TEXAS STATE Soil & Water CONSERVATION BOARD

Texas State Soil and Water Conservation Board
State Nonpoint Source Grant Program
FY 2023 Workplan 23-51

SUMMARY PAGE			
Title of Project	Proctor Lake Watershed Characterization		
Project Goals	• Characterize the watershed by collecting data towards identifying sources of pollution in the watershed contributing to water quality impairments and related issues. • Develop/maintain a successful public participation program, including a public relations and educational campaign. • Work with stakeholders to identify and refine goals, objectives, and indicators needed in the watershed planning process.		
Project Tasks	(1) Project Administration; (2) Quality Assurance; (3) Public Outreach, Education, Information; (4) Watershed Characterization – Data Evaluation		
Measures of Success	• Aggregation and analysis of existing data. • Characterization of causes and sources of impairments and overall stakeholder awareness of water quality. • Consensus stakeholder decisions on the goals, objectives, and indicators of addressing bacteria impairments. • Estimated source loadings.		
Project Type	Implementation (); Education (X); Planning (X); Assessment ( ); Groundwater ( )		
Status of Waterbody on *2022 Texas Integrated Report*	Segment ID	Parameter of Impairment or Concern	Category
	1222	Dissolved oxygen	CS
	1222A	Chlorophyll-a	CS
		Bacteria	5c
	1222B	Bacteria	5c
	1222C	Bacteria	5c
	1222D	Bacteria	CN
	1222E	Bacteria	5c
	1222F	Dissolved oxygen	CN
		Bacteria	CN
	1223	Chlorophyll-a	CS
		Dissolved oxygen	5c
		Bacteria	5c
	1223A	Nitrate	CS
	1223B	Bacteria	CN
Project Location (Statewide or Watershed and County)	Comanche, Eastland, Erath, Brown, Callahan, Stephens		
Key Project Activities	Hire Staff ( ); Surface Water Quality Monitoring ( ); Technical Assistance ( ); Education (X); Implementation ( ); BMP Effectiveness Monitoring ( ); Demonstration ( ); Planning (X); Modeling ( ); Bacterial Source Tracking ( ); Other ( )		
2022 Texas NPS Management Program Reference	• Component 1: LTG 1, 2, 6, 7, 8 • Component 1: STG 1A, 1C, 3A, 3B, 3D, 3G • Component 2, 3, 7		
Project Costs	Total	$ 132,809	
Project Management	• Texas A&M AgriLife Research, Texas Water Resources Institute		
Project Period	February 23, 2023 – February 28, 2025		

Part I – Applicant Information

Applicant							
Project Lead	Dr. Lucas Gregory						
Title	Associate Director						
Organization	Texas A&M AgriLife Research, Texas Water Resources Institute						
E-mail Address	LFGregory@ag.tamu.edu						
Street Address	1001 Holleman Dr E, 2118 TAMU						
City	College Station	County	Brazos	State	TX	Zip Code	77840-2118
Telephone Number	979-214-2361			Fax Number			

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 Research, Texas Water Resources Institute	Provide project oversight, QA/QC, public education, and outreach, conduct data collection, analysis, and characterization for a future watershed-based plan.
Watershed stakeholders including, but not limited to, landowners, soil and water conservation districts, city officials, county officials, river authorities, not for profit organizations, and other federal, state, and local governments.	Work with TWRI to gain and provide needed information for the development of the watershed characterization report.

