



**Texas State Soil and Water Conservation Board
 State Nonpoint Source Grant Program
 FY 2017 Workplan 17-57**

| SUMMARY PAGE | | | |
|--|---|---|-----------------------------|
| Title of Project | Surface Water Quality Monitoring in the Geronimo and Alligator Creeks Watershed to Support the Implementation of the Geronimo and Alligator Creeks Watershed Protection Plan | | |
| Project Goals | <ul style="list-style-type: none"> • Generate data of known and acceptable quality for surface and ground water quality monitoring of main stem and tributary stations. • Collect water quality data for use in assessing water quality improvement and progress in achieving restoration. • Communicate water quality conditions to the public and the Partnership in order to support adaptive management and to expand public knowledge on Geronimo and Alligator Creeks water quality data. • Coordinate and conduct water resources and related environmental outreach/education efforts across the watershed. | | |
| Project Tasks | (1) Project Administration; (2) Quality Assurance; (3) Water Quality Data Collection and Analysis | | |
| Measures of Success | <ul style="list-style-type: none"> • Data of known and acceptable quality are generated for surface water quality monitoring of main stem and tributary stations and groundwater monitoring of shallow wells from the Leona Aquifer. • Water quality data is communicated to the public and the Partnership. • Increased watershed stewardship among Geronimo Creek watershed stakeholders. • Provide technical assistance to the Geronimo Creek Partnership. • Maintain project webpage to communicate water quality data, provide information to stakeholders, and provide access to education and outreach. | | |
| Project Type | Implementation (); Education (X); Planning (); Assessment (X); Groundwater (X) | | |
| Status of Waterbody on 2014 Texas Integrated Report | <u>Segment ID</u> 1804A | <u>Parameter of Impairment or Concern</u> Bacteria Nitrate-Nitrogen | <u>Category</u> 5c CN |
| Project Location (Statewide or Watershed and County) | Geronimo Creek Watershed in Guadalupe and Comal Counties | | |
| Key Project Activities | Hire Staff (); Surface Water Quality Monitoring (X); Technical Assistance (); Education (); Implementation (X); BMP Effectiveness Monitoring (X); Demonstration (); Planning (); Modeling (); Bacterial Source Tracking (); Other () | | |
| 2012 Texas NPS Management Program Reference | <ul style="list-style-type: none"> • Component 1 LTGs 1, 3, 7 • Component 1 STGs 1B, 1E, 3F • Component 3 | | |
| Project Costs | \$ 60,719 | | |
| Project Management | • Guadalupe-Blanco River Authority | | |
| Project Period | December 1, 2016 – October 31, 2017 | | |

Part I – Applicant Information

| Applicant | | | | | | | |
|------------------|------------------------------------|--------|-----------|------------|----------------|----------|-------|
| Project Lead | Michael Urrutia | | | | | | |
| Title | Director of Water Quality Services | | | | | | |
| Organization | Guadalupe Blanco River Authority | | | | | | |
| E-mail Address | murrutia@gbra.org | | | | | | |
| Street Address | 933 E. Court St. | | | | | | |
| City | Seguin | County | Guadalupe | State | Texas | Zip Code | 78155 |
| Telephone Number | (830) 379-5822 | | | Fax Number | (830) 272-2757 | | |

| 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. |
| Guadalupe Blanco River Authority | Provide project administration, water quality monitoring, data and analysis review, outreach and education, technical assistance |
| Geronimo and Alligator Watershed Partnership | Provide input on monitoring strategies |

Part II – Project Information

| Project Type | | | | | | | | | |
|--|-------------------------------------|---|-------------------------------------|----------------|--|------|-------------------------------------|----|--|
| Surface Water | <input checked="" type="checkbox"/> | Groundwater | <input checked="" type="checkbox"/> | | | | | | |
| 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 | <input checked="" type="checkbox"/> | No | |
| If yes, identify the document. | | Geronimo and Alligator Creeks Watershed Protection Plan | | | | | | | |
| If yes, identify the agency/group that developed and/or approved the document. | | Geronimo and Alligator Creek Watershed Partnership facilitated by AgriLife Extension, GBRA and TSSWCB | | Year Developed | | 2012 | | | |

| Watershed Information | | | | |
|---|---------------------------------|------------|---------------------|--------------|
| Watershed or Aquifer Name(s) | Hydrologic Unit Code (12 Digit) | Segment ID | Category on 2012 IR | Size (Acres) |
| Geronimo Creek (including its tributary, Alligator Creek) | 121002020110, 121002020111 | 1804A | 5c | 44,152 |

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.

