Texas State Soil and Water Conservation Board
State Nonpoint Source Grant Program
FY 2019 Workplan 19-56

SUMMARY PAGE			
Title of Project	Targeted Education to Decrease Nonpoint Source Loadings		
Project Goals	• Development and delivery of outreach and educational materials • Adoption of conservation plans by landowners • Increased landowner awareness and knowledge		
Project Tasks	(1) Project Administration; (2) Development and Delivery of Targeted Educational Materials; (3) Effectiveness Evaluation		
Measures of Success	• Delivery of educational materials as scheduled • Development of a contact list • Number of conservation plans and water quality management plans adopted • Increase in knowledge		
Project Type	Implementation (X); Education (X); Planning ( ); Assessment ( ); Groundwater ( )		
Status of Waterbody on *2014 Texas Integrated Report*	Segment ID 1602_03 1602B_01 2001_01 2003_01 2004_02 2004A_01 2004B_02	Parameter of Impairment or Concern Bacteria Bacteria Bacteria Bacteria Bacteria, nitrate, total phosphorus Bacteria, depressed dissolved oxygen Bacteria, depressed dissolved oxygen	Category 5c 5c 5a 5a 5c, CS 5b, CN, CS 5c, CS
Project Location (Statewide or Watershed and County)	Bee, Goliad, Jackson, Lavaca, Refugio, San Patricio,		
Key Project Activities	Hire Staff ( ); Surface Water Quality Monitoring ( ); Technical Assistance ( ); Education (X); Implementation (X); BMP Effectiveness Monitoring ( ); Demonstration ( ); Planning ( ); Modeling ( ); Bacterial Source Tracking ( ); Other ( )		

2017 Texas NPS Management Program Reference	• Long-Term Objectives 1, 2, 3, and 7
	• Short-Term Objectives
	  o Implementation: D
	  o Education: A, B, and G
	• Milestones
	  o Priority Watershed Milestones (Ch. 2): Implementation
	  o NPS Program Milestones (Appendix E): Milestone/Measurement- ST2/D		

Project Costs	$71,904		
Project Management	• Texas A&M AgriLife Extension Service, Texas Water Resources Institute		
Project Period	June 1, 2019 – May 31, 2021		

Part I – Applicant Information

Applicant							
Project Lead	T. Allen Berthold, Ph. D.						
Title	Assistant Director						
Organization	Texas A&M AgriLife Extension Service, Texas Water Resources Institute						
E-mail Address	taberthold@ag.tamu.edu						
Street Address	578 John Kimbrough Blvd., Suite 131						
City	College Station	County	Brazos	State	TX	Zip Code	77843
Telephone Number	979-845-2028			Fax Number	979-845-0662		

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 Service, Texas Water Resources Institute (TWRI)	TWRI will manage the project, ensure quality assurance of all data collected, develop and deliver educational material, evaluate knowledge gained by landowners, and evaluate the effectiveness of campaign

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	X	No	
If yes, identify the document.	Lavaca River Watershed Protection Plan (http://matagordabasin.tamu.edu/media/660830/LavacaRiverWPP-DRAFT-2017-06026.pdf) Two Total Maximum Daily Loads for Indicator Bacteria in the Tidal Segments of the Mission and Aransas River (https://www.tceq.texas.gov/assets/public/waterquality/tmdl/76copano/76A-MissionAransasTMDL-adopted.pdf) Implementation Plan for Two Total Maximum Daily Loads for Indicator Bacteria in the Tidal Segments of the Mission and Aransas Rivers (https://www.tceq.texas.gov/assets/public/waterquality/tmdl/76copano/76A-MissionAransasI-Plan-Approved.pdf)						
If yes, identify the agency/group that developed and/or approved the document.	Developing Organization: TWRI			Year Developed	2018, 2016		

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2014 IR	Size (Acres)
Aransas River Watershed	121004070401-12100407404; 121004070301-121004070305; 121004070201-121004070206; 121004070101-121004070106	2003; 2004; 2004A; 2004B	5a 5c, CS 5b, CN, CS 5c, CS	549,120
Lavaca River Watershed	121001010401-121001010404; 121001010301-121001010305; 121001010201-121001010206; 121001010101-121001010108	1601; 1602; 1602B; 1602C	5c 5c	581,120
Mission River Watershed	121004060301-121004060307; 121004060201-121004060209; 121004060101-121004060109	2001; 2002	5a	664,320

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: *2014 Texas Integrated Report*, Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.

