Water Quality Monitoring in the Geronimo Creek Watershed and Facilitation of the Geronimo and Alligator Creeks Watershed Partnership

Guadalupe-Blanco River Authority
FY2011 CWA Section 319(h)
Project No. 11-06

Quarterly Report Number 8

Covering work accomplished July through September, 2013

October 11, 2013

I. Abstract

The contract was extended through September 30, 2014. The Quality Assurance Project Plan amendment (Revision #1) was approved. Water quality monitoring was continued. Dry weather targeted monitoring for the fall quarter was conducted in September, with six stations being dry. GBRA and Extension held the meeting of the Geronimo Creek/Alligator Creek Watershed Partnership on September 10, 2013. The second newsletter, *The Geronimo Flow*, was distributed to stakeholders. A Texas Riparian & Stream Ecosystem Workshop was held September 17, 2013.

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: 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 15th of January, April, July and October. QPRs shall be distributed to all project partners and posted to the project website.

- GBRA prepared the progress report for July through September 2013 and submitted the report on October 11, 2013.

60% complete – On-going

Subtask 1.2: GBRA will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.

- GBRA submitted the invoice for April through June 2013 on July 30, 2013.

60% complete – On-going

Subtask 1.3: 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. GBRA will develop lists of action items needed following each project coordination meeting and distribute to project personnel.

- Many calls and emails were shared between GBRA, Extension, TSSWCB, and Partnership members, to plan for the quarterly partnership meeting.
- Discussions were had with Extension and TSSWCB concerning possible no-cost extension of project through September 30, 2014.
- GBRA called a project planning meeting in Temple on September 6, 2013 to organize project deliverables and clearly define roles of project partners.
- An extension for the project contract was executed in September, extending the project through September 30, 2014.

60% complete – On-going

Subtask 1.4: 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. Extension shall contribute content matter for the website as appropriate.

- The Geronimo Creek Partnership webpage was updated with the Partnership meeting notice and other project related information (project maps) and to post the second newsletter.

60% complete – On-going

TASK 2. Quality Assurance

Subtask 2.1: GBRA 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.

Consistent with Title 30, Chapter 25 of the Texas Administrative Code, Environmental Testing Laboratory Accreditation and Certification, which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) Standards, shall be required.

All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415) and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416).

- No work was performed under this task in this quarter.

100% completed – On-going

Subtask 2.2: GBRA will implement the approved QAPP. GBRA will submit revisions and necessary amendments to the QAPP as needed.

- GBRA submitted Revision #1 of the QAPP. Revision #1 was approved on September 23, 2013.

60% completed – On-going

TASK 3. Support and Facilitation of WPP Implementation

Subtask 3.1: Extension will continue to employ a Geronimo Creek Watershed Coordinator to engage and facilitate the Geronimo Creek Watershed Partnership. In coordination with GBRA, the Watershed Coordinator will be responsible for the general oversight and coordination of all project activities, be responsible for reporting requirements and directing educational activities, and serve as the primary conduit for interaction with landowners, citizens, and entities to facilitate the implementation of the WPP. The Watershed Coordinator shall successfully complete (or have already completed) the Texas Watershed Planning Short Course. The Watershed Coordinator shall participate in Texas Watershed Coordinator Roundtables and the TSSWCB Southeast and South Central Texas Regional Watershed Coordination Steering Committee meetings, as necessary.

- The facilitation by AgriLife Extension continued under this contract. Major activities facilitated include the quarterly Partnership meeting and assisting with coordination of the Riparian Workshop and the coordination of the Homeowner Septic System classes offered in November.
- The Watershed Coordinator attended the Texas Watershed Coordinator Roundtable in Dallas July 30, 2013.
- GBRA partnered with Seguin ISD to assist in the production of their Project Based Learning (PBL) Academy this past summer. GBRA focused the PBL Academy on Geronimo Creek. GBRA staff helped with the production of Google fly-overs, maps and graphics. Some of the results from the class were the development of educational materials for the Geronimo Creek watershed. Students approached area restaurants and businesses and secured agreements with them to distribute placemats and other educational items developed through the summer academy. GBRA took the student designs, made final edits, and secured a printing company for production of 1,000 placemats, 500 brochures, and 500 magnets. Payment for production costs will come from the Extension budget. Distributed educational items to local restaurants and businesses for display and use on Water Monitoring Day on September 18, 2013.

60% completed – On-going

Subtask 3.2: Extension will facilitate public participation and stakeholder involvement in the watershed planning process, specifically by facilitating meetings of the Partnership Steering Committee (at least quarterly) and Work Groups (as needed) to provide regular updates on the status of monitoring efforts, progress in identifying implementation funding, and movement towards water quality restoration and seek input and recommendations on needed activities. Extension will coordinate meetings, secure meeting locations, prepare and disseminate meeting notices and agendas. Meeting summaries will be prepared and posted to the project website. The WC will provide counties, cities and other partners with updates on progress of implementation of the WPP, if they are unable to regularly attend Partnership Steering Committee meetings.

- GBRA hosted the meeting of the Geronimo Creek/Alligator Creek Watershed Partnership on September 10, 2013. Extension facilitated. Extension prepared a press release to advertise the meeting, posted the meeting to the Seguin-Gazette and New Braunfels Herald-Zeitung community calendars, emailed the notice and reminders to the Partnership, and notified the Seguin radio station. Presentations attached. Students from Seguin High School and Texas Parks & Wildlife Department presented. It was also discussed when to schedule a feral hog workshop.
- Extension produced the second newsletter, *The Geronimo Flow*, and distributed it to stakeholders. The newsletter was posted to the project website.
- Extension is finalizing plans to begin purchasing space (on a near monthly basis) in the Seguin and New Braunfels newspapers, for the purpose of publishing articles to raise awareness of the project, educate readers regarding BMPs that can have a direct impact on water quality, and to inform readers about project highlights.

60% completed – On-going

Subtask 3.3: Extension will assist governmental and non-governmental organizations (i.e., responsible parties in the Geronimo Creek WPP) in identification and acquisition of resources (financial and technical) to enable WPP implementation. Extension will actively seek and pursue funding opportunities and work with partners to develop grant proposals. The WC will work with state and federal agencies, as appropriate, to bring technical and financial resources to the watershed.