2014 Texas Integrated Report - Geronimo Creek was listed as impaired on the 2004 and 2006 303(d) Lists due to bacterial contamination. The data from that period of record showed that the geometric mean for *E. coli* bacteria exceeded the stream standard. The geometric mean of Geronimo Creek was 162 cfu/ 100 mL. The geometric mean of the *E. coli* data collected on Geronimo Creek between December 1, 2003 and November 30, 2010 (150 samples) and assessed in 2012 by TCEQ, was 199 organisms per 100 mL, higher than the reported geometric mean of 161 organisms per 100 mL (81 samples) in the 2010 assessment. The geometric mean of the *E. coli* data collected on Geronimo Creek between December 1, 2005-November 30, 2012 was 187 organisms per 100ml (157 samples) in the 2014 assessment.

Clean Rivers Program 2013 Basin Summary Report - The 2013 Clean Rivers Program Basin Summary Report for the Guadalupe River Basin states that the analysis of the nitrate-nitrogen concentrations measured at the Haberle Road monitoring location over the past 10 years is showing a downward trend. The Basin Summary report supports the likelihood that the source of the nitrates is groundwater by noting that the low nitrate values occur during high flow events that dilute the influence of groundwater with high nitrates. The statistical analyses on the bacteriological data collected from 2003 through 2012 found that the geometric mean for *E. coli* is 154 organisms per 100 mL, lower but still greater than the contact recreation standard of 126 organisms per 100 mL.

Clean Rivers Program Basin Highlights Reports - The Clean Rivers Program Basin Highlights Reports for the Guadalupe River Basin since 2004 comment on the elevated nitrate-nitrogen concentrations, suggesting that the source appears to be groundwater seepage. The private wells that have been monitored in the area are shallow and have concentrations in excess of 20 mg/L.

2012 Nonpoint Source Management Program - NPS contamination is widespread in many Texas aquifers. The most widespread contaminant is nitrate, with a variety of potential sources. Potential nitrate sources may include leaking septic systems, storm water runoff, over application of fertilizer on cropland, and naturally occurring nitrate derived from the aquifer matrix. Nitrate is readily soluble and mobile in water, and is considered one of the major human health concerns in drinking water. Coincidentally, nitrate concentration may be an indicator of NPS pollution in groundwater, because it can move readily through the soil, entering aquifers by means of percolation. Nitrate in surface water indicates the potential for groundwater contamination. Other ambient groundwater quality constituents of concern are likely naturally occurring, and not necessarily good indicators of NPS influence on the aquifers.

Project Narrative

Problem/Need Statement

In 2007, the TSSWCB Regional Watershed Coordination Steering Committee, using established criteria, ranked Geronimo Creek in the top 3 watersheds for selection of WPP development. The TSSWCB project 08-06 entitled, *Development of a Watershed Protection Plan for Geronimo Creek*, was begun in June 2008. The project included water quality monitoring, water quality modeling and WPP development. The development of the WPP for Geronimo and Alligator Creeks has been a stakeholder driven process lead by Extension with support from the GBRA. The Geronimo and Alligator Creeks Watershed Partnership (the Partnership) Steering Committee includes local officials, land and business owners and citizens and is supported by state and federal agency partners. With technical assistance from project staff, the Steering Committee has identified issues that are of particular importance to the surrounding communities, and has contributed information on land uses and activities that has been helpful in identifying the sources of nutrient and bacterial impairments, and in guiding the development of the WPP.