Impairments (*2014 Texas Water Quality Inventory and 303(d) List*)

Segment 1602: Lavaca River Above Tidal

	Impairment	Category	Year Listed
1602_03	bacteria	5c	2008

Segment 1602B: Lavaca River Above Tidal

	Impairment	Category	Year Listed
1602B_01	bacteria	5c	2014

Segment 2001: Mission River Tidal

	Impairment	Category	Year Listed
2001_01	bacteria	5a	2004

Segment 2003: Aransas River Tidal

	Impairment	Category	Year Listed
2003_01	bacteria	5a	2004

Segment 2004: Aransas River Above Tidal

	Impairment	Category	Year Listed
2004_02	bacteria	5c	2014

Segment 2004A: Aransas Creek

	Impairment	Category	Year Listed
2004A_01	bacteria	5b	2006

Segment 2004B: Poesta Creek

	Impairment	Category	Year Listed
2004B_02	bacteria	5c	2014

Concerns (*2014 Texas Water Quality Inventory)*	Level of Support
1501: Chlorophyll-a, Depressed Dissolved Oxygen	NS (Non-supporting), CS (concern for screening levels)
2004: Nitrate, Total Phosphorus	CS (concern for screening levels)

2004A: Depressed Dissolved Oxygen	CN (concern for near non-attainment), CS (concern for screening levels)
2004B: Depressed Dissolved Oxygen	CS (concern for screening levels)

Sources *(2014 Texas Water Quality Inventory*)
Bacteria: Non-point source and some unknown sources; **Chlorophyll-a:** Non-point source; **Nitrate:** Non-point source and unknown sources; **Total Phosphorus:** Non-point source and unknown sources; **Depressed Dissolved Oxygen:** Non-point source, municipal point source discharges, and unknown sources.

Project Narrative

Problem/Need Statement

Excessive indicator bacteria (*E. coli* or *Enterococcus*) remains the most frequent impairment issue for Texas water bodies. In rural and agriculturally-dominated watersheds, watershed protection plans frequently identify the improvement of grazing practices through implementation of NRCS Conservation Plans or TSSWCB certified WQMPs as a management measure to reduce bacteria loads. Landowners typically work with local SWCDs and NRCS to develop and implement these operation-specific plans that protect and improve water quality; however, making landowners aware of the programs available to them is a challenge. A traditional educational approach is for watershed managers to deliver in-person education programs, but these programs only reach 15 – 75 landowners and each program can be relatively expensive. Additionally, a major limitation of in-person education programs is that program attendees are only those who have time to attend, so the reach of the education programs is often limited.

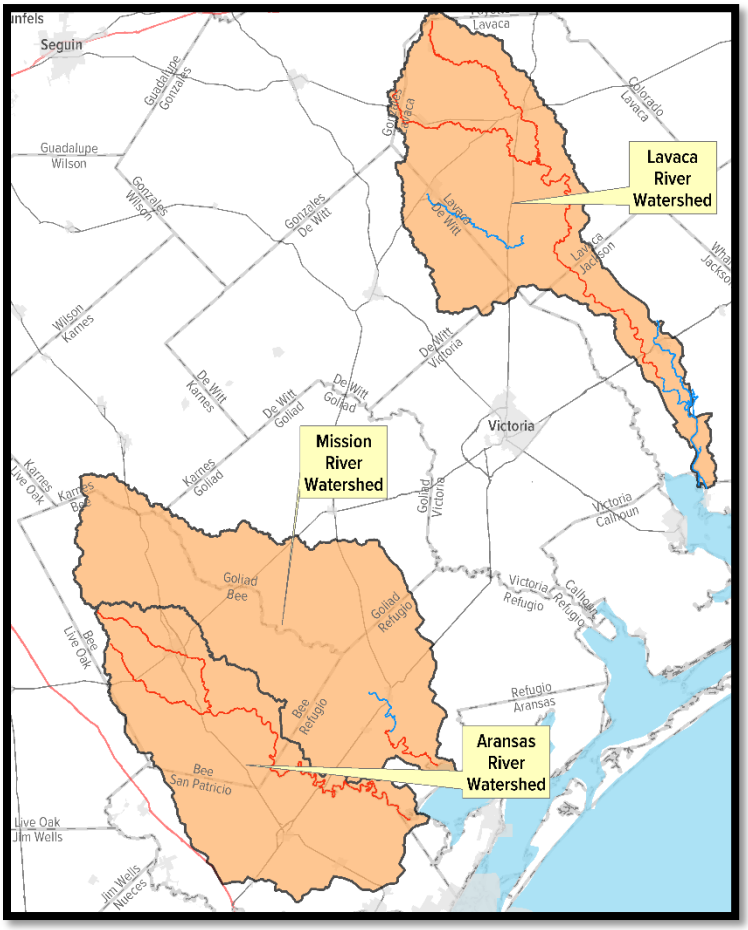
Resources to implement watershed protection plans are becoming increasingly limited and competitive, so watershed managers must be innovative in their approaches to educating and encouraging landowners to adopt best management practices. Also, many landowners do not live in the same county as the property they own and lease it to someone else; however, it is often still the responsibility of the landowner to make decisions about certain practices and work with the local producer to ensure practices are implemented. To have a broader reach of both resident and absentee landowners in a cost-effective manner, new educational campaigns should be attempted.

