

Texas State Soil and Water Conservation Board
Clean Water Act §319(h) Nonpoint Source Grant Program
FY 2022 Workplan 22-06

SUMMARY PAGE			
Title of Project	Matagorda Basin Water Quality Monitoring		
Project Goals	<ul style="list-style-type: none"> Conduct routine water quality monitoring throughout the Matagorda Basin in the three watersheds with EPA-accepted Watershed Protection Plans: Lavaca River Watershed, Tres Palacios Creek Watershed, and Carancahua Bay Watershed 		
Project Tasks	(1) Project Administration; (2) Quality Assurance; (3) Routine Surface Water Quality Monitoring		
Measures of Success	<ul style="list-style-type: none"> Data collection that will track surface water quality impairment progress in the watersheds 		
Project Type	Implementation (X); Education (); Planning (); Assessment (); Groundwater ()		
Status of Waterbody on 2020 Texas Integrated Report	<u>Segment ID</u> Lavaca River: <ul style="list-style-type: none"> 1602, 1602B, 1602C Tres Palacios Creek: <ul style="list-style-type: none"> 1501, 1502 Carancahua Bay: <ul style="list-style-type: none"> 2456, 2456A 	<u>Parameter of Impairment or Concern</u> Impairments: Lavaca River: <ul style="list-style-type: none"> 1602_02 and _03: Bacteria (recreation) 1602B_01: Bacteria (recreation) 1602C_01 and 02: Depressed dissolved oxygen in water Tres Palacios Creek: <ul style="list-style-type: none"> 1501_01: Bacteria (recreation); Depressed dissolved oxygen in water Carancahua Bay: <ul style="list-style-type: none"> 2456_02: Bacteria (recreation) 2456A_01: Depressed dissolved oxygen in water Concerns: Lavaca River: <ul style="list-style-type: none"> 1602B_01: Total Phosphorus Tres Palacios Creek: <ul style="list-style-type: none"> 1501_01: Chlorophyll-a, Nitrate 1502_01: Chlorophyll-a 1502_03: Depressed dissolved oxygen in water Carancahua Bay: <ul style="list-style-type: none"> 2456_02: Chlorophyll-a, Total Phosphorus 2456A_01: Chlorophyll-a 	<u>Category</u> Lavaca River: <ul style="list-style-type: none"> 1602_02 and _03: 5a 1602B_01: 5a 1602C_01 and 02: 5b Tres Palacios Creek: <ul style="list-style-type: none"> 1501_01: 4a (bacteria), 5b (dissolved oxygen) Carancahua Bay: <ul style="list-style-type: none"> 2456_02: 5a 2456A_01: 5c
Project Location (Statewide or Watershed and County)	Carancahua Bay, Lavaca River, and Tres Palacios watersheds, including Lavaca County, Jackson County, Wharton County, Matagorda County, Gonzales County, Fayette County, and Victoria County		

Key Project Activities	Hire Staff (); Surface Water Quality Monitoring (X); Technical Assistance (); Education (); Implementation (X); BMP Effectiveness Monitoring (); Demonstration (); Planning (); Modeling (); Bacterial Source Tracking (); Other ()					
2017 Texas NPS Management Program Reference	<ul style="list-style-type: none"> Component 1: LTG Objectives 1, 2, 3 STG 1 Obj. B, E; STG 2 Obj. D Component 2 Component 3 Component 6 Milestones: Priority Watershed Milestones (Ch. 2): Water Quality Monitoring 					
Project Costs	Federal	\$200,050	Non-Federal	\$133,367	Total	\$333,417
Project Management	Texas A&M AgriLife Research, Texas Water Resources Institute					
Project Period	November 16, 2022 – October 31, 2025					

Part I – Applicant Information

Applicant							
Project Lead	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	979-314-2613			Fax Number	979-845-8554		

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 (TWRI)	Provide project oversight and reporting, conduct water sample collection, develop a QAPP, and final report development.
Lavaca-Navidad River Authority (LNRA)	LNRA will expand ongoing water quality monitoring efforts at existing CRP monitoring sites and upload data to SWQMIS.