- In September, TCEQ contacted Extension and GBRA to solicit 319(h) nonpoint source program grant applications for implementation projects in the Geronimo and Alligator Creeks watershed. Extension again made contact with representatives from the Cities of Seguin and New Braunfels for the purpose of engaging them in conversation to explore the potential for developing grant proposals for the TCEQ 319(h) Nonpoint Source Program. Seguin declined since they are starting their contract with TCEQ on a grant award to decommission failing septic systems in the Oak Village North subdivision as they tie those homes onto the city's wastewater collection system. Extension worked extensively with New Braunfels through the development of a 319(h) application to TCEQ for a feasibility and construction design project for the flood detention structure behind the Creekside development and for low impact development techniques at the New Braunfels Regional Airport.
- Contact was also initiated with the Seguin Outdoor Learning Center (SOLC) to engage them in the grant application process with TCEQ. The SOLC is identified in the WPP as the location for a potential outreach and education implementation project. After meeting with the SOLC September 11, 2013, and follow up communication, it was determined that GBRA would prepare and submit a grant application to TCEQ this September, partnering with the SOLC. GBRA worked expeditiously to develop and submit the application for funding to TCEQ, meeting the deadline. GBRA met with the SOLC executive committee on September 24 and supplied them with copies of the WPP. They voted to support and participate in the grant proposal. The proposal is attached.
- Last quarter, Extension contacted County Extension Agents to begin work on coordinating for both Comal and Guadalupe counties to participate this fall in the Texas Department of Agriculture Hog Out County Grants Program. However, this quarter, Extension contacted the Texas Department of Agriculture feral hog grant

coordinator to learn that the feral hog grant program is undergoing an extensive overhaul, and is not expected to be completed until Spring 2014. Until that time, work on feral hog grants to TDA will be suspended.

60% completed – On-going

Subtask 3.4: Extension will 1) evaluate and track progress toward achieving milestones established in the WPP; and, 2) work with GBRA to assess water quality data collected through the Clean Rivers Program, this project, and other data collection efforts in relation to achieving load reductions. Extension will develop, publish, print, and distribute to stakeholders, a biennial addendum to the Geronimo Creek WPP that describes modifications/updates to goals and milestones, explains new understandings of sources and cause of water quality issues, documents success in achieving goals and milestones, and success in achieving water quality improvement and load reductions. As the WPP will be published in fall 2012, this draft biennial addendum would most appropriately be published in fall 2014. This draft biennial addendum will function as the Final Report for this project.

- Extension continued development and updating the spreadsheets for the purpose of tracking implementation activities. All implementation activities listed in Tables 8.1 and 8.2 will be carefully monitored and updated as implementation proceeds.
- GBRA and Extension will look at the latest data collected and present it to the stakeholders at the January Partnership meeting.

60% completed– On-going

Subtask 3.5: Extension will coordinate education and outreach activities as identified in the Geronimo Creek WPP. GBRA will make presentations on the Geronimo Creek Partnership and WPP and general NPS pollution information to local schools and community organizations. Extension will support, promote, and participate in, as appropriate, any field days, demonstrations, site tours, or education events sponsored by AgriLife Extension, USDA-NRCS, and/or SWCDs for the Geronimo Creek watershed.

- The WC presented an overview of the project to the Seguin Kiwanis Club on July 17, 2013. Debbie Magin attended and answered questions and met with several interested stakeholders.
- Extension and GBRA are partnering to bring two homeowner septic system classes to the watershed in November. One will be hosted by GBRA in Seguin, and the other will be hosted by Extension in New Braunfels.
- Debbie Magin attended the TSSWCB's Coordination Council meeting held in Columbus, TX on September 5, 2013.
- Debbie Magin attended the City of Seguin's Planning and Zoning Committee Meeting held on August 13, 2013 in order to gather information on a zoning change in the watershed. There was discussion on the future site of the Helmerich and Payne (H&R) International Drilling Co.'s headquarters. The company would like to build on a site that is located between Continental and the Big Red Barn, in the Geronimo Creek watershed. There would be no oil and gas operation or production on the site. In addition to an office building, the company would store rigs temporarily as they move them from one job site to another. No action was taken by the Committee.

H&P will return in October to present their site utilization plan to meet the city's codes.

- Debbie Magin attended the City of Seguin's Unified Code Development meeting to represent the Geronimo Creek Watershed Partnership on August 27, 2013. Code is still in development. No action taken that would impact watershed.

60% completed – On-going

Subtask 3.6: GBRA will include information about this project in GBRA newsletters (e.g., *River Run*) and Clean Rivers Program publications regarding progress to implement the Geronimo Creek WPP. GBRA will solicit content matter for these publications from Project Partners as appropriate.

- GBRA's Public Communication Department worked with the Seguin High Schools Speech and Technology Summer School (Project-based Learning – PBL) class and the Environmental Science class.
- The PBL class gave a presentation on protection and stewardship of the Geronimo Creek to the GBRA Board of Directors on August 21, 2013, displaying the skills and technology they learned in their class.
- The PBL students also gave the presentation to the Seguin ISD Board of Trustees on August 27, 2013. GBRA representatives attended the meeting to thank the teachers, and students for their efforts and to thank the SISD for providing the opportunity to use the Geronimo Creek watershed as the class's focus.

60% completed– On-going

Subtask 3.7: Extension will develop, publish, and distribute 4 semi-annual newsletters that are designed to keep landowners and entities informed of ongoing WPP implementation activities, including water quality data collection and progress toward achieving milestones in the WPP. The newsletter shall be distributed as most appropriate to individual landowners and entities in the watershed. Extension will solicit content matter for the newsletters from project partners as appropriate.

- Extension compiled the second newsletter, "*The Geronimo Flow*". The newsletter was distributed via email to stakeholders and posted to a new tab created on the project webpage.

60% completed – On-going

Subtask 3.8: Extension will facilitate communication with stakeholders in order to engage the public and affected entities in WPP implementation. Extension will utilize all appropriate communication mechanisms including direct mail, e-mail, the project website, and mass media (print, radio, television). Extension will develop and disseminate general project informational materials, including, but not limited to, flyers, brochures, letters, factsheets, news releases, and other appropriate promotional publications. Extension will develop and utilize a listserv (e.g., http://listserv.tamu.edu/) to facilitate direct discussion between stakeholders. Extension will explore the appropriate use of social media (i.e., Facebook) as a stakeholder communication mechanism for this watershed. Extension will solicit content matter for educational materials from project partners as appropriate.

- Extension emailed the steering committee information about the upcoming meeting, the Riparian workshop, and the upcoming Septic System classes. A press release was released, along with posting the meeting to the community calendars, and notifying local radio.
- Extension and GBRA partnered to make edits and fund the production of materials designed in the Seguin High School summer project based learning academy for distribution to the local restaurants and businesses.

60% completed – On-going

Subtask 3.9: Extension will make deliberate efforts to increase awareness of the WPP and secure implementation support thereof from county and municipal governments throughout the watershed.

- Extension made contact with representatives from the Cities of Seguin and New Braunfels for the purpose of engaging them in conversation to explore the potential for developing grant proposals for the TCEQ 319(h) Nonpoint Source Program. Extension worked extensively with New Braunfels through the development of a 319(h) proposal to TCEQ for a feasibility and construction design project for the flood detention structure behind the Creekside development and for low impact development techniques at the New Braunfels Regional Airport. Seguin declined since they are starting their contract with TCEQ on a grant award to decommission failing septic systems in the Oak Village North subdivision as they tie those homes onto the city's wastewater collection system.
- Contact was also initiated with the Seguin Outdoor Learning Center (SOLC) to engage them in the grant application process with TCEQ. The SOLC is identified in the WPP as the location for a potential outreach and education implementation project. After meeting with the SOLC September 11, 2013, and follow up communication, it was determined that GBRA would prepare and submit a grant application to TCEQ this September, partnering with the SOLC. GBRA worked expeditiously to develop and submit the application for funding to TCEQ, meeting the deadline. GBRA met with the SOLC executive committee on September 24 and supplied them with copies of the WPP. They voted to support and participate in the grant proposal. The proposal is attached.

