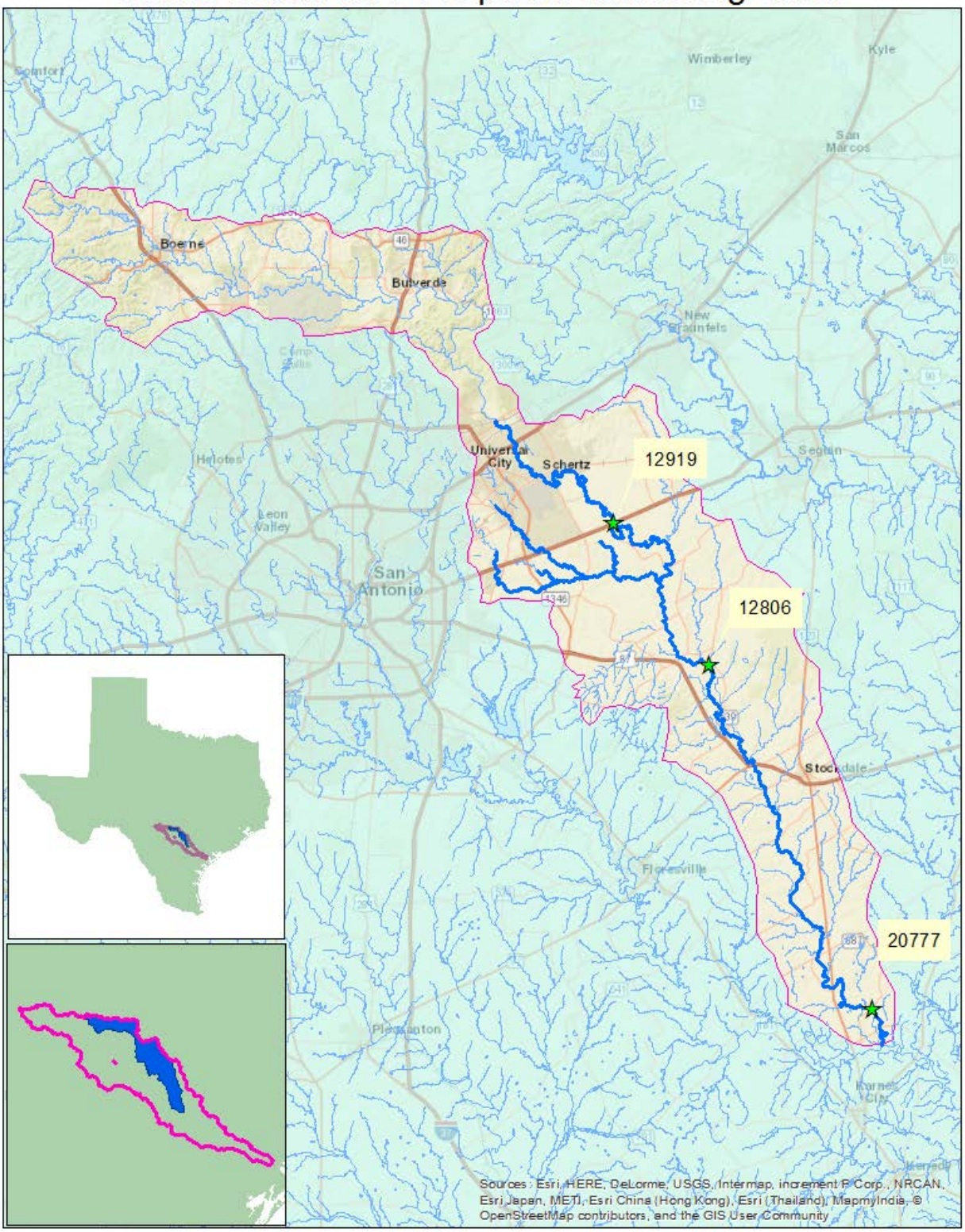
The monitoring sites are currently included in the San Antonio River Authority Instream Stormwater Monitoring Project. This project includes using automatic samplers to collect hydrograph stormwater samples from various types of storm events within the basin. A minimum antecedent dry period is included in this monitoring program. The sample locations are identified on the following map.