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 <i>Texas Coastal NPS Pollution Control Program</i> ; or (f) the <i>Texas Groundwater Protection Strategy</i> ?				Yes X No
If yes, identify the document.		Lavaca River & Rocky Creek Watershed Protection Plan, Tres Palacios Creek Watershed Protection Plan, Carancahua Bay Watershed Protection Plan		
If yes, identify the agency/group that developed and/or approved the document.		TCEQ and TWRI	Year Developed	Lavaca River: 2018; Tres Palacios: 2018; Carancahua Bay: 2019

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2020 IR	Size (Acres)
Lavaca River Watershed	121001010402, 121001010305, 121001010304, 121001010401, 121001010206, 121001010205, 121001010201, 121001010108, 121001010104, 121001010103, 121001010102, 121001010101, 121001010302, 121001010303, 121001010301, 121001010203, 121001010204, 121001010106, 121001010202, 121001010107, 121001010105, 121001010403, 121001010404	1602, 1602B, 1602C	1602_02 and _03: 5a 1602B_01: 5a 1602C_01 and 02: 5b	581,760
Tres Palacios Creek Watershed	121004010300, 121004010301, 121004010302, 121004010303, 121004010306, 121004010310	1501, 1502	1501_01: 4a (bacteria), 5b (dissolved oxygen)	234,880

Carancahua Bay Watershed	121004010201, 121004010202, 121004010203, 121004010207, 121004010209	2456, 2456A	2456_02: 5a 2456A_01: 5c	205,440
--------------------------	--	-------------	--	---------

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: *2020 Texas Integrated Report*, Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.

IMPAIRMENTS (2020 Texas Water Quality Inventory and 303(d) List)

Segment 1501: Tres Palacios Creek Tidal: From the confluence with Tres Palacios Bay in Matagorda County to a point 1.6 km (1.0 mi) upstream of the confluence of Wilson Creek in Matagorda County

Segment 1602: Lavaca River Above Tidal: From a point 8.6 km (5.3 mi) downstream of US 59 in Jackson County to the confluence of Campbell Branch west of Hallettsville in Lavaca County

Segment 1602B: Rocky Creek: Perennial stream from the confluence with the Lavaca River upstream to 2.9 km upstream of County Rd 364 north west of the City of Shiner

Segment 1602C: Lavaca River Above Campbell Branch: From the confluence of Campbell Branch in Hallettsville to approximately 3.4 mi upstream of SH 95 in Lavaca Co.

Segment 2456: Carancahua Bay: Carancahua Bay

Segment 2456A: West Carancahua Creek Tidal: From the Carancahua Bay confluence to Jackson CR 440, 10.1 km (6.3 mi) upstream of FM 616 in Jackson County

<u>Listed</u>	<u>Impairment</u>	<u>Category</u>	<u>Year</u>
1501_01: From the confluence with Willow Dam Creek at Tres Palacios Bay/Turtle Bay	bacteria	4a	2006
1501_01: From the confluence with Willow Dam Creek at Tres Palacios Bay/Turtle Bay	dissolved oxygen	5b	1999
1602_02: Confluence of Beard Branch upstream of Campbell Branch	bacteria	5a	2008
1602_03: Lower portion of segment from confluence with NHD RC 12100101002463	bacteria	5a	2008
1602B_01: Confluence of Lavaca River upstream to confluence of Ponton Creek	bacteria	5a	2014
1602C_01: Confluence of Campbell Branch upstream to confluence of West Pong Lavaca River	bacteria	5b	2004
1602C_02: Confluence of West Pong Lavaca River to head-Waters upstream of TX Hwy 95	bacteria	5b	2004
2456_02: Upper half of bay	bacteria	5a	2006
2456A_01: Carancahua Bay confluence to Jackson CR 440	bacteria	5c	2006

CONCERNS (2020 Texas Water Quality Inventory)

1501_01: Chlorophyll-a in water (CS) and Nitrate in water (CS)