60% completed– On-going

Subtask 3.10: Extension will maintain a spreadsheet of watershed stakeholders and affected parties for use in engaging the public in the watershed planning process. The spreadsheet will be added to based upon previous efforts of Extension in TSSWCB project 08-06. The spreadsheet will represent a diverse cross section of Geronimo Creek landowners, citizens, local businesses, local and regional governmental entities and elected officials, state and federal agencies, and environmental and special interest groups.

- Extension updated the stakeholder email spreadsheet with participant emails obtained from the Partnership meeting and the Riparian Workshop. These events added 35 new contacts to the stakeholder list.

60% completed – On-going

Subtask 3.11: Extension will attend and participate in other public meetings as appropriate in order to communicate project goals, activities and accomplishments to affected parties. Such meetings may include, but are not limited to, city councils, county commissioners' courts, Clean Rivers Program Basin Steering Committee and Coordinated Monitoring, local soil and water conservation districts (SWCDs), groundwater conservation districts and other appropriate meetings of critical watershed stakeholder groups.

- Extension attended and participated in the Comal-Guadalupe SWCD board meeting on September 24, 2013. TSSWCB presented the final work plan for the new district technician position to the SWCD. Both Extension and TSSWCB answered questions from the SWCD and offered to assist with the hiring and new employee orienting process.

60% completed – On-going

TASK 4. Water Quality Data Collection and Analysis

Subtask 4.1: 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 21 months. The number of samples planned for collection through this subtask is 147. Currently, routine ambient monitoring is conducted monthly at one station by GBRA (12576) through the Clean Rivers Program. 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. GBRA's Regional Laboratory will conduct sample analyses. 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 *E. coli* enumerated using USEPA Method 1603.

- July 24, 2013 -
  - Routine monitoring at seven sites - CRP monitoring at one site. One site was dry – Geronimo Creek at Huber Road (20742).
- August 6, 2013 -
  - Routine monitoring at seven sites - CRP monitoring at one site. One site was dry – Geronimo Creek at Huber Road (20742).
- September 18, 2013 -
  - Routine monitoring at seven sites - CRP monitoring at one site. One routine site was dry and not sampled (Geronimo Creek at Huber Road (20742)).

60% completed – On-going

Subtask 4.2: GBRA will conduct routine ambient monitoring at six sites once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific

parameters are defined in Subtask 4.1. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over seven seasons. The number of samples planned for collection through this subtask is 42. Spatial and seasonal variation will be captured in these snapshots of watershed water quality. GBRA's Regional Laboratory will conduct sample analyses.

- Dry weather monitoring for the fall quarter was conducted on September 18, 2013. Of the six targeted and eight routine sites, six sites were dry (Geronimo Creek at Huber Road (20742), Alligator Creek at Barbarosa Road (20750), Alligator Creek at FM 1102 (20748). And Alligator Creek at FM 1101 (20749)), unnamed tributary at Laubach Road (20753) and Baer Creek at Walnut St. (20744). One site was dry with pools - Alligator Creek at Huber Road (20743).

60% completed – On-going

Subtask 4.3: GBRA will conduct biased flow monitoring at fourteen sites once per season under wet conditions, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 4.1. These sites shall be the same as the sites for routine ambient monitoring described in subtasks 4.1-4.2. If a storm event was captured under routine monitoring in subtasks 4.1-4.2, 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 seven seasons. The number of samples planned for collection through this subtask is 98. Spatial, seasonal and meteorological variation will be captured in these snapshots of watershed water quality. GBRA's Regional Laboratory will conduct sample analyses.

- Wet weather monitoring was conducted for the fall quarter on September 23 and 30, 2013. Because of two rain events in mid-September that subsequently caused runoff throughout the watershed all sites had flow and were sampled.

60% completed – On-going

Subtask 4.4: GBRA will conduct routine groundwater monitoring at up to four sites (e.g., two spring and two wells) once per quarter year, collecting field, conventional, flow and bacteria parameter groups; specific parameters are defined in Subtask 4.1. The QAPP developed in Task 2 will precisely identify the sites. The sampling period extends over seven quarters. The number of samples planned for collection through this subtask is 28. GBRA's Regional Laboratory will conduct sample analyses.

- GBRA collected groundwater well samples at two sites and one spring site September 18, 2013 (fall quarter).
- The spring site was resampled on September 30 for *E. coli* due to a laboratory error. The corrective action report supplied by the laboratory is attached.

60% completed – On-going

Subtask 4.5: GBRA will transfer monitoring data from activities in subtasks 4.1-4.4 to TSSWCB 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 *TCEQ Surface Water Quality*

Monitoring Data Management Reference Guide. GBRA will post data from monitoring activities collected in subtasks 4.1-4.4 to the project website in a timely manner. GBRA will submit Station Location Requests to TCEQ, as needed, to obtain TCEQ station numbers for new monitoring sites. 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.

- GBRA, under instructions from TCEQ, submitted monitoring data collected under this project directly to TCEQ for the months of February – July 2013 on September 12, 2013. The data was assigned specific tag numbers by TCEQ.
- GBRA began updating data tables for uploading to the project website. Will be completed and uploaded next quarter.

60% completed – On-going

Subtask 4.6: GBRA will develop a final Assessment Data Report summarizing water quality data collected through Task 4. 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 4 in the GBRA's Clean Rivers Program Basin Highlights Report and Basin Summary Report. GBRA will provide updates on the results and activities of Task 4 to the Steering Committee.

- No work was performed under this task in this quarter.

0% completed– On-going

III. Related Issues/Current Problems and Favorable or Unusual Developments

- Routine monitoring was conducted.
- A Texas Riparian & Stream Ecosystem Workshop was held September 17, 2013 which resulted in introducing an almost entirely new group of stakeholders to the project.
- Dry weather monitoring was conducted in the quarter. Six sites were dry.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

a. Monitoring will continue at routine sites.
b. Data tables will be completed and uploaded to project webpage.
c. Webpage will continue to be updated.
d. Newsletter development and distribution will continue.
e. Extension will have a booth set up at the 73rd Annual Meeting of SWCD Directors in Forth Worth in October.
f. Extension will begin purchasing newspaper space for the purpose of publishing monthly articles that will educate about practices to improve water quality in the area.
g. Extension will work with project partners to prepare for the new Comal-Guadalupe SWCD field technician position.

h. Extension will work with Comal and Guadalupe Counties On-Site Sewage Facilities programs to advertise the homeowner septic system workshops coming in November.
i. GBRA and Extension will look at the latest data collected and present it to the stakeholders at the January Partnership meeting.
j. Debbie Magin will attend the City of Seguin's Planning and Zoning Committee meeting to hear about H&P International Drilling Company's plans for the site in the watershed.