A study conducted in a rural Central Texas watershed by Dewald, Leggette, Murphrey, Berthold, and Wagner (2018) showed that landowners preferred to be contacted quarterly through direct mailings from a trusted source, such as Texas A&M AgriLife Extension Service, about conservation practices to improve water quality when it comes to receiving water related information. TWRI has worked in many watersheds that typify these conditions, including the Lavaca River Watershed and the Mission and Aransas River Watersheds. These watersheds currently have impaired waterbodies for excessive indicator bacteria and the dominant land uses are used for livestock grazing, providing an excellent opportunity to widely reach producers and encourage them to adopt practices through SWCD and NRCS programs. Reaching more landowners to encourage their participation is crucial to meeting the goals outlined in the watershed protection plan.

Dewald, S., Leggette, H. R., Murphrey, T. P., Berthold, A., and Wagner, K. (2018). Communicating to Landowners in the Texas Little River Watershed: A descriptive Analysis of Their Communication Preferences for Receiving Water Related Information. *Journal of Agricultural Education, 59*(2), 343-369. doi:10.5032/jae.2018.02343

Project Narrative

General Project Description



The goal of this project is to increase adoption of best management practices by landowners by reaching out to them through direct delivery of education and outreach materials. To accomplish this goal, TWRI will work with county appraisal districts to acquire landowner data. This data will be sorted to remove parcels that fall within city limits, remove parcels that do not qualify for agricultural tax exemptions and remove duplicates, providing a final contact list. TWRI will also utilize an in-house communications team that produces professional, high quality educational materials. The educational materials should include information about rotational grazing, benefits to the landowner (e.g. improved heard health, increased forage availability, lower input costs, etc.), a call to action, and local experts that can provide financial and technical assistance. Using the contact list generated, TWRI will mail the educational materials to each landowner on a quarterly basis for one year in one county.

To determine if the education campaign was effective, TWRI will work with local SWCDs and NRCS in two total counties (likely Lavaca and Bee or Goliad County due to their similarities) within the Lavaca and Mission and Aransas River watersheds. Residents that fall within one of the counties (likely Lavaca county) will be the group that receives the educational materials. TWRI will provide the SWCD and NRCS a contact list and the district will track the number of landowners that inquire about a plan as well as the number of landowners that adopt plans. Due to privacy rules currently in place, the SWCD and NRCS will only provide TWRI with a total number of inquiries and plans developed during the project period. Similarly, TWRI will work with a SWCD and NRCS office where the educational campaign was not implemented. A contact list for that county will also be provided to the local offices and inquiries and plans developed will be provided to TWRI as an aggregate. Using the difference in inquiry and plan numbers between the two counties, TWRI will determine whether the educational campaign was more successful than traditional approaches to encouraging the agricultural community to inquire about and adopt practices.

TWRI will also administer a pre- and post-evaluation within the two counties selected for the project. The purpose of the evaluation will be to measure knowledge gained through the educational campaign as well as the intention to adopt. Prior to administration of the evaluation, TWRI will secure Institutional Review Board approval to protect participants from harm. As results are received, differences between the two groups will be analyzed and provided to TSSWCB in a final report.

Tasks, Objectives and Schedules				
Task 1	Project Administration			
Costs	$8,628			
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 March, June, September and December. 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 monthly.			
	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	Development and Delivery of Targeted Educational Materials			
Costs	$34,514			
Objective	Identify landowners within project watersheds where the adoption of grazing practices are likely to have the largest impact.			
Subtask 2.1	TWRI will work with one local County Appraisal District per watershed to acquire landowner contact information for targeting distribution of educational materials. A database of landowner contact information will be developed by removing landowners that fall within city boundaries as well as removing duplicates.			
	Start Date	Month 1	Completion Date	Month 6
Subtask 2.2	TWRI will generate (and/or use content from existing educational materials) educational brochures/pamphlets unique to each project watershed. Content of the materials will include information on water quality, best management practices, a call to action and contact information for local SWCD and NRCS offices.			
	Start Date	Month 1	Completion Date	Month 6