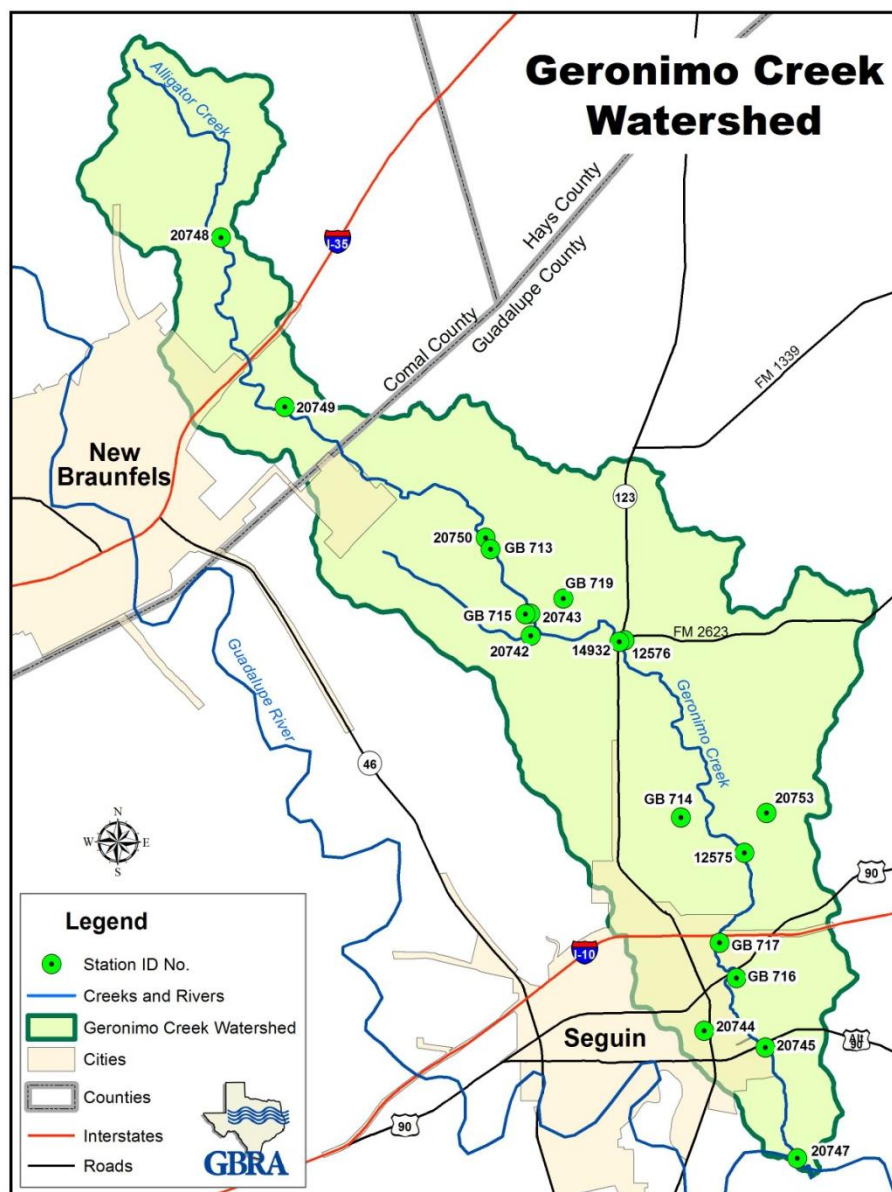
Historical data identified the impairment for bacteria and a concern for nutrients. The water quality monitoring program attempted to fill gaps in the historical data but was severely hampered by the drought of 2008-09. Data collection in the project further verified that periodic elevations of *E. coli* levels continue to exist. Routine ambient water quality data is collected at one site (12576) by GBRA through the Clean Rivers Program (CRP). Through projects 08-06, 11-06 and now 14-09, GBRA conducted water quality monitoring that included additional routine ambient and targeted stream sites on Geronimo and Alligator Creeks and three tributaries, and quarterly monitoring of springs, and wells.

The Geronimo Creek WPP has been completed and accepted by EPA. This monitoring project is warranted to provide critical water quality data that will be used to judge the effectiveness of WPP implementation efforts and serve as a tool to quantitatively measure water quality restoration. This effort will continue stakeholder engagement by maintaining the project website, participating in the watershed partnership meetings to provide technical assistance and to share water quality data, and to provide outreach and education to stakeholders including local schools, municipal officials, and the newly forming Guadalupe County Master Naturalists.

Project Narrative

General Project Description (Include Project Location Map)

The sampling program will be continued in this project by retaining seven routine monthly sites and twelve targeted sites. The monitoring program will collect additional data, look for trends and fill data gaps identified in projects 08-06, 11-06 & 14-09. GBRA will continue to monitor the routine ambient monitoring location monthly under the CRP. One site will be located at Geronimo Creek at IH10 in order to collect routine and targeted monitoring downstream of the Oak Village North Subdivision. The City of Seguin has expanded its sanitary sewer service to the subdivision, taking the homes off of failing septic systems. The city is also completing an associated CWA Section 319 project that is funding the decommissioning of the septic systems, expediting the hook-up of individual homes onto the city's collection system.