Texas Commission on Environmental Quality
Clean Water Act (CWA) Section 319(h) Nonpoint Source (NPS) Grant Program

FY 2014 CWA § 319(h) Grant Application
Scope of Work

Part I. Project Summary

1. **Title**	Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watersheds through Outreach and Education
2. **Goals**	Assist the Geronimo and Alligator Creeks Watershed Partnership's efforts to address the bacteria impairment and nutrient concerns in the watershed through education and outreach. • Design and implement the educational component of the WPP that will be used to enhance public understanding of the health of a riparian and creek ecosystem.
3. **Tasks**	1) Project Administration 2) Riparian Education 3) Nonpoint Source Pollution (NPS) Education 4) Demonstration of Low Impact Development Practices 5) Final Report
4. **Measures of Success**	• Education evaluations show an increase in stakeholder knowledge about the Geronimo Creek watershed and how to reduce NPS pollution as a result of the project.
5. **Water Body Type**	Check all applicable categories of activity under this project. ☒ Surface Water ☒ Groundwater ☒ Surface Water/Groundwater Interactions
6. **Geographic Scope**	The Geronimo and Alligator Creeks Watershed, Guadalupe and Comal County, Texas
7. **Segment ID Number**	Segment 1804A
8. **Segment Water Quality Status on the 2010 Texas Integrated Report**	*Parameter(s) of Impairment*: E. coli *Category*: 5c *Parameters(s) of Concern*: Nitrate-nitrogen

9. **Activities**	*Check all that apply from the lists under 9a, 9b, 9c, and 9d. If you select "Other" for any item, provide a concise explanation.*
a. ***Data Collection & Analysis***	☐ Routine Monitoring ☐ Storm Event Monitoring ☐ Specialized Monitoring ☐ Modeling ☐ Data Analysis ☐ Geospatial Analysis/Map Development ☐ BMP Effectiveness Monitoring ☐ Load Calculations ☐ Other: Concisely describe the activity.
b. ***Planning***	☒ Stakeholder Process ☐ Watershed Characterization ☐ Watershed Protection Plan (WPP) Development ☐ Other: Concisely describe the activity.
c. ***Implementation***	☒ Implement Best Management Practices (BMPs) of a WPP ☐ Implement BMPs of a Total Maximum Daily Load (TMDL) Implementation Plan (I-Plan) ☐ Implement Low Impact Development (LID) BMPs ☐ Implement demonstration BMPs ☐ Other: Concisely describe the activity.
d. ***Education***	☐ Social Marketing ☒ Technology Transfer ☐ Other: Concisely describe the activity.
10. **Project Period:**	Upon signature approval of both parties – *The project, if selected, will start once the contract is signed during the state fiscal year 2015. The state fiscal year begins September 1st and ends August 31st of the following calendar year. The maximum project period is three fiscal years, including 2015, 2016, and 2017.*

11. **Cost Summary**	*Do not fill these cells in; they are linked to Part X, #41, Line M. After you have completed Part X, return to this table, select the cells in the right column, and click F9 (or right-click and select "Update Fields"). The cells should then be populated with the information from Part X, #41, Line M. The federal portion (a. Federal (TCEQ) Reimbursable Costs) should equal 60% (sixty percent) of the total project cost. The applicant portion (b. Non–Federal Matching) should equal 40% of the total project cost.*
a. ***Federal Reimbursable Costs***	$184,000
b. ***Non-Federal Matching***	$123,000
c. ***Total Project Costs***	$307,000

Part II. Applicant Information

12. **Organization**	Guadalupe Blanco River Authority
13. **Project Leader**	Debbie Magin
14. **Title**	Director of Water Quality Services
15. **Federal ID No.**	74-6001779
16. **E-mail Address**	dmagin@gbra.org
17. **Mailing Address**	933 E. Court St.
18. **City**	Seguin
19. **County**	Guadalupe
20. **State**	Texas
21. **Zip Code**	78155
22. **Telephone No.**	830-379-5822
23. **Fax No.**	NA

24. **Applicant Qualifications:**

Grants secured and managed by the Guadalupe Blanco River Authority staff ongoing or recently completed:

1) TCEQ Clean Rivers Program FY12-13 $286,682

2) TCEQ Clean Rivers Program FY14-15 $270,756

3) TCEQ Nutrient Method Development Study $40,000

4) TSSWCB Coordinating Implementation of the Plum Creek Watershed Protection Plan $360,000

5) TSSWCB Surface Water Quality Monitoring and Additional Data Collection Activities to Support the Implementation of the Plum Creek Watershed Protection Plan $742,710

6) TSSWCB Water Quality Monitoring in the Geronimo Creek Watershed and Facilitation of the Geronimo and Alligator Creeks Watershed Partnership $483,856

7) TSSWCB Investigation into Contributions of Nitrate-Nitrogen to Plum Creek, Geronimo Creek and the Underlying Leona Aquifer $215,750

8)TPWD SB2 Baseline Study $24,069

9)TPWD Vegetation Control Lower Basin $8,000

10)TWDB Water Quality Modeling for SB2 $35,000

11)TWDB Stakeholder Process Assistance in the Lower Guadalupe River Sub-Basin $10,000

Grants secured and managed by Seguin Outdoor Learning Center (SOLC) staff:

1) 2012 - Texas Parks and Wildlife Department, Community Outdoor Outreach Program – Project SERÁ: Service, Experience and Recreational Activity – Design and implementation of an educational program that focused on outdoor activity and recreation, was multidisciplinary and included interactive learning. $14,430
2) 2005 – REI, REI Gives - Introduce the activity of mountain biking to beginners through the purchase of mountain bikes. $3,100

3) 2005 - Texas Parks and Wildlife Department, Community Outdoor Outreach Program – Project GETGO: Girls Exploring Texas' Great Outdoors – Development of innovative and creative programs focused on providing girls who are low-income, minority and/or with special needs an opportunity to better understand our natural world. $32,870
4) 2000 – Environmental Protection Agency ,Water Quality Pilot Program - Educational program for students and teachers for the purpose of teaching water quality analysis. $4,694
5) 1999 – Meadows Foundation – Construction grant for building approximately 1,000 square foot cinder block SOLC Environmental Science Center. $178,940
6) 1999 – Guadalupe Blanco River Authority (GBRA) – Reimbursement grant for the purpose of outfitting the SOLC Environmental Science Center with labs, equipment, teaching materials and safety devices. $19,646
7) 1999 – National Wild Turkey Federation – Reimbursement grant for the purpose of purchasing equipment for outdoor shooting and archery ranges. $5,000
8) 1998 – MG and Lillie Johnson Foundation – Construction grant for building and furnishing approximately 800 square foot frame Natural History Center.
9) 1996 - Texas Parks and Wildlife Department – Construction grant for building approximately 1,600 square foot frame TPWD Teaching Center. $37,800

PRESENTATIONS AND PUBLICATIONS

The following is a list of publications, reports, interactive videos and education resources developed by GBRA:

Clean Rivers Program Basin Highlights Report and Basin Summary Report- the Basin Highlights Report is generated annually and includes an overview of water quality monitoring efforts in the Guadalupe River Basin, a description of the water quality conditions of the basin, a summary of the findings of any special studies or monitoring efforts, and includes maps of the sampling sites. The Basin Summary Report is generated every five years in place of the Basin Highlights Report and is a comprehensive analysis of water quality data for the basin.