The water quality data will also support the development of a Hydrologic Simulation Program-Fortran (HSPF) water quality model for the Cibolo Creek Holistic Watershed Master Plan Project (developed and paid under a different scope of work), as well as the WPP. This project is being managed by the Watershed Engineering Department of the San Antonio River Authority. This project will focus on issues that will be included in the Watershed Protection Plan including, identification of best management practices (BMPs) to address the water quality impairments and concerns that have been identified in the Texas Commission on Environmental Quality (TCEQ) Integrated Report, and identify areas where stream restoration activities, if implemented, would benefit the watershed.

The Watershed Master Plan for Cibolo Creek project will result in a holistic watershed master plan for the entire Cibolo Creek Watershed. The plan will address flood issues, stream restoration, water quality modeling and water quality best management practices, GIS mapping, remote sensing, low impact development, conservation easements, mitigation banking and nature based park planning. Other activities will include identification of major flood reaches, stream characterization and identification of the restoration potential, point and nonpoint pollutant sources that impact water

quality, and development of holistic solutions to address identified risk centers and to meet multiple objectives and goals. Additional information on this project can be found in the San Antonio River Authority Program Book (https://www.sara-tx.org/public_resources/library/documents/financial_information/2015_program_book_final.pdf). Atkins has been gathering all of the data needed for the Hydrology and Hydraulic model using HSPF and has begun modeling and calibration for the Watershed Master Plan for Cibolo Creek. The HSPF modeling by Atkins is expected to be completed by the end of December 2016. Though the model is not being funded through this project the model will be verified and peer reviewed to conform to national standards. The efforts of developing the watershed protection plan would coincide quite well with the Watershed Master Plan.

Cibolo Creek WPP Proposed Monitoring Sites



Proposed Stormwater Monitoring Locations	
Site	Description
12806	Cibolo Creek at CR337
12919	Cibolo Creek at IH/US 90
20777	Cibolo Creek at FM 2724

Tasks, Objectives and Schedules				
Task 1	Project Administration			
Costs	$26,512			
Objective	To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.			
Subtask 1.1	TWRI with assistance from SARA will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of March, June, September and December. QPRs shall be distributed to all Project Partners.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 1.2	TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.			
	Start Date	Month 1	Completion Date	Month 3
Subtask 1.3	TWRI with assistance from SARA will host coordination meetings or conference calls, at least quarterly, with project partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. TWRI will develop lists of action items needed following each project coordination meeting and distribute to project personnel.			
	Start Date	Month 1	Completion Date	Month 31
Deliverables	• QPRs in electronic format • Reimbursement Forms and necessary documentation in hard copy format • Final Report in electronic and hard copy formats.			

Tasks, Objectives and Schedules				
Task 2	Quality Assurance			
Costs	$14,341			
Objective	To develop data quality objectives (DQOs) and quality assurance/control (QA/QC) activities to ensure data of known and acceptable quality are generated through this project.			
Subtask 2.1	SARA will develop a QAPP for activities in Task #3 consistent with the most recent versions of *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* and the *TSSWCB Environmental Data Quality Management Plan.* All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the *TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)* and *Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416).* [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, *Environmental Testing Laboratory Accreditation and Certification*, which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards, shall be required where applicable.]			
	Start Date	Month 1	Completion Date	Month 6