GBRA will participate in the Geronimo Creek Watershed Partnership and assist stakeholder groups (cities, counties, agricultural groups, local businesses, HOAs, etc.) and partner agencies (NRCS, SWCDs, TCEQ, etc.) in preparation of full implementation as outlined in the WPP.

GBRA will facilitate and coordinate education and outreach activities in the watershed to promote public participation and implementation of the WPP. This will include active use of local media outlets to communicate project planning efforts and activities, contributions to the project website, development and/or dissemination of educational resources, coordination of local meetings and educational events and coordination of an annual community stream clean up.

A comprehensive watershed approach was used to focus on the most significant potential sources of agricultural NPS pollution contributing to the current impairments, while at the same time looking ahead at potential future sources of pollution from urban and suburban growth. The outcomes of the 08-06 project included data in the form of load allocations and watershed models developed in partnerships with local stakeholders and have benefited the local governmental entities as they formulate master plans and storm water management strategies. Recommended

best management practices that were identified by the steering committee, work groups and partner agencies and written into the watershed protection plan are in the process of being installed or being considered for funding. An

important benefit or outcome of this project will be the development of water quality data prior to, during and after the installation of implementation strategies that get ahead of growth so that it can be directed in an environmentally-safe and community-accepted direction

In 2010, a continuous water quality monitoring station was deployed in Geronimo Creek at SH123 (WQS No. 14932), under a TCEQ CWA Section 319 project, “GBRA – Continuous Water Quality Monitoring”. The project collected dissolved oxygen, specific conductance, temperature, turbidity and pH every 15 minutes. As a part of that project, an educational kiosk was linked to the monitoring station to provide access to the real-time network and to environmental and nonpoint source pollution educational modules. The project was concluded in August 2012. GBRA will continue to maintain a real-time water quality monitoring station on the Geronimo Creek at SH123 (Station no. 14932) that collects field parameters and turbidity every 15 minutes. The data from this station, as a part of the TCEQ Continuous Water Quality Monitoring Network (CWQMN), is available to the public through TCEQ’s CWQMN website and through links available on the GBRA educational kiosk located in the watershed.

List of monitoring locations and frequency of sample by type:

| Segment | TCEQ Station ID | Site Description | Monitor | Monitor Type | Bacteria | Conventional | Flow | Field |
|---------|-----------------|--|---------|--------------|----------|--------------|------|-------|
| 1804A | 20742 | Geronimo Creek at Huber Road, Upstream of the Alligator Creek Confluence | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 20742 | Geronimo Creek at Huber Road, Upstream of the Alligator Creek Confluence | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 20743 | Alligator Creek at Huber Road (Headwater) | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 20743 | Alligator Creek at Huber Road (Headwater) | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 14932 | Geronimo Creek at SH 123 | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 14932 | Geronimo Creek at SH 123 | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 12576 | Geronimo Creek at Haberle Road | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 12576 | Geronimo Creek at Haberle Road | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 20744 | Bear Creek at East Walnut Street | GB | BF | 7 | 7 | 7 | 7 |
| 1804A | 20745 | Geronimo Creek at HWY 90A | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 20745 | Geronimo Creek at HWY 90A | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 21260 | Geronimo Creek at IH 10 near Seguin | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 21260 | Geronimo Creek at IH 10 near Seguin | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 21261 | Geronimo Creek at Hwy 90 (Seguin Outdoor Learning Center) | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 21261 | Geronimo Creek at Hwy 90 (Seguin Outdoor Learning Center) | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 20747 | Geronimo Creek at Hollub Lane, Downstream of the City of Seguin WWTF | GB | RT | 10 | 10 | 10 | 10 |
| 1804A | 20747 | Geronimo Creek at Hollub Lane, Downstream of the City of Seguin WWTF | GB | BF | 3 | 3 | 3 | 3 |
| 1804A | 20748 | Alligator Creek at FM 1102 | GB | BF | 7 | 7 | 7 | 7 |