GBRA's Waters to the Sea – Waters to the Sea is a series of internationally acclaimed, interactive, multimedia, learning programs on North America's waterways for grades four through eight. GBRA funded and helped produce with the educational multimedia production arm of the Center for Global Environmental Education at Hamline University a regional version for the Guadalupe River. Program can be viewed at http://cgee.hamline.edu/WTTS-Guadalupe/ .

Aqua Phil's Conservation Basin- Water conservation in the Guadalupe River Basin.

GBRA River Run- This seasonal magazine features insightful articles, company news, and practical information about water issues and other forces shaping our company.

GBRA Annual Report- This annual publication provides comprehensive, user-friendly information on company trends and includes tables and graphs that help readers assess the growth of GBRA.

Wastewater Treatment Facility Training-An informational wastewater treatment module that shows the procedures of wastewater treatment and explains why it is important to properly manage wastewater at all steps in the process, from your home all the way to the stream where the treatment facility discharges.

The following flash modules below were developed by GBRA as part of the Taking Charge of Water Quality in Plum Creek project funded through Section 106 of the Clean Water Act. These modules are available for viewing at http://www.gbra.org/flash/education.aspx .

Septic System Training -An online training program to illustrate proper septic system function and maintenance to ensure efficiency and to extend the life of the system.

Fats, Oils, and Grease Training - An online training program to address management practices for handling fats, oils, grease, and household chemical use and disposal. The training is geared toward both businesses and homeowners.

Stormwater Management Training- An online training tool for municipal operations employees to encourage proper stormwater management. This module addresses stormwater control practices and includes information for entities that must satisfy municipal stormwater regulations.

The GBRA Education Department works with customers, teachers, students and the general public to increase their awareness and appreciation of the water and natural resources in the Guadalupe River Basin, and GBRA's stewardship, protection, conservation and reclamation of these resources. A wide variety of materials and formats are used to communicate this information, including free education programs that meet all state-mandated requirements, including TEKS and STARR elements, special focus publications, tours and guest speakers. The following is a list of educational resources developed by the GBRA Education Department available for viewing at http://www.gbra.org/education/elementary.aspx and http://www.gbra.org/education/secondary.aspx .

Journey Through the Guadalupe River Basin - Two cartoon characters, "Edward A. Armadillo" and "Lupe" the turtle guide teachers and students on a trip down the Guadalupe River, introducing them to their watershed, the history and geography of the river basin, aquifers and the importance of springflow to the Guadalupe River, dams and hydroelectric generation, how water is used and by whom, and the importance of water regulation and conservation.

Water Quality Monitoring - Supplement for grades 4-6 dealing with Water Monitoring and Non-Point Source Pollution. Teachers interested in addressing watersheds and water quality in the Guadalupe River Basin are encouraged to lead their students in an investigation of a local creek or river. The monitoring activities are used in coordination with a water monitoring kit, which can be donated to schools in the Guadalupe River Basin.

Watershed Puzzle - Everyone lives in a watershed - an area of land that drains water into a particular creek, river or lake. This puzzle will help you learn about the watersheds of the Guadalupe River Basin.

River of Life - GBRA's curriculum for middle school students and is designed to promote their understanding and appreciation of water. The curriculum includes lessons on the physical properties of water, the hydrologic cycle, watersheds of the Guadalupe River, the Edwards and other aquifers in the region, the health of a body of water, pollution sources, drinking water, and wastewater treatment. A teacher's guide, interactive CD for students, and other key materials are included in the kit.

Don't Be Clueless About Water Quality Curriculum Supplement (grades 5-8) - tackles Non-Point Source Pollution. Teachers interested in addressing watersheds and water quality in the Guadalupe River Basin are encouraged to explore the topic, using the 5-E Model of Science Instruction. TEKS correlated. PowerPoint programs (access above) included in the program are Watershed Jeopardy and Why Watersheds. Also included is use of the Guadalupe River Basin puzzle.

Part III. Project Partners

25. **Project Partners and Roles**

a. *Project Partners (Organizations)^*	b. *Roles & Responsibilities*
Texas Commission On Environmental Quality (TCEQ)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TSSWCB
Guadalupe Blanco River Authority	Provide oversight and management of project activities at the grantee level; ensure coordination of activities with project partners; develop outreach and education resources
Seguin Outdoor Learning Center	Assist in the development of outreach and education resources; provide land for construction of demonstration best management practices; provide facilities for workshops and training; provide outreach and education to students, teachers, civic leaders, riparian landowners and general public; provide maintenance and upkeep of best management practices demonstrations
Texas AgriLife Extenstion Service	Facilitation of the Geronimo and Alligator Creeks Watershed Partnership; assist in the development of outreach and education resources; provide instructors for classes focused on educating municipal officials on low impact development and green infrastructure techniques
Texas Water Resources Institute (TAMU)	Assist in the development of interactive flash module that supports the Texas Riparian Workshops

Part IV. Planning Coordination

26. **Implements a WPP or a TMDL I-Plan**	Yes ☒ No ☐ If yes, complete the additional items below. Document Title: The Geronimo and Alligator Creeks Watershed Protection Plan Developing Organization: Texas AgriLife Extension (www.geronimocreek.org) *Document Location:* (http://www.geronimocreek.org/documents/wpp/FinalDraftGACWPP.pdf) State Agency Overseeing Plan: TSSWCB Year Finalized: 2012 Measures to Implement: Table 8.2 on page 91 identify the Seguin Outdoor Learning Center Nonpoint Source Pollution Educational Programs as described on page 76 in the WPP.
27. **Implements the Texas Coastal Nonpoint Source Pollution Control Program**	Yes ☐ No X If yes, complete the item below. Measures to Implement: Identify concisely the locations in the document (such as the section, page number, and BMP) that reference measures proposed to be implemented.
28. **Implements the Texas NPS Management Program (draft 2012 update)**	Check all that apply: Component 1(Ch. 2): Long Term Objectives: 1☒ 2☐ 3☒ 4☐ 5☐ 6☒ 7☒8☒ Short Term Objectives: Data Collection and Assessment: A☐ B☐ C☐ D☐ E☐ Implementation: A☐ B☒ C☐ D☒ Education: A☐ B☐ C☐ D☒ E☐ F☐G X Components(Ch. 1): 2☒ 3☒ 4☒ 5☒ 6☒ 7☐ 8☐ 9☐ Milestones: Priority Watershed Milestones (Ch. 2): A☐ B☐ C☐ D☐ E☒ NPS Program Milestones (Appendix E): ☒ Milestone/Measurement: Milestone is to Implement WPPs (ST2/D) and the Milestone Measurement is WPP Implementation Projects. *The Components listed above are described in the instructions accompanying this form. The Components are also described in Chapter 1 of the draft 2012 Texas Nonpoint Source Management Program. The Long- and Short-Term Objectives are in Chapter 2. The Milestones are found in Chapter 2 and Appendix E.*