Subtask 2.2	TWRI will develop a QAPP for activities in Task #4 consistent with the most recent versions of *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* and the *TSSWCB Environmental Data Quality Management Plan*. TWRI will develop and submit to TSSWCB QAPP(s) with project-specific DQOs and other components consistent with the following documents: • EPA Requirements for QAPPs (QA/R5) • EPA Guidance for Geospatial Data QAPPs (QA/G-5G) • EPA QAPP Requirements for Secondary Data Research Projects			
	Start Date	Month 1	Completion Date	Month 6
Subtask 2.3	TWRI and SARA will implement the approved QAPPs. TWRI and SARA will submit revisions and necessary amendments to the QAPPs as needed.			
	Start Date	Month 1	Completion Date	Month 31
Deliverables	• QAPPs approved by TSSWCB in both electronic and hard copy formats. • Approved revisions and amendments to QAPPs, as needed. • Data of known and acceptable quality as reported through Tasks 3 and 4.			

Tasks, Objectives and Schedules				
Task 3	Water Quality Monitoring			
Costs	$137,042			
Objective	To perform water quality monitoring for storm events of varying size and intensity to support the water quality model and WPP development for the Mid and Lower Cibolo Creek watershed.			
Subtask 3.1	SARA will conduct stormwater monitoring of the watershed as described in the monitoring plan developed under this subtask and the QAPP developed in subtask 2.1. Monitoring will be conducted with automatic samplers at three locations within the Mid and Lower Cibolo Creek watersheds as shown in the provided map (locations may be changed as appropriate). Sampling will occur over a 12 month period. A minimum of five stormwater events are to be collected under this monitoring effort. Each event will consist of a minimum of 7 grab samples collected over the hydrograph of the storm event to characterize the pollutant load for the duration of the storm event. The samples will be analyzed for TSS, ammonia-nitrogen, chloride, E. coli, nitrate, nitrite, sulfate, biochemical oxygen demand, total phosphorus and total kjeldahl nitrogen. A USGS flow gauge is co-located with one station (12919). The other two stations have a flow rating curve developed to determine stream flow based upon elevation of the water level.			
	Start Date	Month 6	Completion Date	Month 28
Subtask 3.2	SARA will be responsible for storing collected water quality data. This includes all laboratory and field data. SARA will also be responsible for data transmittal to the TCEQ SWQMIS database and ensure that the data format is consistent with the TCEQ DMRG.			
	Start Date	Month 6	Completion Date	Month 31
Subtask 3.3	SARA will conduct a one-time, exploratory sampling event at multiple locations across the watershed. A maximum of 33 sampling locations will be monitored for *E. coli* concentrations and ambient field conditions.			
	Start Date	Month 30	Completion Date	Month 31
Deliverables	• Water quality monitoring data collected and submitted to TCEQ for inclusion in SWQMIS. • Water Quality data and analysis summarized and included in the WPP.			

Tasks, Objectives and Schedules				
Task 4	Data Acquisition and Evaluation for Pollutant Characterization and Source Identification			
Costs	$35,442			
Objective	To collect data and information in order to identify causes and sources of water quality impairments, issues in the watershed, and estimate loading reductions needed to meet water quality standards.			
Subtask 4.1	TWRI will gather existing *E. coli*, flow and other relevant water quality data for the basin from TCEQ, CRP, USGS, and other sources as appropriate.			
	Start Date	Month 2	Completion Date	Month 18
Subtask 4.2	TWRI will obtain the number of existing water quality management plans and determine the current level and type of best management practice implementation existing in the watershed.			
	Start Date	Month 2	Completion Date	Month 8
Subtask 4.3	TWRI will assemble existing GIS data and develop needed maps including: watersheds and subwatersheds, land use/land cover, soils, topography, wastewater treatment facility locations, permitted confined animal feeding operation locations, geology, monitoring site locations, etc. as appropriate.			
	Start Date	Month 2	Completion Date	Month 31
Subtask 4.4	TWRI will assess OSSF numbers and locations using available information and will estimate OSSF densities in other areas of the watershed utilizing published methods.			
	Start Date	Month 2	Completion Date	Month 18
Subtask 4.5	TWRI will develop load duration curves (LDCs) for all sites in the watershed with adequate data to determine current loadings, total allowable load to meet standards, and the reductions needed to attain water quality standards.			
	Start Date	Month 6	Completion Date	Month 18
Subtask 4.6	TWRI will assess bacteria sources and potential pollutant contributions from those sources in the watershed using GIS-based methods that incorporate known or estimated animal populations and established methods for pollutant production.			
	Start Date	Month 6	Completion Date	Month 18
Deliverables	• Watershed maps as appropriate for stakeholder meetings and included in the WPP • Summarized findings on TPDES permittees, WQMPs, OSSF density and distribution, existing reports, LDCs and pollutant loadings included in the final WPP as appropriate and necessary • LDCs developed where feasible illustrating needed loading reductions to restore water quality • Spatial Analysis for watershed and appropriate maps for inclusion in WPP			