1502_01: Chlorophyll-a in water (CS)

1502_03: Depressed Dissolved Oxygen in water (CS)

1602B_01: Total Phosphorus in water (CS)

2456_02: Total Phosphorus in water (CS), and Chlorophyll-a in water (CS)

2456A_01: Chlorophyll-a (CS)

SOURCES (2020 Texas Water Quality Inventory)

1501_01: Sources- NPS- Agriculture, NPS- Crop Production (irrigated)
1502_01: Sources- NPS- Non-Point Sources, PS- Unknown Point Source; UNK- Source Unknown
1502_03: Sources- UNK- Source Unknown
1602_02: Sources- UNK- Source Unknown
1602_03: Sources- NK- Source Unknown
1602B_01: Sources- UNK- Source Unknown
1602C_01: Sources- PS- Drought-Related Impacts
1602C_02: Sources- PS- Drought-Related Impact
2456_02: Sources- NPS- Non-Point Source, NPS- Rural (Residential Areas), NPS- Upstream Source, NPS- Wildlife Other than Waterfowl, UNK- Source Unknown
2456A_01: Sources- UNK- Source Unknown, NPS- Non-Point Source

Tres Palacios Creek Watershed Protection Plan, Texas Water Resources Institute

Pollution Sources: Cattle, household pets, deer, on-site sewage facilities (OSSFs), feral hogs, horses, wastewater treatment facilities (WWTFs), and urban runoff

Lavaca River Watershed Protection Plan, Texas Water Resources Institute

Pollution Sources: Domestic livestock, wildlife and feral hogs, domestic pets, on-site sewage facilities, wastewater treatment facilities (WWTFs) discharge, stormwater, and urban runoff.

Carancahua Bay Watershed Protection Plan, Texas Water Resources Institute

Point Source Pollution: Permitted wastewater and stormwater discharges.

Nonpoint Source Pollution: Domestic livestock, wildlife, domestic pets and on-site sewage facilities (OSSFs)

Project Narrative

Problem/Need Statement

The Matagorda Basin is an important resource to the Texas economy. The basin provides ecotourism opportunities, a vast amount of row crop production (Jackson, Wharton, and Matagorda counties), contains one of the highest populated cow-calf producing counties in the United States (Lavaca County), and is home to 95 threatened and endangered species according to the Texas Parks and Wildlife Department (<https://tpwd.texas.gov/gis/rtest/>). Additionally, this basin faces competing demands for its water supplies between agricultural and urban needs, falling between both Houston and Corpus Christi, which are rapidly growing urban areas. With all these challenges, it is extremely important to keep both residents and visitors engaged in protecting water resources.

In 2014, TWRI began working with the TCEQ, taking a basin-wide approach to addressing water quality in the Matagorda Basin. Beginning with characterizing the watershed, TWRI worked to identify data gaps in the watersheds, identify potential causes and sources of bacteria impairments, and host public education events to raise water quality awareness. As a result of this effort, TWRI successfully developed watershed protection plans across the basin, which includes the Tres Palacios Creek WPP completed in 2018, the Lavaca River WPP completed in 2018, and the Carancahua Bay WPP completed in 2019. Additionally, the Arenosa Creek and Garcitas Creek WPP has been developed and submitted but has not yet been accepted by the EPA.

Currently, there is one WPP Implementation project underway in the Lavaca River Watershed, and three in the Tres Palacios Watershed, all managed by TWRI, that include water quality monitoring. In October 2021, TWRI will begin a new WPP implementation, education, and outreach project under the TSSWCB that will include the Lavaca River, Tres Palacios Creek, and Carancahua Bay watersheds. This proposed project will work in coordination with key stakeholders to continue conducting routine water quality monitoring in the basin to track progress made from the ongoing watershed-based planning efforts.