29. **Project is in an area covered under an MS4 Permit:**	Yes ☐ No ☒ If yes, complete the additional items below. MS4 Permit Holder: NA The grantee has reviewed the MS4 Permit: Yes ☐ No ☐ The grantee has reviewed the Stormwater Management Program (SWMP): Yes ☐ No ☐ Does the proposed project fund activities required under an MS4 Permit or the associated SWMP: Yes ☐ No ☒ *Activities required under an MS4 Permit or the associated SWMP are not eligible for CWA Section 319 funds.*

Part V. Water Body Information

30. **Water Body Information**

Water bodies may include 1) stream, lake, or estuary segments and 2) major or minor aquifers.

a. *Watershed or Aquifer Name*	b. *Segment ID*	c. *Hydrologic Unit Code (10 or 12 Digit)*	d. *Size*
Geronimo Creek Watershed	1804A	121002020111	70 square miles

Part VI. Project Narrative

31. **Problem/Need Statement:**

In 2007, the TSSWCB Regional Watershed Coordination Steering Committee, using established criteria, ranked Geronimo Creek in the top three watersheds for selection of WPP development. The TSSWCB project 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 through a partnership between Extension and 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 bacteria impairment and a concern for nitrate-nitrogen. Potential sources of bacteria and nutrients were identified through the development of the WPP. Sources include: urban runoff, dog waste, wastewater collection systems, failing on-site sewage facilities (OSSFs), livestock (cattle, goats, and horses), deer, and feral hogs.

The Geronimo and Alligator Creek Watershed Protection Plan (GACWPP) was accepted by EPA September 13, 2013.

The proposed project is the first step taken by the Seguin Outdoor Learning Center as part of implementing the GACWPP. Implementation of the GACWPP has begun in other areas of the watershed. For example, to educate and increase awareness of water quality issues in the watershed, the GBRA began working with the Seguin High School by conducting a project-based summer class in the summers of 2012 and 2013. Students in the summer program conducted studies on Geronimo Creek, such as benthic macroinvertebrate sampling and identification, water quality monitoring, and stream cleanup activities. Also, located in the middle of the watershed in Geronimo, Navarro High School was the recipient of a 2011 Healthy Habitats grant focusing on the Geronimo Creek watershed. In partnership with the GBRA, students researched the Geronimo Creek watershed from its headwaters to the confluence with the Guadalupe River and then selected a location to restore natural grasses, forbs, and trees along the banks of the creek to help filter water flow during rain events to help prevent pollution. Healthy Habitat grants are designed to support students doing service-learning projects to benefit wildlife and the environment.

Farther upstream in the Alligator Creek watershed, New Braunfels has begun implementing components of their Phase II storm water permit, which will reduce bacteria and nutrient loading in storm water. Extension has conducted a Texas Watershed Stewards Workshop, Agricultural Nutrient Management Seminars, and has partnered with GBRA to provide informational booths at various environmental events. The City of Seguin has begun a CWA Section 319 grant, *Best Management Practice Implementation Project to Reduce Bacteria and Nitrate-nitrogen Loading in the Geronimo Creek Watershed.* Funding from this project will provide for decommissioning of failing on-site sewage systems (OSSFs), while the city will disconnect homes from on-site sewage systems (OSSFs) in an area with documented high failure rates and connect them to a sanitary sewer system, and decommission the old OSSFs.

This project will assist the Geronimo and Alligator Creeks Watershed Partnership's efforts to address the bacteria impairment and nutrient concerns in the watershed through education and outreach.

32. **Project Goals:** Design and implement educational components of the WPP that will serve as tools that can be utilized with elementary school students through high school, with teachers, with civic leaders, with riparian landowners and with the general public in order to enhance understanding of the health of a riparian and creek ecosystem in the Geronimo and Alligator Creeks watershed.

33. **General Project Description:**

"Taking Charge of Water Quality in the Geronimo and Alligator Creeks Watershed through Outreach and Education" is a collaborative effort between the Guadalupe Blanco River Authority (GBRA) and the Seguin Outdoor Learning Center (SOLC). The Seguin Outdoor Learning Center is an environmental and recreational learning center located in the heart of the Geronimo and Alligator Creeks watersheds. Beginning with an initial donation of 23 acres from local resident Carla Blumberg in 1995, the Seguin Outdoor Learning Center has grown to over 115 acres. With incredible support from the community, the school district, local businesses, public and private foundations, and a legion of volunteers, the SOLC has provided the citizens of south central Texas with a multitude of recreational and educational opportunities. SOLC offers many exciting, hands-on science and nature activities for explorers and naturalists of all ages.

Geronimo Creek flows through the facility and is used as part of an outdoor "classroom" for learning about nature and the environment. School children of all ages from the Seguin, New Braunfels and Comal ISDs visit the facility annually. Classes rotate between stations to learn about fishing, kayaking, orienteering, and outdoor recreation. This project will expand that rotation by adding a station that focuses on the environmental health of the creek and its riparian habitat.

The project combines technology with on-the-ground demonstrations and outdoor education to implement behavioral change in stakeholders living and working in the Geronimo and Alligator Creeks Watersheds. The watershed protection plan states "An aggressive outreach and education program will be vital to successful engagement of watershed stakeholders." Several of the project's deliverables will highlight the Geronimo and Alligator Creeks watershed but will also be appropriate for use throughout the Guadalupe River Basin as well as across the state.

In year one of the project, GBRA will develop video and audio public service announcements focusing on two key nonpoint pollution sources identified in the watershed protection plan, dog waste and storm water quality. In years two and three, those public service announcements will be played on local media and on rolling ad monitors in businesses within the watershed.

The Texas Water Resources Institute (TWRI), under the Texas State Soil and Water Conservation Board's Clean Water Act §319(h) Nonpoint Source Grant Program Project No. 12-07, *Statewide Delivery of Riparian and Stream Ecosystem Education Program*, is conducting 25 riparian workshops across the state. The goals of the TWRI project include 1) promotion of healthy watersheds and improvement of water quality through the delivery of riparian and stream ecosystem education programs with a focus on priority watersheds; 2) increase citizen awareness, understanding, and knowledge about the nature and function of riparian zones, their benefits, and BMPs to protect them and minimize NPS pollution; and, 3) enhance interactive learning opportunities for riparian education across the state and establish a larger, more well-informed citizen base working to improve and protect local riparian and stream ecosystems. GBRA and SOLC, in consultation with TWRI, will develop educational resources that support the TWRI riparian workshops.