| Segment | TCEQ Station ID | Site Description | Monitor | Monitor Type | Bacteria | Conventional | Flow | Field |
|---------|-----------------|--|---------|--------------|----------|--------------|------|-------|
| 1804A | 20749 | Alligator Creek at FM 1101 | GB | BF | 7 | 7 | 7 | 7 |
| 1804A | 12575 | Geronimo Creek at FM 20 | GB | BF | 7 | 7 | 7 | 7 |
| 1804A | GB713 | Water Well at Alligator Creek headwaters | GB | BS | 3 | 3 | 3 | 3 |
| 1804A | GB714 | Water Well near Geronimo Creek at Laubach Road | GB | BS | 3 | 3 | 3 | 3 |
| 1804A | 21262 | Spring at Timmermann Property | GB | BS | 3 | 3 | 3 | 3 |

| Tasks, Objectives and Schedules | | | | |
|---------------------------------|---|---------|-----------------|----------|
| Task 1 | Project Administration | | | |
| Costs | \$2,778 | | | |
| 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 | The GBRA 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 15 th of March, June, September and December. QPRs shall be distributed to all Project Partners. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 1.2 | The GBRA 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 11 |
| Subtask 1.3 | The GBRA 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. The GBRA will develop lists of action items needed following each project coordination meeting and distribute to project personnel. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 1.4 | The GBRA will develop a Final Report that summarizes activities completed, 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 11 |
| Subtask 1.5 | The GBRA will continue to host and maintain a website (http://geronimocreek.org/) to serve as a public clearinghouse for all project- and watershed-related information. All presentations, documents and results will be posted to this website. The website will serve as a means to disseminate information to stakeholders and the general public. GBRA will make presentations on the Geronimo Creek Partnership and WPP and general NPS pollution information to local schools and community organizations. Coordinate in the annual stream clean-up. GBRA will maintain the educational kiosk located in the watershed in order to provide outreach to stakeholders and to provide access to continuous water quality data generated at the real-time monitoring station located at Station No. 14932. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Deliverables | <ul style="list-style-type: none"> • QPRs in electronic format • Reimbursement Forms and necessary documentation in hard copy format • Project website maintenance • Annual stream clean up • Final Report in electronic and hard copy formats | | | |

| Tasks, Objectives and Schedules | | | |
|---------------------------------|--|---------|-----------------------------|
| Task 2 | Quality Assurance | | |
| Costs | \$428 | | |
| 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 | The GBRA 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 11 |
| Subtask 2.2 | The GBRA will implement the approved QAPP. Cooperating Entity will submit revisions and necessary amendments to the QAPP as needed. | | |
| | Start Date | Month 1 | Completion Date Month 11 |
| Deliverables | <ul style="list-style-type: none"> • QAPP approved by TSSWCB • Approved revisions and amendments to QAPP, as needed • Data of known and acceptable quality as reported through Task #3.1 – 3.5 | | |

| Tasks, Objectives and Schedules | | | |
|---------------------------------|--|---------|-----------------------------|
| Task 3 | Water Quality Data Collection & Analysis | | |
| Costs | \$ 57,513 | | |
| Objective | To collect water quality data in the Geronimo Creek watershed so a continuous data record can be maintained during the implementation of the Geronimo Creek WPP | | |
| Subtask 3.1 | The GBRA will conduct routine ambient monitoring at seven sites once per month, collecting field, conventional, flow and bacteria parameter groups. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over 10 months. The number of samples planned for collection through this subtask is 75. Currently, routine ambient monitoring is conducted monthly at one station by GBRA (12576) through the Clean Rivers Program. The GBRA will also collect additional bimonthly ammonia nitrogen and total kjeldahl nitrogen at station 12576 in order to supplement current bimonthly CRP sampling for these parameters. Sampling through this subtask will complement existing routine ambient monitoring regimes such that routine water quality monitoring is conducted monthly at eight sites in the Geronimo Creek watershed. | | |
| | Start Date | Month 1 | Completion Date Month 11 |
| Subtask 3.2 | Field parameters are pH, temperature, dissolved oxygen and conductance. Conventional parameters are total suspended solids, turbidity, sulfate, chloride, nitrate nitrogen, ammonia nitrogen, total kjeldahl nitrogen, chlorophyll-a, pheophytin, total hardness, and total phosphorus. Flow parameters are flow collected by gage, electric, mechanical or Doppler, including severity. Bacteria parameter is <i>E. coli</i> . | | |
| | Start Date | Month 1 | Completion Date Month 11 |
| Subtask 3.2 | The GBRA will conduct routine ambient monitoring at 4 targeted sites once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 3.1. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over 3 seasons. The number of samples planned for collection through this subtask is 12. Spatial and seasonal variation will be captured in these snapshots of watershed water quality. The GBRA's Regional Laboratory will conduct sample analyses. | | |