Part II – Project Information

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

Watershed Information					
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	AU ID	Category on 2022 IR	Size (Acres)
Proctor Lake	120702010101	1222	1222_01	-	817,818
	120702010102	1222	1222_02	-	
	120702010103	1222	1222_03	CS	
	120702010104	1222A	1222A_01	CS, 5c	
	120702010105	1222B	1222B_01	5c	
	120702010106	1222C	1222C_01	5c	
	120702010107	1222C	1222C_02	-	
	120702010108	1222D	1222D_01	CN	
	120702010201	1222E	1222E_01	5c	
	120702010202	1222F	1222F_01	CN	
	120702010203	1223	1223_01	CS, 5c	
	120702010204	1223A	1223A_01	CS	
	120702010205	1223B	1223B_01	CN	
	120702010206	1224	1224_01	-	
	120702010207	1224	1224_02	-	
	120702010208	1224A	1224A_01	-	
	120702010209	1224C	1224C_01	-	
	120702010301				
	120702010302				
	120702010303				
	120702010304				
	120702010305				
	120702010306				
	120702010307				
	120702010401				
	120702010402				
	120702010403				
	120702010404				
	120702010405				
	120702010406				
	120702010407				
	120702010408				
	120702010409				

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: *2022 Texas Integrated Report,* Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.

Reference: 2022 Texas Integrated Report

Seg ID	AU ID	Cause of Impairment or Concern	Los	Point Sources	Non-Point Sources	Unknown Sources
1222	1222_03	Depressed dissolved oxygen	CS			Unknown
1222A	1222A_01	Chlorophyll-a	CS		Animal feeding operations	
					Natural sources	
		Bacteria	NS		Animal feeding operations	
					Natural sources	
					Non-point source	
1222B	1222B_01	Bacteria	NS		Non-point source	
1222C	1222C_01	Bacteria	NS		Non-point source	
1222D	1222D_01	Bacteria	CN		Non-point source	
1222E	1222E_01	Bacteria	NS		Non-point source	
1222F	1222F_01	Depressed dissolved oxygen	CN			Unknown
		Bacteria	CN			Unknown
1223	1223_01	Chlorophyll-a	CS		Internal nutrient recycling	
					Non-point source	
		Depressed dissolved oxygen	NS		Natural sources	
		Bacteria	NS		Agriculture	
					Animal feeding operations	
					Natural sources	
					Non-point source	
1223A	1223A_01	Nitrate	CS			Unknown
1223B	1223B_01	Bacteria	CN		Non-point source	

Project Narrative

Problem/Need Statement

The *2022 Texas Integrated Report (TCEQ 2022)* identifies several stream segments in the Proctor Lake watershed as impaired and/or having concerns for use attainment and screening levels. Segments 1222A, 1222B, 1222C, 1222E, and 1223 are impaired for bacteria. Additionally, segment 1223 is impaired for elevated dissolved oxygen whereas 1222 and 122F have concerns for elevated dissolved oxygen, 1222A and 1223 have concerns for chlorophyll-a, 1222D, 1222F and 1223B have concerns for bacteria, and 1223B has concerns for nitrate. Because of the impairments, the segments do not support their designated uses.

The segments drain 817,818 acres of land in Comanche, Eastland, Erath, Brown, Callahan, and Stephens counties. According to the Brazos River Authority's *2022 Basin Summary Report (BRA 2022)*, the watershed is largely rural with land use primarily rangeland and improved pastureland with areas of mixed forestland. According to the *2022 Texas Integrated Report*, causes of impairments and concerns for use or screening levels are non-point sources such as animal feeding operations, and agriculture. Other causes are unknown.

As the most upstream segments of the Leon River, and the main source of water in Proctor Lake, impairments in this portion of the Leon River have far-reaching downstream impacts. The portion of the Leon River below Proctor Lake already has an approved watershed management plan. Implementing management measures in the upper portion of the Leon watershed would, in addition to addressing impairments in the upstream segments, lead to cumulative benefits

downstream. Due to the high instances of primary contact in the segment waters and downstream, stakeholder engagement is important to the implementation and success of water quality mitigation measures.