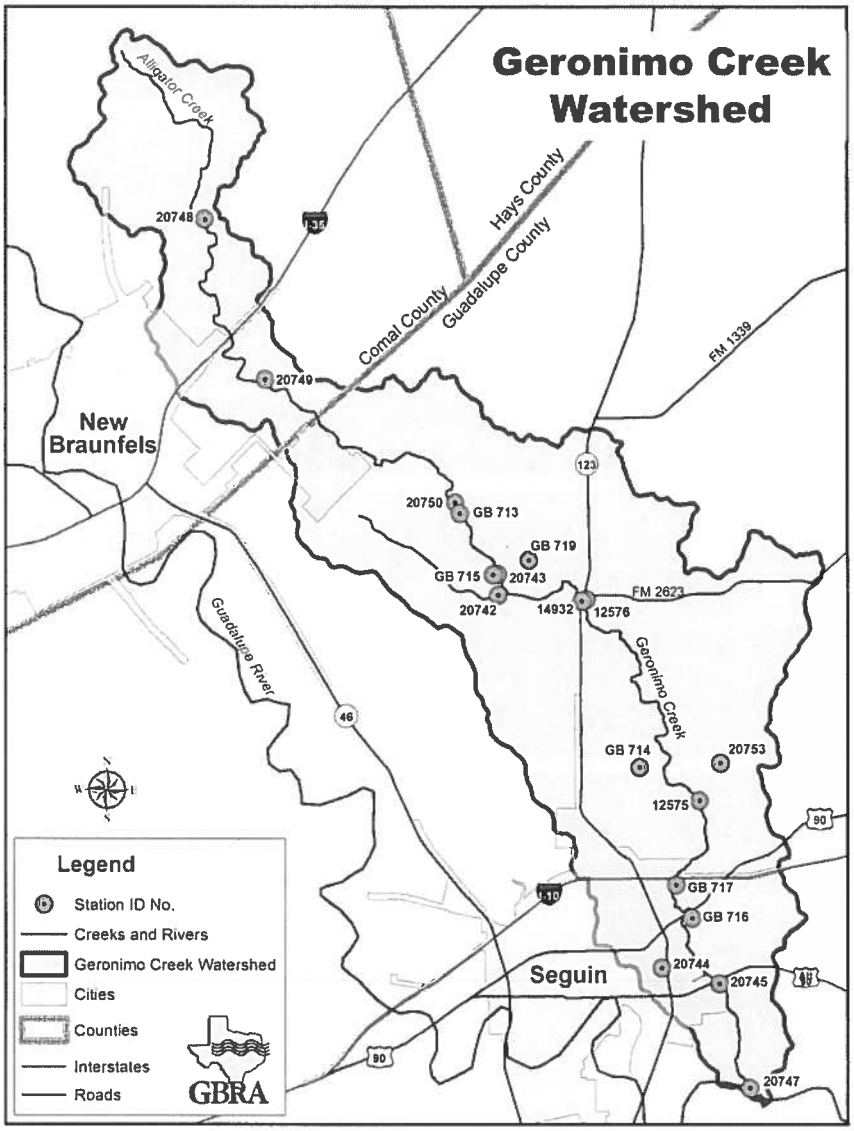
Those resources include an interactive, flash computer module appropriate for all ages. The interactive computer module will provide information about the riparian processes and features taught in the TWRI workshop, at "the touch of a finger" to a computer screen. The module will be installed onto the educational kiosk that was developed and made available to students in the Geronimo Creek watershed through the TCEQ CWA Section 319 grant, *Guadalupe River Basin Monitoring Network – Continuous Monitoring on Threatened or Impaired Water Bodies,* completed in 2012. Additionally, the module will be available on computers in the SOLC environmental science building for use during their environmental classes. GBRA and SOLC will develop a "riparian walk" along the Geronimo Creek on the SOLC property that takes what was introduced in the workshops and flash module, outdoors. The nature walk will include interpretive kiosks and signage appropriate for all ages. Also, GBRA will develop a geocaching "treasure hunt" that takes high school students on a search for riparian plants and features, located along the creek.

The project will conduct a feasibility study in year one to determine the appropriate location and feasibility of nonpoint source demonstration projects by looking at the SOLC property, the creek and drainage areas and taking into consideration the SOLC's master plan for the property. In year two, the selected demonstration projects will be constructed on approximately 3 acres of SOLC property. The demonstration projects considered in the feasibility study include bioswales, rain gardens, pervious pavement, and detention and/or retention ponds. A rainwater harvesting demonstration and a garden

that exhibits native plants and grasses will be constructed on the SOLC site. The SOLC will support those demonstration projects by hosting two nonpoint source education workshops in year three. Texas A&M AgriLife Extension will assist with these workshops, and will provide professional educators with experience in Low Impact Development (LID) and Green Infrastructure (GI) techniques. The workshops will be opened to municipal officials, municipal staff, developers, and landowners and will focus on components of Low Impact Development. The demonstration projects will also be available and open to other adult educational opportunities offered at the SOLC, such as classes for Master Naturalists and Master Gardeners.

The project will fund the necessary technology upgrades and infrastructure for the SOLC, including a router, lap top computers, microscope, projector and screen. The project covers the costs of a 0.5 FTE, who will be responsible for the development of the educational modules and materials and assist with outreach and classes.

34. **Project Map: Map of the Geronimo and Alligator Creeks Watershed**



Part VII. Project Tasks

35. **Tasks**

Task 1:	**Project Administration**
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:	**Project Oversight** – GBRA will provide technical and fiscal oversight of the staff and subgrantee(s)/ subcontractor(s)to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget. With the TCEQ Project Manager authorization, GBRA may secure the services of subgrantee(s)/ subcontractor(s). Project oversight status will be provided to the TCEQ with the Quarterly Progress Reports.
Subtask 1.2:	**Quarterly Progress Reports (QPRs)** – GBRA will submit QPRs to the TCEQ Project Manager by the 15th of the month following each state fiscal quarter for incorporation by the TCEQ into the Grant Reporting and Tracking System (GRTS). The Reports are to include the following: • Status of deliverables for each task • Brief narrative description in Progress Report format
Subtask 1.3:	**Reimbursement Forms** – GBRA will submit reimbursement forms to the TCEQ Contract Manager by the last day of the month following each state fiscal quarter. For the final quarter of the contract period, Reimbursement Forms are required on a monthly basis.
Subtask 1.4:	**Contract Communication** – GBRA will participate in a post-award orientation meeting with TCEQ within 30 days of contract execution. GBRA will maintain regular telephone and/or email communication with the TCEQ Project Manager regarding the status and progress of the project in regard to any matters that require attention between QPRs. Matters that must be communicated to the TCEQ Project Manager include, but are not limited to: • Notification a minimum of 14 days before that GBRA has scheduled public meetings or events, initiation of construction, or other major task activities. • Notification within 48 hours regarding events or circumstances that may require changes to the budget, scope of work, or schedule of deliverables.
Subtask 1.5:	**Coordination Meeting with EPA** – GBRA will attend a project update and coordination meeting with EPA in Dallas to share progress on goals, measures of success, challenges, and opportunities mid-way through the project.
Subtask 1.6:	**Annual Report Article** – GBRA will provide an article for the *Nonpoint Source Annual Report* upon request by the TCEQ. The article will include a brief summary of the project and describe the activities of the past fiscal year.
Deliverables:	• QPRs • Reimbursement Forms • Contract Communication Meeting Minutes • Annual Report Article