| | Start Date | Month 1 | Completion Date | Month 11 |
|--------------|--|---------|-----------------|----------|
| Subtask 3.3 | GBRA will conduct biased flow monitoring at 12 sites once per season under wet conditions, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 3.1. These sites shall be the same as the sites for routine ambient monitoring described in subtasks 3.1-3.2. If a storm event was captured under routine monitoring in subtasks 3.1-3.2, a separate biased flow sample will not be collected under this subtask. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over 3 seasons. The number of samples planned for collection through this subtask is 36. Spatial, seasonal and meteorological variation will be captured in these snapshots of watershed water quality. GBRA's Regional Laboratory will conduct sample analyses. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 3.4 | GBRA will conduct routine groundwater monitoring at three sites (e.g., one spring and two wells) once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 3.1. Chlorophyll-a, and pheophytin analysis will be excluded from water well sampling. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over 4 seasons. The number of samples planned for collection through this subtask is 12. GBRA's Regional Laboratory will conduct sample analyses | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 3.5 | GBRA will transfer monitoring data from activities in subtasks 3.1-3.4 to TCEQ for inclusion in the TCEQ SWQMIS at least quarterly. Data will be transferred in the correct format using the TCEQ file structure along with a completed Data Summary, as described in the most recent version of the <i>TCEQ Surface Water Quality Monitoring Data Management Reference Guide</i> . GBRA will post data from monitoring activities collected in subtasks 3.1-3.4 to the project website in a timely manner. Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported. All monitoring data files, data summary reports and data correction request forms will also be provided to Extension. GBRA will input monitoring regime, as detailed in the QAPP, into the TCEQ CMS. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 3.6 | GBRA will continue to maintain a real-time water quality monitoring station on the Geronimo Creek at SH123 (Station no. 14932) that collects field parameters and turbidity every 15 minutes. The data from this station, as a part of the TCEQ Continuous Water Quality Monitoring Network (CWQMN), is available to the public through TCEQ's CWQMN website and through links available on the GBRA educational kiosk located in the watershed. The QAPP for this site is maintained by the TCEQ. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Subtask 3.7 | GBRA will develop a final Assessment Data Report summarizing water quality data collected through Task 3. The Report shall, at a minimum, provide an assessment of water quality with respect to effectiveness of BMPs implemented and a discussion of interim short-term progress in achieving the Geronimo Creek WPP water quality goals. GBRA will summarize the results from Task 3 in the GBRA's Clean Rivers Program Basin Highlights Report. GBRA will provide updates on the results and activities of Task 3 to the Steering Committee. | | | |
| | Start Date | Month 1 | Completion Date | Month 11 |
| Deliverables | <ul style="list-style-type: none"> • Monitoring data files and Data Summary in electronic format • Data correction request forms (as needed) in electronic format • Monitoring data updates posted to the project webpage • Final Assessment Data Report in both electronic and hard copy formats | | | |

Project Goals (Expand from Summary Page)

- Generate data of known and acceptable quality for surface and ground water quality monitoring (routine ambient, targeted watershed, and spring flow) of main stem and tributary stations for field and conventional parameters, flow, and bacteria; and, groundwater monitoring of two shallow wells from the Leona Aquifer for conventional and bacteria parameters.
- Support the implementation of the Geronimo Creek WPP by collecting water quality data for use in evaluating the effectiveness of BMPs, and in assessing water quality improvement and progress in achieving restoration.
- Communicate water quality conditions to the public and to the Partnership on project results and activities in order to support adaptive management of the Geronimo Creek WPP and to expand public knowledge on Geronimo and Alligator Creeks water quality data.
- Work with state and federal agencies, as appropriate, to bring technical and financial resources to the Geronimo Creek watershed.