Project Narrative

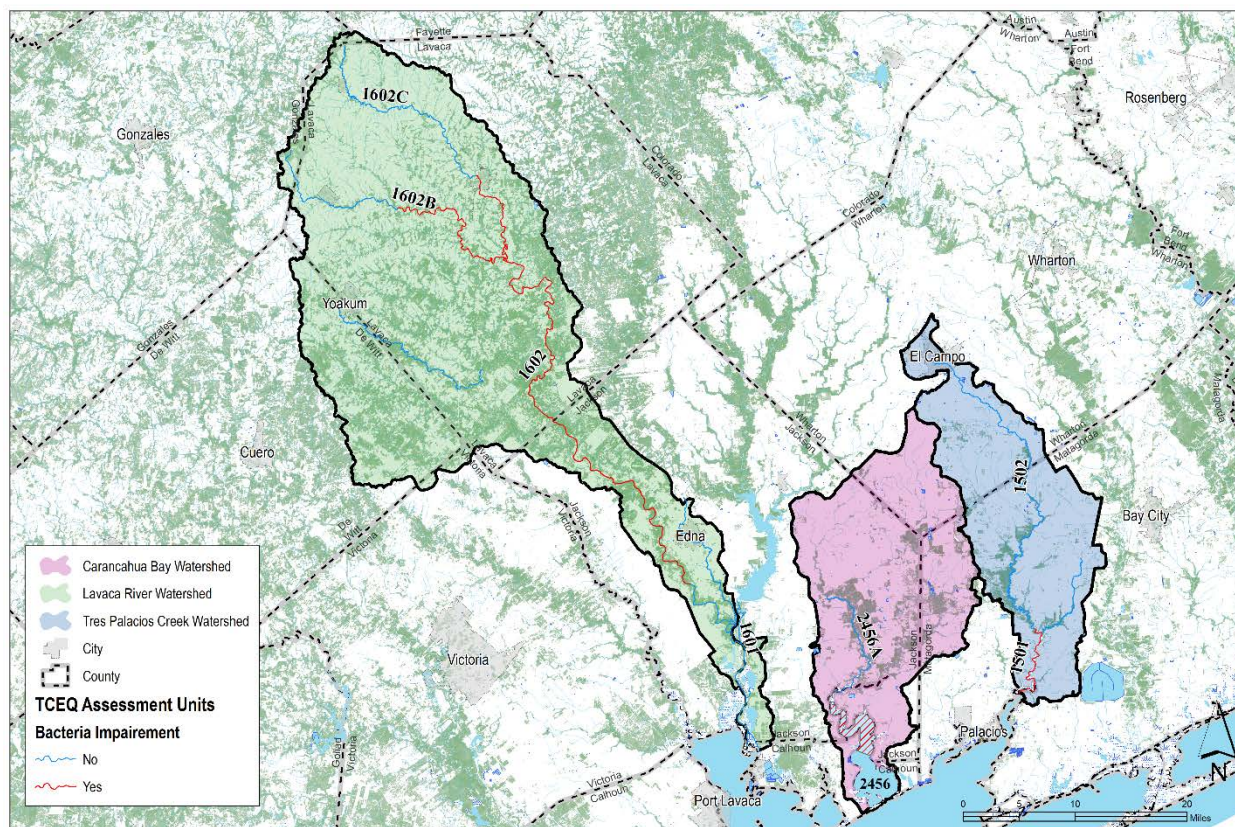
General Project Description (Include Project Location Map)

Supplemental water quality monitoring will be conducted to fill in the months between existing Clean Rivers Program (CRP) quarterly monitoring. Bacteria and nutrient data will be collected at seven existing CRP sites between the three watersheds:

- Carancahua Bay Watershed Station ID: 21694
- Lavaca River Watershed Station IDs: 12527, 12525, 12524, 18190
- Tres Palacios Creek Watershed Station IDs: 12517, 12515

The three watersheds included in this project consist of both tidal and above-tidal segments so both *E. coli* and *Enterococcus* will be the bacteria parameters analyzed. Field parameters to be collected include pH, temperature, conductivity, and dissolved oxygen. Conventional parameters to be collected include total suspended solids, turbidity, nitrate-nitrogen, ammonia nitrogen, total kjeldahl nitrogen, and total phosphorus.