Project Narrative

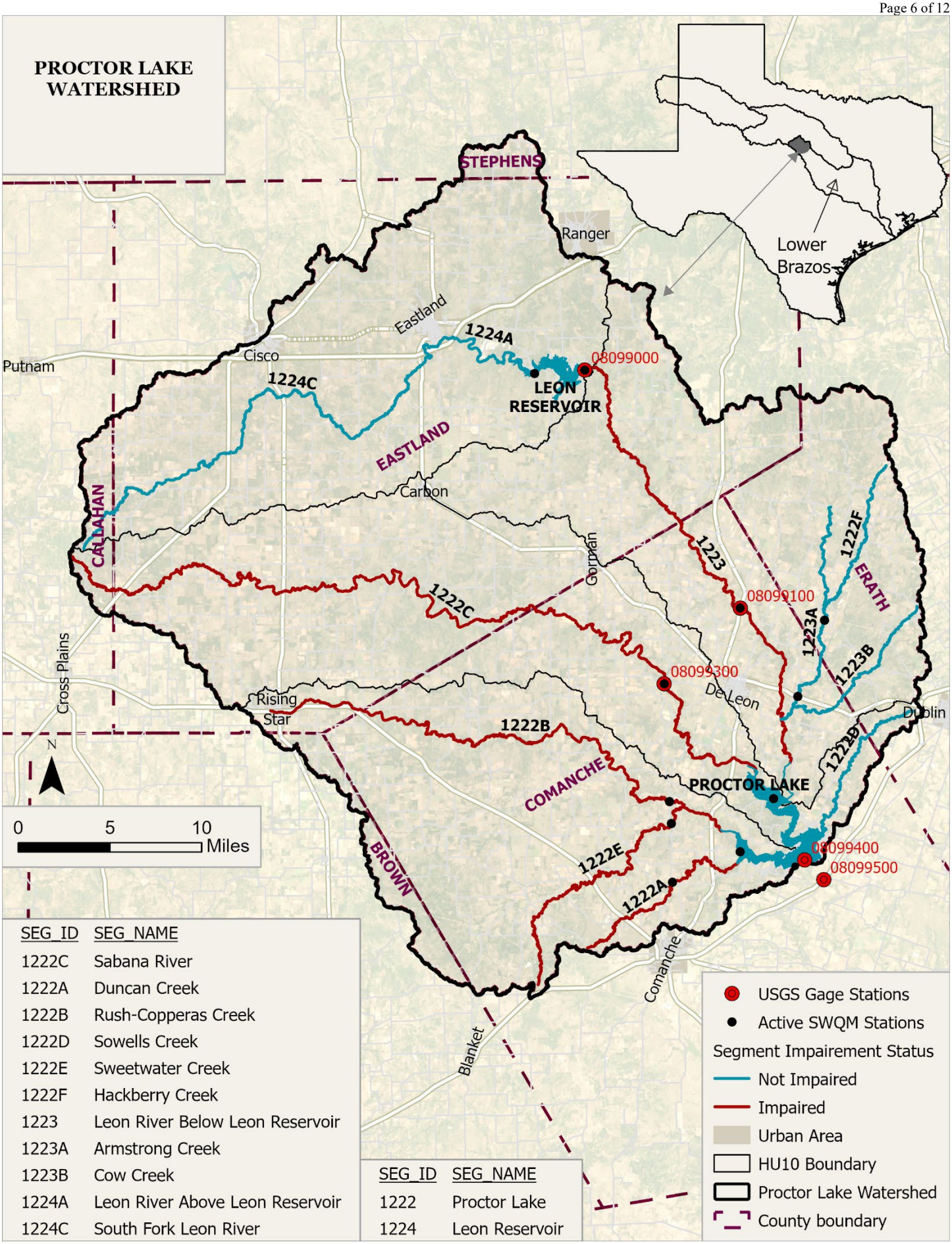
General Project Description

The Proctor Lake watershed, that encompasses the most upstream portion of the Leon River and tributaries draining into the Proctor Lake, is a rural watershed with farming and ranching being the dominant land use activities. Primary impairments in this watershed include bacterial and depressed dissolved oxygen impairments with concerns for nutrient enrichment and increased chlorophyll-a. A majority of the nutrient loading and pollution can be attributed to non-point input which include wildlife, confined animal feeding operations, livestock grazing and agriculture land use (TCEQ 2022, BRA 2022). Concentrations of most of the parameters causing impairment/ concern for use attainment or screening levels are increasing (BRA 2022).