Tasks, Objectives and Schedules	
Task 5	Watershed Partnership Facilitation and Watershed Protection Plan (WPP) Development
Costs	$135,554
Objective	To coordinate and facilitate public involvement in a local watershed stakeholder group that will provide input into the decision making process for developing a nine-element WPP for the Mid and Lower Cibolo Creek watershed.

Subtask 5.1	TWRI will facilitate the development of the Mid and Lower Cibolo Creek Watershed Partnership to be comprised of a stakeholder group with a Steering Committee and associated subcommittees/workgroups for the purpose of WPP development. The stakeholder group will be made up of landowners, elected officials, agency representatives, industry groups, and others as appropriate. A stakeholder contact list will be developed and maintained throughout the project for use in informing and engaging the public.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 5.2	TWRI, with assistance from SARA, will develop (Months 1-3), and host and maintain (Months 4-24) a project website that will be used as a clearing house for all project related information. All presentations, documents and results will be posted to this website. It will also serve as a means to disseminate information to stakeholders and the general public. Unique visitors will be tracked through the website and reported in QPRs.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 5.3	TWRI, in coordination with SARA, will coordinate meetings, secure meeting locations, and prepare and disseminate meeting notices and agendas. Meeting summaries will be prepared as appropriate and posted to the project website. Meeting frequency may be adjusted throughout the course of the project to accomplish project goals. TSSWCB will review and approve all meeting notices, agendas, and meeting summaries prior to public dissemination.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 5.4	TWRI and SARA will work to develop and disseminate educational materials, including but not limited to, flyers, brochures, letters, news releases and other appropriate promotional publications to watershed stakeholders. TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 5.5	As needed, other public meetings including the Cibolo Creek Holistic Watershed Master Plan Project and planning meetings will be attended by appropriate project personnel, usually the Watershed Coordinator (TWRI), in order to communicate the goals and objectives of the project, activities and accomplishments to affected parties. These meetings may also include, city council, county commissioner's court, regional water planning, Clean Rivers Program, local Soil and Water Conservation Districts, Watershed Coordinator Roundtables, WPP Short Course and others as appropriate.			
	Start Date	Month 1	Completion Date	Month 31
Subtask 5.6	TWRI will develop a WPP for the Mid and Lower Cibolo Creek watershed based on criteria set forth in the USEPA *FY2004 NPS Program and Grants Guidelines for States and Territories*. Findings from the water quality monitoring in Task 3, Load Duration Curves and spatial analysis in Task 4, and stakeholder input will be utilized to develop the nine-element plan.			
	Start Date	Month 1	Completion Date	Month 31
Deliverables	• Stakeholder contact list • Project Website • Meeting notices, materials, agendas, attendance lists • Educational materials developed and distributed • Draft Nine element Watershed Protection Plan • Final Nine element Watershed Protection Plan			

Project Goals (Expand from Summary Page)

1. To coordinate the development of a nine element watershed protection plan for the Mid and Lower Cibolo Creek watersheds.

2. To foster coordinated technical assistance activities between TSSWCB, SARA and local government in the project area.

3. To collect water quality data of known and documented quality to support the development of an HSPF water quality model.