Water samples collected by TWRI and LNRA will be used to fill in the water quality data gaps at these sites during the months that CRP does not conduct monitoring (i.e., if CRP samples in March, June, September, and December, then TWRI and LNRA will conduct monitoring during the other eight months), providing data continuity for a full 24 months (18 TWRI/LNRA events, six CRP events). This additional monitoring will supplement existing data, by having a more robust temporal dataset spanning a greater range of climatic and seasonal variations; thus, filling in data gaps and improving our understanding of the status surface water quality of these watersheds during the ongoing implementation of the WPPs.



Tasks, Objectives and Schedules						
Task 1	Project Administration					
Costs	Federal	\$19,005	Non-Federal	\$12,670	Total	\$31,675
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 1 st of January, April, July and October. QPRs shall be distributed to all Project Partners.					
	Start Date	Month 1		Completion Date	Month 36	
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 36	
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 36	
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 34		Completion Date	Month 36	
Deliverables	<ul style="list-style-type: none"> • 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	Federal	\$6,001	Non-Federal	\$4,001	Total	\$10,002
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 #3 consistent with the most recent versions of <i>EPA Requirements for Quality Assurance Project Plans (QA/R-5)</i> and the <i>TSSWCB Environmental Data Quality Management Plan</i> . All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the <i>TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)</i> and <i>Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416)</i> . [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, <i>Environmental Testing Laboratory Accreditation and Certification</i> , 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 3	
Subtask 2.2	TWRI will implement the approved QAPP. TWRI will submit revisions and necessary amendments to the QAPP as needed.					
	Start Date	Month 1		Completion Date	Month 36	
Deliverables	<ul style="list-style-type: none"> • QAPP approved by TSSWCB and EPA 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 3 					

Tasks, Objectives and Schedules						
Task 3	Routine Surface Water Quality Monitoring					
Costs	Federal	\$175,044	Non-Federal	\$116,696	Total	\$291,740
Objective	To provide water quality data for the assessment of the effectiveness of implementing the Lavaca River, Carancahua Bay, and Tres Palacios WPPs and TMDL I-Plans by enhancing current routine ambient monitoring efforts.					
Subtask 3.1	TWRI and LNRA will conduct monthly near-surface grab samples at seven stations. Total number of samples to be collected at each site is 18. Currently, routine ambient monitoring is conducted quarterly at these stations through the Clean Rivers Program. Sampling through this subtask will complement existing routing ambient monitoring regimes.					
	Start Date	Month 3	Completion Date	Month 27		
Subtask 3.2	TWRI and LNRA will maintain a master database of collected data. Data will be submitted to the TSSWCB project manager on a quarterly basis. LNRA will upload data into the SWQMIS Test Environment and submit successful data set(s) to the TSSWCB project manager.					
	Start Date	Month 6	Completion Date	Month 30		
Deliverables	<ul style="list-style-type: none"> Data of known and acceptable quality produced, formatted and included in SWQMIS Water quality analyses completed and described for inclusion in the project final report 					

Project Goals (Expand from Summary Page)
The primary goal of the proposed project is to conduct supplemental water quality monitoring to measure changes in water quality resulting from WPP implementation. Currently, routine ambient monitoring is conducted at these stations on a quarterly basis through the Clean Rivers Program. Monitoring through this project will complement existing routine ambient water quality monitoring regimes. Data will be used to assess changes in water quality over time as a result of implementation.

Measures of Success (Expand from Summary Page)
The project will be considered successful upon the completion of 18 additional water quality monitoring events that supplement quarterly CRP monitoring, providing 24 months of data continuity that will improve understanding of water quality trends in the Matagorda Basin.