The principal factor in achieving water quality improvement is to have strategies that are locally developed, supported, and implemented. Characterizing the sources and causes of impairments is a critical step in determining appropriate and effective methods and locations of management strategies aimed at restoring water quality. To support the identification and implementation of measures aimed at improving water quality of segments in the Proctor Lake watershed, this project will analyze existing data to determine watershed and water quality data and pollutant sources. The process will include gathering previously collected water quality data, wildlife densities, and livestock estimates within the watershed. A search of available data for septic systems and wastewater and stormwater infrastructure will also be collected. If these data do not exist for this watershed, this information will be estimated using approaches similar to other watersheds. By collecting and analyzing these data in tandem, a conceptual model can be developed to show the linkage between the water quality problems and sources of impairments. A spatial and temporal visualization of water quality problems and sources of pollution in the watershed will be created using geographic information systems (GIS).

Streamflow data is available for segments 1223, 1222B and 122C. For segments with limited/no flow data, streamflow will need to be estimated to calculate Load Duration Curves (LDCs). For this project, qualitative streamflow estimation methods will be used.

Due to documented instances of primary contact recreation in impaired segments, stakeholder education is a priority in this project. General education delivery in the watershed will raise awareness about local water quality issues and will provide general education regarding causes, sources, impacts of and potential solutions to water quality impairments. In addition to these education programs, stakeholders will be engaged, when appropriate, to participate in characterizing the watershed.



SEG_ID	SEG_NAME
1222C	Sabana River
1222A	Duncan Creek
1222B	Rush-Copperas Creek
1222D	Sowells Creek
1222E	Sweetwater Creek
1222F	Hackberry Creek
1223	Leon River Below Leon Reservoir
1223A	Armstrong Creek
1223B	Cow Creek
1224A	Leon River Above Leon Reservoir
1224C	South Fork Leon River

SEG_ID	SEG_NAME
1222	Proctor Lake
1224	Leon Reservoir

Tasks, Objectives and Schedules				
Task 1	Project Administration			
Costs	Total	$ 19,921		
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 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 1st of December, March, June and September. QPRs shall be distributed to all Project Partners.			
	Start Date	Month 1	Completion Date	Month 24
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 24
Subtask 1.3	TWRI 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 24
Subtask 1.4	TWRI will develop a Final Report that summarizes activities completed and conclusions reached during the project and discusses the extent to which project goals and measures of success have been achieved.			
	Start Date	Month 1	Completion Date	Month 24
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	Total	$ 5,312		
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	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*.			
	Start Date	Month 1	Completion Date	Month 6
Subtask 2.2	TWRI will implement the approved QAPP. TWRI will submit revisions and necessary amendments to the QAPP as needed.			
	Start Date	Month 6	Completion Date	Month 24
Deliverables	• QAPP approved by TSSWCB in both electronic and hard copy formats • Approved revisions and amendments to QAPP, as needed • Data of known and acceptable quality as reported through Task 4			