4. Establish and provide direction for a stakeholder group that will serve as a decision making body in the assessment of Cibolo Creek and facilitate the development of a WPP that satisfies EPA's nine key element requirements and will guide any further assessment or planning activities.

5. Develop an effective watershed protection plan through stakeholder involvement that provides a framework for best management practices so that the Mid and Lower Cibolo Creek meets the primary contact recreation standard 1 and nutrients are reduced in the basin so that dissolved oxygen criteria are met.

6. Educate the stakeholders on the methods and activities necessary to improve the water quality of the Mid and Lower Cibolo Creek watershed through the stakeholder meetings.

Measures of Success (Expand from Summary Page)

Measures of success include:

1. Coordination and engagement of a watershed stakeholder committee; this committee will be established so that it equally represents all stakeholder groups in the watershed and gives them a platform to direct and implement future management of their watershed.

2. The development and submission of a nine element watershed protection plan that has been carried through a thorough public review process and accepted by federal, state and local stakeholders.

3. The development of a watershed protection plan that can be utilized by local governmental agencies and other partners to implement suggested best management practices and to establish ordinances and other governmental control and management measures that have taken environmental impacts into consideration.

4. Increase in awareness of impacts of land use activities.

5. Collection of storm water quality samples from a minimum of five stormwater events to assist in the calibration of the HSPF water quality model being developed for the Cibolo Creek Holistic Watershed Master Plan.

6. Hold/attend a minimum of 18 meetings/working sessions with the watershed partnership and additional meetings with local stakeholders as needed to develop the watershed protection plan.

***2012 Texas NPS Management Program* Reference (Expand from Summary Page)**

Components, Goals, and Objectives

Component 1 - Explicit short- and long-term goals, objectives and strategies that protect surface … water.

Long-Term Goal – Protect and restore water quality affected by NPS pollution through assessment,…, and education.
Objectives

- 1 – Focus NPS abatement efforts, …available resources in watersheds identified as impacted by NPS pollution in the latest state approved *Texas Water Quality Inventory and 303(d) List.*
- 2 – Support the implementation of state, regional and local programs to prevent NPS pollution through assessment… and education.
- 6 – Develop partnerships, relationships…to facilitate collective, cooperative approaches to manage NPS pollution.
- 7 – Increase overall public awareness of NPS issues and prevention activities.
- 8 – Enhance public participation and outreach by providing forums for citizens and industry to contribute their ideas and concerns about the water quality management process.

Short-term Goals
Goal One – Data Collection and Assessment: Coordinate with appropriate federal, state, regional and local entities, and stakeholder groups to target water quality assessment activities in high priority, NPS-impacted watersheds…

- Objective B – Ensure that monitoring procedures meet quality assurance requirements and are in compliance with EPA-approve TSSWCB Quality Management Plans.
- Objective C – Conduct special studies to determine sources of NPS pollution and gain information to target TMDL and BMP implementation.
- Objective D – Develop…WPPs to maintain and restore water quality in water bodies identified as impacted by NPS pollution.

Goal Three – Education: Conduct education… activities to help increase awareness of NPS pollution and prevent activities which contribute to the degradation of water bodies… by NPS pollution.

- Objective A – Enhance existing outreach programs at the … local level to maximize the effectiveness of NPS education.
- Objective B – Administer programs to educate citizens about water quality and their potential role in causing NPS pollution.
- Objective D – Conduct outreach through CRP, AgriLife Extension, SWCDs and others to enable stakeholders and the public to participate in decision-making and provide a more complete understanding of water quality issues and how they relate to each citizen.

Objective G – Implement public outreach and education to maintain and restore water quality in water bodies impacted by NPS pollution.

Component 2 – Working partnerships and linkages with appropriate state, … regional, and local entities, private sector groups and Federal agencies.