Measures of Success (Expand from Summary Page)

- Provide technical assistance to the Partnership through collection and interpretation of water quality data.
- Data of known and acceptable quality are generated for surface water quality monitoring (routine ambient, targeted watershed, and spring flow) of main stem and tributary stations on Geronimo Creek for field and conventional parameters, flow, and bacteria and for groundwater monitoring of shallow wells from the Leona Aquifer for conventional and bacteria parameters.
- Water quality data is used to evaluate progress in implementing the Geronimo Creek WPP and achieving water quality restoration.
- Water quality data is communicated to the public and the Partnership in a timely fashion.
- Increased watershed stewardship among Geronimo Creek watershed stakeholders by coordinating the annual stream clean-up on the Geronimo and Alligator Creeks.
- Increased knowledge of citizens, landowners and agricultural producers of management measures identified in WPP through outreach and educational efforts.
- Continued operation and maintenance of the project website to announce relevant activities, project updates and other activities relevant to the WPP development and implementation process.

| 2012 Texas NPS Management Program Reference (Expand from Summary Page) |
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| Components, Goals, and Objectives |
| Component One – Explicit short- and long-term goals, objectives and strategies that protect surface and groundwater. |
| <p>Long-Term Goal – To... restore water quality from NPS pollution through assessment, implementation, and education.</p> <ul style="list-style-type: none"> • Objective 1 – Focus NPS abatement efforts, implementation strategies, and available resources in watersheds identified as impacted by nonpoint source pollution. • Objective 3 – Support the implementation of... programs to reduce NPS pollution, such as the implementation of strategies defined in... WPPs, and other water planning efforts in the state. <p>Objective 7 – Increase overall public awareness of NPS issues and prevention activities.</p> |
| Short-Term Goal One – Data Collection and Assessment – Objective B – Ensure that monitoring procedures meet quality assurance requirements and are in compliance with EPA-approved TCEQ and/or TSSWCB Quality Management Plans. |
| Short-Term Goal Two – Data Collection and Assessment – Objective E – Conduct monitoring to determine effectiveness of... WPPs, and BMP implementation... |
| Short-Term Goal Three – Education – Objective F – Implement public outreach and education to maintain and restore water quality in water bodies by NPS pollution. |
| Component Three – Balanced approach that emphasizes both statewide NPS programs and on-the-ground management of individual watersheds. |

| EPA State Categorical Program Grants – Workplan Essential Elements |
|--|
| <i>FY 2011-2015 EPA Strategic Plan Reference</i> |
| 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 | |
|--------------------------------|-----------|
| Category | Cost |
| Personnel | \$ 9,271 |
| Fringe Benefits | \$ 3,755 |
| Travel | \$ 350 |
| Equipment | \$ 0 |
| Supplies | \$ 210 |
| Contractual | \$ 0 |
| Construction | \$ 0 |
| Other | \$ 44,502 |
| | |
| Total Direct Costs | \$ 58,088 |
| Indirect Costs ($\leq 15\%$) | \$ 2,631 |
| | |
| Total Project Costs | \$ 60,719 |

| Budget Justification | | |
|-----------------------------|---------------------|---|
| Category | Total Amount | Justification |
| Personnel | \$ 9,271 | <ul style="list-style-type: none"> • Director of Water Quality Services (0.03 FTE) • Water Quality Project Manager (0.05 FTE) • Water Quality Field Technician (0.05 FTE) • Water Quality Project Coordinator (0.03 FTE) |
| Fringe Benefits | \$ 3,755 | Fringe calculated at 40.5% of non-federal personnel |
| Travel | \$ 350 | Mileage for sample collection at the state rate (average of 45 miles per monitoring event for approximately 800 miles over 13 trips). |
| Equipment | \$ 0 | N/A |
| Supplies | \$ 210 | Supplies for water quality monitoring, bottles, replacement field probes, continuous monitoring station maintenance parts, write-in-rain paper, and equipment storage costs. |
| Contractual | \$ 0 | N/A |
| Construction | \$ 0 | N/A |
| Other | \$ 44,502 | Analyses of water quality monitoring samples described in Task 3. (75) routine ambient monitoring once per month; (12) routine ambient monitoring once per quarter; (36) biased flow monitoring once per season; and (12) routine groundwater monitoring once per quarter |
| Indirect | \$ 2,631 | 4.53 % of Direct Costs |