Tasks, Objectives and Schedules				
Task 3	Public Outreach, Education, Information			
Costs	Total	$ 39,843		
Objective	To educate, identify, engage, and gain stakeholder support for the characterization of Proctor Lake watershed.			
Subtask 3.1	Public Education – TWRI will host public education and outreach events in the project area twice annually. Hosting these events requires providing coordination and logistical support even though the program itself is already supported through other sources of funding. Such events can include but should not be limited to: • Lone Star Healthy Streams • Texas Well Owner Network • Texas Watershed Stewards • Texas Riparian and Stream Ecosystem Education			
	Start Date	Month 1	Completion Date	Month 24
Subtask 3.2	Meet with Key Stakeholders in the Watershed – TWRI will identify and meet with key stakeholders in the watershed to inform them of water quality issues. TWRI will participate in at least two key stakeholder meetings per year.			
	Start Date	Month 1	Completion Date	Month 24
Subtask 3.3	Dissemination of Project Information – TWRI will inform the public about upcoming meetings and educational events, location of educational materials, status of ongoing projects, current water quality and how the public/stakeholders can address water quality issues. Activities may include, but are not limited to: • Hosting a project webpage (updated quarterly) • Public events (project information and presentations at events) as appropriate • Maintaining an email list for notifying stakeholders of activities and meetings • Public press releases TSSWCB must approve all announcements, letters and publications prior to distribution.			
	Start Date	Month 1	Completion Date	Month 24
Deliverables	• Stakeholder group and public meeting agendas, minutes, sign-in sheets, and other available documentation (as necessary) • Disseminate project information through: o Project website (updated quarterly) o Public events (project information and presentations) o Email lists o Public press releases			

Tasks, Objectives and Schedules				
Task 4	Watershed Characterization – Data Evaluation			
Costs	Total	$ 67,733		
Objective	To collect data and information to identify the causes of water quality impairments and issues in the watershed and to identify the sources of pollution contributing to water quality impairments and issues.			
Subtask 4.1	Assemble Existing Data and Information – TWRI will gather existing data and information pertaining to water quality impairments and issues in the watershed. This data and information will, to the extent possible: • Support GIS analysis; • Calculate LDCs; • Describe relevant watershed characteristics; and, • Identify causes and sources of water quality impairments and issues.			
	Start Date	Month 6	Completion Date	Month 18
Subtask 4.2	Analyze Existing Data and Information – TWRI will analyze the existing data and information and, to the extent possible, characterize water quality conditions, watershed conditions, and sources of pollution contributing to water quality impairments and issues. The analysis will: • Lead to an understanding of where and when water quality impairments and/or issues occur and what could be causing the impairments and issues. • Allow for data and information to be assembled into a data inventory for the watershed. The data and information will be presented in appropriate formats including graphs, tables, and maps. (See EPA Handbook, Chapter 5).			
	Start Date	Month 6	Completion Date	Month 18
Subtask 4.3	Flow Estimation – TWRI will compare qualitative streamflow estimation methods to determine the method best suited for estimating streamflow. An analysis of the comparison will be included in the Watershed Characterization Report.			
	Start Date	Month 6	Completion Date	Month 18
Subtask 4.4	Watershed Characterization – Data Collection Report – TWRI will develop a report summarizing information developed under Task 4 to characterize the watershed and identify causes and sources of pollution. The report will be submitted for approval to the TSSWCB project manager.			
	Start Date	Month 18	Completion Date	Month 24
Deliverables	• Draft and Final Watershed Characterization Report			

Project Goals (Expand from Summary Page)
To address the concerns and impairments most efficiently, the watershed must be characterized to identify potential causes and sources. It is a goal of this project to identify existing data and identify data gaps for characterization. To gain public support of the project, TWRI will facilitate a stakeholder group (if determined to be appropriate) and identify objectives and goals needed for the watershed planning process. This will also include hosting public education events where stakeholders will be educated on water quality and mitigation strategies. Ultimately, it is the goal of this project to accomplish Element A and initiate Element B of EPAs Nine Elements for Watershed Plans found in the Handbook for Developing Watershed Plans to Restore and Protect our Waters.

Measures of Success (Expand from Summary Page)
Overall, this project will be successful when stakeholders have contributed to a consensus decision of goals, objectives, and indicators for addressing the water quality issues in the watershed. Additionally, this project will be successful when the watershed has been characterized through data aggregation and analysis efforts, identifying potential causes and sources of impairments, and loadings have been calculated. Progress will be reported in quarterly progress reports and results will be provided in a final task report.