2017 Texas NPS Management Program Reference (Expand from Summary Page)
Components, Goals, and Objectives
<p>Component 1 - Explicit short- and long-term goals, objectives and strategies that protect surface ... water.</p> <p>Long-Term Goal – Protect and restore water quality affected by NPS pollution through assessment and education.</p> <p>Objectives</p> <ul style="list-style-type: none"> • 1 – Focus NPS abatement efforts, implementation strategies and 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... implementation and education. • 3 - Support the implementation of state, regional, and local programs to reduce NPS pollution, such as the implementation of strategies defined in WPPs and other water planning efforts in the state <p>Short-term Goals</p> <p>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...</p> <ul style="list-style-type: none"> • Objective B – Ensure that monitoring procedures meet quality assurance requirements and are in compliance with EPA-approved ... TSSWCB Quality Management Plans • Objective E – Conduct monitoring to determine effectiveness of ...WPPs and BMP implementation <p>Goal Two – Implementation: Implement ... WPPs... to reduce NPS pollution by targeting implementation activities to the areas identified as impacted ... by NPS pollution.</p> <ul style="list-style-type: none"> • Objective D – Implement...WPPs...to restore and maintain water quality in water bodies identified as impacted by NPS pollution
<p>Component 2 – Working partnerships and linkages with appropriate state, ... regional, and local entities, private sector groups and Federal agencies.</p>
<p>Component 3 –Balanced approach that emphasizes both statewide NPS programs and on the ground management of individual watersheds.</p>
<p>Component 6 – Implement all NPS program components required by CWA §319(b) and establish strategic approaches and adaptive management to achieve and maintain water quality standards as expeditiously as practicable.</p>

Estimated Load Reductions Expected (Only applicable to Implementation Project Type)
<p>Loading reductions are not anticipated to result from this project. Data collection will allow for future loading reduction needs to be identified should resulting water quality verify the current impaired water quality status.</p>

EPA State Categorical Program Grants – Workplan Essential Elements FY 2022-2026 EPA Strategic Plan Reference
<p>Strategic Plan Goal – 5.0 Ensure Clean and Safe Water for All Communities</p>
<p>Strategic Plan Objective – 5.2 - Protect and Restore Waterbodies and Watersheds</p>
<p>This workplan supports Goal 5 (Ensure Clean and Safe Water for All Communities) and Objective 5.2 (Protect and Restore Waterbodies and Watersheds) by funding the Texas State and Soil Water Conservation Board's NPS Program for state and local planning, education, assessments, watershed restoration and protection, best management practices, and related water quality activities.</p>

Part III – Financial Information

Budget Summary			
Federal	\$ 200,050	% of total project	60%
Non-Federal	\$ 133,367	% of total project	40%
Total	\$ 333,417	Total	100%
Category	Federal	Non-Federal	Total
Personnel	\$ 100,106	\$ 28,614	\$ 128,720
Fringe Benefits	\$ 37,980	\$ 8,484	\$ 46,464
Travel	\$ 3,831	\$ 0	\$ 3,831
Equipment	\$ 0	\$ 0	\$ 0
Supplies	\$ 150	\$ 0	\$ 150
Contractual	\$ 18,333	\$ 12,222	\$ 30,555
Construction	\$ 0	\$ 0	\$ 0
Other	\$ 13,556	\$ 0	\$ 13,556
Total Direct Costs	\$ 173,956	\$ 49,320	\$ 223,276
Indirect Costs (≤ 15%)	\$ 26,094	\$ 19,356	\$ 45,450
Unrecovered IDC	\$ 0	\$ 64,691	\$ 64,691
Total Project Costs	\$ 200,050	\$ 133,367	\$ 333,417