Subtask 2.3	TWRI will mail educational materials to landowners identified in subtasks 2.1 to encourage them to adopt WQMPs, Conservation Plans and appropriate BMPs. Mailings will occur on a quarterly basis to one county for a duration of one year.			
	Start Date	Month 6	Completion Date	Month 18
Deliverables	• Database of landowner contact information • Draft and final educational materials • Proposed mailing schedule			

Tasks, Objectives and Schedules				
Task 3	Effectiveness Evaluation			
Costs	$28,762			
Objective	To evaluate the effectiveness of the education campaign in increasing adoption of best management practices and increasing water quality.			
Subtask 3.1	TWRI will work with local SWCDs and NRCS offices to track the number of plans that have been implemented within the counties identified by the project team (one county per watershed). Data shared by SWCDs and NRCS will be aggregate data and no individual information will be shared.			
	Start Date	Month 1	Completion Date	Month 24
Subtask 3.2	TWRI will conduct pre- and post-evaluations within priority subwatersheds to assess knowledge gained and response to messaging. Pre-evaluations will be administered prior to any educational materials being delivered, and upon completion of the mailing schedule, post-evaluations will be administered.			
	Start Date	Month 1	Completion Date	Month 24
Deliverables	• Estimated number of plans and practices implemented • Draft and final pre- and post-evaluations • Pre- and post-evaluation results			

Project Goals (Expand from Summary Page)

The primary goal of the proposed project is to increase landowner adoption of best management practices through a more cost-effective approach than traditional education programs. To achieve this goal, TWRI will develop and deliver educational materials directly to landowners through mail. The targeted educational material will include concise and relevant information for landowners explaining why program participation is important and how to participate. We estimate that this project will repeatedly put best practice information directly in the hands of high priority landowners that may otherwise not attend existing workshops, meetings or information sessions.

Measures of Success (Expand from Summary Page)

Overall, this project will be successful when educational materials are delivered to key stakeholders. Through the distribution of the educational materials to the stakeholders, we anticipate that the number of Conservation Plans and Water Quality Management Plans will increase.

***2017 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 Goals** – Protect and restore water affected by NPS pollution through assessment,…, and education. Objectives • 1 – Focus NPS abatement efforts, …available resources in watersheds identified as impacted by NPS pollution • 2 – Support the implementation of state, regional and local programs to prevent NPS pollution through assessment… and education. • 3 – Support the implantation of state, regional, and local programs to reduce nonpoint source pollution, such as the implementation of strategies defined in TMDL I-Plans, WPPs, and other water quality planning efforts in the state. • 7 – Increase overall public awareness of NPS issues and prevention activities. **Short-term Goals** Goal Two – Implementation: Implement TMDL I-Plans and/or WPPs and other state, regional, and local plans/programs to reduce nonpoint source pollution by targeting implementation activities to the areas identified as impacted or potentially degraded by nonpoint source pollution with respect to use criteria. • Objective D – Implement TMDL I-Plans, WPPs, and other state, regional, and local plans developed to restore and maintain water quality in water bodies identified as impacted by nonpoint source 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 … regional and 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 G – Implement public outreach and education to maintain and restore water quality in water bodies impacted by NPS pollution.

Part III – Financial Information

Budget Summary		
Personnel	$	40,633
Fringe Benefits	$	3,220
Travel	$	124
Equipment	$	0
Supplies	$	0
Contractual	$	0
Construction	$	0
Other	$	18,548
Total Direct Costs	$	62,525
Indirect Costs (≤ 15%)	$	9,379
Total Project Costs	$	71,904

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	$ 40,633	Assistant Director: $83,718 @ 1.218 months over two years ($8,497) Research Assistant: $30,000 @ 12.8544 months over two years ($32,136) *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	$ 3,220	Fringe for faculty and staff is calculated at 16.8% salary plus $747 per month Graduate Student Fringe Benefits Calculated at: 0.1 * salary + $420/mo. *(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	$ 124	Estimated 1 trip to Hallettsville, TX at 248 miles round trip * $0.50/mile
Equipment	$ 0	NA
Supplies	$ 0	NA
Contractual*	$ 0	NA
Construction	$ 0	NA
Other	$ 18,548	Communication Services – $4,544 Print Services: 20,000 large post cards @ $0.20 each; 6,800 evaluations @ $0.50 each; 6,800 evaluation post cards @ $0.15 each; 33,600 total mailings @ .16 each postage; return survey postage @ $1,300 *$.16 each – $14,004
Indirect	$ 9,379	15% of Total Direct Costs