***2022 Texas NPS Management Program* Reference (Expand from Summary Page)**
Components, Goals, and Objectives
Component 1: Explicit short- and long-term goals, objectives … that protect surface and groundwater. • LTG 1: Focus NPS abatement efforts, implementation strategies, and available resources in watersheds identified as impacted by nonpoint source pollution • LTG 2: Support the implementation of state, regional and local programs to prevent NPS pollution through assessment, implementation, and education. • LTG 6: Develop partnerships, relationships, memoranda of agreement, and other instruments to facilitate collective, cooperative approaches to manage nonpoint source pollution. • LTG 7: Increase overall public awareness of NPS issues and prevention activities • LTG 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 • STG 1: Data Collection and Assessment: coordinate with appropriate federal, state, regional, and local entities…. Where additional information may be needed o Objective A: Identify surface water bodies … that need additional information to characterize non-attainment of designated uses and water quality standards o Objective C: Conduct special studies to determine sources of NPS pollution and gain information to target water quality planning and BMP implementation. • STG 3: Education: Conduct education and technology transfer activities to help increase awareness of NPS pollution and prevent activities contributing to the degradation of water bodies, including aquifers, by NPS pollution o Objective A: Enhance existing outreach programs at the state, regional and local levels to maximize the effectiveness of NPS education o Objective B: Administer programs to educate citizens about water quality and their potential role in causing NPS pollution o Objective D: Conduct outreach through the CRP, 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. o 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 to appropriate state, …, regional and local entities, private sector groups and federal agencies.
Component 3: Balanced approach that emphasizes both state-wide nonpoint source programs and on-the-ground management of individual watersheds.
Component 7: Manage and implement the NPS program efficiently and effectively, including necessary financial management.

Part III – Financial Information

Category	Total
Personnel	$ 76,282
Fringe Benefits	$ 28,422
Travel	$ 1,573
Equipment	$ 0
Supplies	$ 500
Contractual	$ 0
Construction	$ 0
Other	$ 8,709
Total Direct Costs	$ 115,486
Indirect Costs (≤ 15%)	$ 17,323
Unrecovered IDC	$ 0
Total Project Costs	$ 132,809

Budget Justification		
Category	Total Amount	Justification
Personnel	$ 76,282	TBD Program Manager: @ $78,614 annually, 2 mo. – $13,294 Research Specialist: @ $55,000 annually, 7.74 mo. – $37,105 TBD QA officer: @ $75,000 annually, 1.2 mo. – $7,613 TBD Research Associate: @ $60,000 annually, 3.60 mo. - $18,270 *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 aggregate, will not exceed total effort estimates for the entire project.) *cell phone allowances for project calls/emails during & after business hours & travel are occasionally factored into salaries & fringe, but again, will not exceed overall dollar amount.
Fringe Benefits	$ 28,422	Fringe for faculty and staff is calculated at 18.9% salary plus $963 per month. Fringe benefits for eligible students is calculated at 10.9% salary plus $560 per month. *(Fringe benefits estimates are based on salary the estimates listed. Actual fringe benefits will vary between months coinciding with percent effort variations; but in aggregate, will not exceed the overall estimated total.) *cell phone allowances for project calls/emails during & after business hours & travel are occasionally factored into salaries & fringe, but again, will not exceed overall dollar amount.
Travel	$ 1,573	Mileage to and from the watershed: 4 trips @ the state mileage rate: est. @ $1,200 2 nights hotel @ GSA hotel rate : est @ $196 3 days per diem @ GSA per diem rate: est @ $177
Equipment	$ 0	N/A
Supplies	$ 500	General project supplies, including, but not limited to, pens, paper, binders, labels, batteries, etc.
Contractual*	$ 0	N/A
Construction	$ 0	N/A
Other	$ 8,709	Communication Services: $3,000 Website maintenance fees: $960 Facility Rental: $2,000 Computer Resources: $2,749
Indirect	$ 17,323	Per the RFP requirements, indirect costs are limited at 15% of total direct costs. - $115,486 Total Direct Costs * 15% = $17,323