Budget Justification (Federal) – Texas Water Resources Institute		
Category	Total Amount	Justification
Personnel	\$ 100,106	<p>TWRI Associate Director: \$101,261 annually, 1.44 mo. (4% per year) – \$12,895 TBD Program Manager: \$71,467 annually, 0.72 mo. (2.03% per year) – \$4,484 TBD Quality Assurance Officer: \$75,000 annually, 1.44 mo. (4% per year) – \$9,273 TBD Research Associate: \$52,000 annually, 9 mo. (25% per year) - \$40,182 TBD Research Assistant: \$54,000 annually, 7.18 mo. (19.95% per year) – \$33,272</p> <p>*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.</p>
Fringe Benefits	\$ 37,980	<p>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.</p> <p>*(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.</p>
Travel	\$ 3,831	Monitoring mileage @ state rate per mile for state vehicles
Equipment	\$ 0	N/A
Supplies	\$ 150	General project field notes supplies, including, but not limited to, paper, pens, clipboard, etc.
Contractual*	\$ 18,333	Subaward: Lavaca-Navidad River Authority
Construction	\$ 0	N/A
Other	\$ 13,556	<p>Monitoring Equipment Rental: \$2,060 Pace Analytical Lab – Bacteria Analysis: \$2,916 AquaTech Lab – Nutrient Analysis: \$7,500 Database Fee: \$1,080</p> <p>* Lab analysis costs are estimated, actual costs may vary from the estimated amount.</p>
Indirect	\$ 26,094	<p>Per the RFP requirements, indirect costs are limited at 15% of total direct costs. \$173,956 Total Direct Costs * 15% = \$26,094</p>

Budget Justification (Non-Federal) – Texas Water Resources Institute		
Category	Total Amount	Justification
Personnel	\$ 28,614	Associate Director: \$101,261 annually, 3.20 mo. (8.88% per year) – \$28,614 *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	\$ 8,484	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	\$ 0	N/A
Equipment	\$ 0	N/A
Supplies	\$ 0	N/A
Contractual*	\$ 12,222	Subaward: Lavaca-Navidad River Authority
Construction	\$ 0	N/A
Other	\$ 0	N/A
Indirect	\$ 84,047	Texas A&M AgriLife Research’s federally negotiated indirect cost (IDC) rate is 51.5% of modified total direct costs (MTDC) for year 1 and 52.5% for years 2 and 3. MTDC includes personnel, fringe benefits, travel, supplies, other and up to \$25,000 of each subcontract; it excludes tuition, facility rental and capital equipment over \$5,000. <u>IDC on non-federal funds:</u> MTDC * 51.5% year 1 - \$12,024 *51.5% = \$6,192 MTDC * 52.5% years 2 and 3 - \$25,074 *52.5% = \$13,164 Total IDC on non-federal funds: \$19,356 <u>Unrecovered IDC on federal funds: MTDC – 15% TDC</u> - IDC on MTDC: \$54,3006 MTDC * 51.5% = \$27,965 - IDC on MTDC: \$119,656 MTDC * 52.5% = \$62,820 - IDC on TDC: \$173,956 TDC * 15% = \$26,094 Total Unrecovered IDC: \$90,785 - \$26,094 = \$64,691 IDC on non-fed + Unrecovered IDC: \$19,356 + 64,691 = \$84,047

Budget Justification (Federal) – Subaward: Lavaca-Navidad River Authority		
Category	Total Amount	Justification
Personnel	\$ 0	N/A
Fringe Benefits	\$ 0	N/A
Travel	\$ 2,255	Travel to Seguin (GBRA Lab): \$125.28 * 18
Equipment	\$ 0	N/A
Supplies	\$ 0	N/A
Contractual*	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 16,078	Guadalupe-Blanco River Authority Lab Analysis: \$223.30 per site, 18 events * Lab analysis costs are estimated, actual costs may vary from the estimated amount.
Indirect	\$ 0	N/A

Budget Justification (Non-Federal) – Subaward: Lavaca-Navidad River Authority		
Category	Total Amount	Justification
Personnel	\$ 12,222	Sample Collection – 6.0 Hrs x \$35.00 = \$210.00 6.0 Hrs x \$53.84 = <u>\$323.04</u> = \$533.04 x 18 events = \$9,595 Data Management – 2 Hr @ \$35.00 x 18 events = \$1,260 Quality Assurance – 1 Hr @ \$53.84 x 18 events = \$969 QAPP Development & Review – 7.39 Hr @ \$53.84 = \$398 = \$2,627
Fringe Benefits	\$ 0	N/A
Travel	\$ 0	N/A
Equipment	\$ 0	N/A
Supplies	\$ 0	N/A
Contractual*	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 0	N/A
Indirect	\$ 0	N/A