Component 5 –Identify waters and their watersheds impaired by NPS pollution… Progressively address these identified waters by conducting more detailed watershed assessments and developing watershed plans…

EPA State Categorical Program Grants – Workplan Essential Elements ***FY 2011-2015 EPA Strategic Plan* Reference**
Strategic Plan Goal – Goal 2 Protecting America's Waters
Strategic Plan Objective – Objective 2.2 Protect and Restore Watersheds and Aquatic Ecosystems

Part III – Financial Information

Budget Summary		
Personnel	$	110,906
Fringe Benefits	$	33,558
Travel	$	3,898
Equipment	$	0
Supplies	$	1,650
Contractual	$	158,275
Construction	$	0
Other	$	12,480
Total Direct Costs	$	320,767
Indirect Costs (≤ 15%)	$	28,124
Total Project Costs	$	348,891

Budget Justification – TWRI		
Category	Total Amount	Justification
Personnel	$ 110,906	TWRI Extension Specialist 3 @ $68,712 for 1.8 months TWRI Research Associate @ $45,810 for 11.14 months TWRI Extension Assistant @ $36,240 for 1.45 months TWRI Program Manager @ $75,492 for 2.2 months TWRI Research Scientist & QAO @ 77,600 for 3.04 months TWRI Graduate Research Assistant @ $50,000 @ 50% FTE for 9 months *named positions are budgeted with a 3% annual pay increase in all years; TBD positions and graduate students are budgeted with a 3% pay increase in years after year 1 *(Salary estimates are based on average monthly percent effort for the entire contract. Actual percent effort may vary more or less than estimated between months; but in the aggregate, will not exceed total effort estimates for the entire project.)
Fringe Benefits	$ 33,558	Fringe benefits are calculated at a rate of 17.8% of salary to cover FICA, UCI, WCI, and retirement. An additional $695/month (prorated by % FTE) is calculated for group medical insurance. Estimates are in accordance with TAMUS Office of Budget & Accounting procedures established for FY2016. *(Fringe benefits estimates are based on salary estimates listed. Actual fringe benefits will vary between months coinciding with percent effort variations; but in the aggregate, will not exceed the overall estimated total.)
Travel	$ 3,898	Travel to watershed for stakeholder meetings 18 times for one person, one-night lodging and two days per diem. Travel expenses estimated: • Mileage: 354 miles/trip @ state mileage rate of $0.50/mile: $3,186 Travel to Texas Watershed Planning Short Course for Project Manager • Mileage: 400 miles round trip at state vehicle rate of $0.50/mile: $200 • Nightly Lodging and Daily Per Diem @ $120/night @ 3 nights: $360 Concur travel service fee $8 per trip: $152
Equipment	$ 0	N/A
Supplies	$ 1,650	Materials for meetings including, but not limited to, binders, paper, cartridges, name tags, etc. Fuel for rental car if no state vehicles are available ($1,650)
Contractual*	$ 158,275	San Antonio River Authority (SARA)
Construction	$ 0	N/A
Other	$ 12,480	Communications Services ($5,840) Data Analysis Team Website Services ($2,040) Printing WPPs ($2,500) Facility rental for meetings ($1,500) Software and license renewals ($200) Workshop Registration Fees: ($400)
Indirect	$ 28,124	Calculated at 15% of Modified Total Direct Cost

***SARA Contractual Budget Justification**

Category	Total Amount	Justification
Personnel	$ 63,816	

Department Manager	Melissa Bryant	111,649.81	1.00%
Project Manager (SARA)	Patricia Carvajal	69,535.00	21.5%
QA/Watershed Monitoring Senior Scientist	Rebecca Reeves	100,181.28	1.00%
Administrative Assistant	Padmini Devadoss	40,893.77	3.00%
Environmental Information Systems Specialist	Michelle Garza	65,007.67	1.00%
Water Quality Planner	Katherine Peché	51,813.68	2.50%
Stormwater Supervisor	Ernest Moran	79,915.74	25.00%
Senior Aquatic Biologist	Karen Sablan	55,081.01	1.00%
Senior Aquatic Biologist	Shaun Donovan	50,636.16	1.00%
Aquatic Biologist	Larry Larralde	48,576.43	1.00%
Aquatic Biologist	Douglas Knabe	40,519.76	1.00%
Aquatic Biologist	Chris Vaughn	43,955.97	1.00%
Stormwater Scientist	Mick Bartlett	41,792.36	25.00%
Watershed Monitoring Supervisor	Charles Lorea	78,223.74	1.00%
Laboratory & Data Management Senior Scientist	David Hernandez	82,153.98	2.50%
Engineer	Erin Cavazos	86,680.44	5.00%
Water Quality Planner/QAO	Jeanette Hernandez	47,925.37	2.50%
Senior Engineer	Aarin Teague	89,250.00	1.00%
Senior Stormwater Scientist	Karen Bishop	103,874.62	1.00%
Stormwater Specialist	Michelle E. Garza	46,166.49	1.00%

Fringe Benefits	$ 15,954	Fringe benefits are calculated at a rate of 25.0% of salary to cover FICA, UCI, WCI, and retirement
Travel	$ 1,507	Travel/training/lodging, etc. ($630) o Travel to watershed for meeting and public stakeholder meeting: per diem $630($35 per day). 9 times per year for one person. Use of SARA pool vehicle. Training Courses ($877) • Watershed Coordinator Course Registration $400 ($578 total) o Lodging $114/night (3 nights) o Per diem $59/day (4 days) • Implementation Course $100 ($299 total) o Lodging $135/night o Per diem $64/day
Equipment	$ 0	N/A

Supplies	$ 12,500	Laboratory supplies and water quality monitoring supplies • Replacement sondes/sensors for continuous monitoring units (temperature, pH, conductivity, dissolved oxygen o DO Sensor Tips 3*$195.00 = $585 o pH Sensor 3*$170.00 = $510 o Central Wiper 3*$115.00 = $345 o Desiccant replaced twice/site/per year = 6*$50.00 = $300 • Stormwater Site Remote Communication System 1 @ $3,300 • Laboratory supplies for laboratory analysis o Sample containers $810 o Various Chemicals for laboratory analysis $6,650
Contractual*	$ 25,000	SWCA stormwater monitoring • SWCA staff will be collecting samples from the sample sites when notified of a qualifying storm event. SWCA will be responsible for downloading data from the units as well as collecting the water quality samples. SWCA staff will then transport the samples to the SARA laboratory for analysis.
Construction	$ 0	N/A
Other	$ 29,925	Laboratory Analysis ($29,925) • Lab analysis for a minimum of 105 samples (3 sampling sites, 5 sampling events, 7 samples taken during each storm event) ($29,925) o Parameters analyzed: TSS, Ammonia, Chloride, *E.coli*, Nitrate, Nitrite, Sulfate, BOD, Total Phosphorus, TKN
Indirect	$ 9,573	15% of Personnel

***SWCA Contractual Budget Justification**

Category	Total Amount	Justification
Personnel	$ 25,000	**Position/Title** / **Bill Rate ($/hr)** / **Estimated Hours** / **Total** Specialist IV / Project Manager — $95.00 — 100 — $ 9,500.00 Specialist I / Biologist — $65.00 — 84.62 — $ 5,500.00 Technician II — $50.00 — 100 — $ 5,000.00 Technician II — $50.00 — 100 — $ 5,000.00 Total — $ 25,000.00 Above is an estimate of the rates and hours that will be needed by SWCA staff to collect samples from the stormwater stations on Cibolo Creek.
Fringe Benefits	$ 0	
Travel	$ 0	
Equipment	$ 0	
Supplies	$ 0	
Contractual*	$ 0	
Construction	$ 0	
Other	$ 0	
Indirect	$ 0	