Task 2:	Riparian Education
Objective:	To illustrate how the riparian system works and its importance to the health of the ecosystem
Subtask 2.1:	Develop interactive flash module to support outreach and education in the watershed and the TWRI's riparian educational workshops statewide
Subtask 2.2:	Install flash module on computer kiosk and laptop computers located at the SOLC
Subtask 2.3:	Purchase and install computer technology and infrastructure for the SOLC to support the use of the interactive module as part of workshops held at the SOLC, including riparian education, elementary school tours, landowners and Master Naturalists workshops
Subtask 2.4:	Develop geocaching exercise for high school students that visit the SOLC, taking students on a tour of the riparian network to identify riparian vegetation and functions
Subtask 2.5:	Develop "riparian walk" on the SOLC site, along Geronimo Creek, including informative kiosks and signage that includes QR codes for smart devices
Subtask 2.6:	Deliverables and accomplishments associated with Task 2 will be advertised/marketed to stakeholders in the watershed through press releases, Partnership meeting presentations, project web page postings, project newsletter articles, and paid newspaper articles (newspaper articles will be through a 319(h) grant to Extension from TSSWCB)
Deliverables:	• Flash interactive module and installation on kiosk • All electronic resources developed in this task posted to the Geronimo and Alligator Creeks project webpage (http://www.geronimocreek.org/) • Deliverables and accomplishments advertised and/or marketed per subtask 2.6 • Geocaching exercise • "Riparian Walk," kiosks and signage • Purchase computers, projector, screen, router, microscope

Task 3:	Nonpoint Source Pollution (NPS) Education
Objective:	Develop NPS resources to educate individuals about their watershed, the impacts of individual actions, and how they can reduce their impacts
Subtask 3.1:	Develop a 30-second video on the importance of picking up after your pets; post the video as a public service announcement on local media and on rolling ad monitors in businesses in the Geronimo Creek Watershed; develop an audio version for use as public service announcements on local radio stations
Subtask 3.2:	Develop a 1-minute video on the fate and transport of pollutants in storm water; post the video as a public service announcement on local media and on rolling ad monitors in businesses in the Geronimo Creek Watershed; develop an audio version for use as public service announcements on radio stations in the watershed
Subtask 3.3:	Organize and conduct two workshops on low impact development practices, including storm water controls, aimed at municipal officials and employees, landowners, and developers
Subtask 3.4:	Deliverables and accomplishments associated with Task 3 will be advertised/marketed to stakeholders in the watershed through press releases, Partnership meeting presentations, project web page postings, project newsletter articles, and paid newspaper articles (newspaper articles will be through a 319(h) grant to Extension from TSSWCB)

Deliverables:	• 2 NPS videos and associated audio versions • Two year advertising and/or PSA in local area • Two workshops (years two and three) on LID practices • Deliverables and accomplishments advertised and/or marketed per subtask 3.4 • Deliverables from this task summarized and posted permanently to the Geronimo and Alligator Creeks project webpage (http://www.geronimocreek.org/)

Task : 4	**Demonstration of Low Impact Development Practices**
Objective:	To demonstrate function, size and applicability of low impact development practices for urban nonpoint source pollution load reductions
Subtask: 4.1	Design and construction of a rainwater harvesting system at the SOLC, including informational kiosks and printed literature for use at workshops in Subtask 3.3 and other outreach events held at the SOLC
Subtask: 4.2	Conduct a feasibility study of the SOLC land and the SOLC master plan to determine the appropriate low impact development practices that could be constructed as a demonstration project; those structures considered and evaluated will include bioswales, rain gardens, pervious pavement and retention/detention ponds
Subtask: 4.3	Design and construction of low impact development practices, based on the results of Subtask 4.2; demonstration structures will be supported by informational kiosks and printed literature for use at workshops in Task 3.3 and other outreach events held at the SOLC
Subtask: 4.4	Design and construction of demonstration plot containing urban landscaping with native plants and grasses, promoting water conservation, proper fertilizer use and drought tolerance; demonstration will be supported by informational kiosks and printed literature for use at workshops in Task 3.3 and other outreach events held at the SOLC
Subtask: 4.5	Deliverables and accomplishments associated with Task 4 will be advertised/marketed to stakeholders in the watershed through press releases, Partnership meeting presentations, project web page postings, project newsletter articles, and paid newspaper articles (newspaper articles will be through a 319(h) grant to Extension from TSSWCB)
Deliverables:	• Feasibility study in year one • Storm water BMP demonstration project(s) in years 2 and 3 • Installation of rainwater harvesting system • Printed information and information kiosks associated with Tasks 4.1, 4.3, and 4.4 • Demonstration of native grasses and plants • Deliverables and accomplishments advertised and/or marketed per subtask 4.5 • Deliverables from this task summarized and posted permanently to the Geronimo and Alligator Creeks project webpage (http://www.geronimocreek.org/)

Task 5:	**Final Report**

Objective:	GBRA will produce a Final Report that summarizes all activities completed and conclusions reached during the project. The report will describe project activities, and identify and discuss the extent to which project goals and purposes have been achieved, and the amount of funds actually spent on the project. The report will emphasize successes, failures, lessons learned, and will include specific water quality data demonstrating water quality improvements if applicable. The Final Report will summarize all the Task Reports in either the text or as appendixes.
Subtask 5.1:	**Draft Final Report** – GBRA will provide a draft report summarizing all project activities, findings, and the contents of all previous deliverables, referencing and/or attaching them as web links or appendices. This comprehensive, technical report will provide analysis of all activities and deliverables under this scope of work. The report should be structured per the following outline: • Title • Table of Contents • Executive Summary • Introduction • Project Significance and Background • Methods • Results and Observations • Discussion • Summary • References • Appendices
Subtask 5.2:	**Final Report** – GBRA will revise the draft report to address comments provided by the TCEQ Project Manager and the EPA. GBRA will submit the final report to the TCEQ Project Manager, who will subsequently submit it to EPA.
Deliverables	• Draft Final Report • Address TCEQ/EPA comments pursuant to TCEQ/EPA approval • Final Report

Part VIII. Measures of Success

36. **Measures of Success:**

    Education evaluations show an increase in stakeholder knowledge about the Geronimo Creek watershed and how to reduce NPS pollution as a result of the project.

37. **Estimated Load Reductions and Method(s) (if applicable):**

    Not applicable.

Part IX. Project Timeline

38. **Estimate timeline for project activities**

Task/ Sub-task	Description	FY 15 Q1	FY 15 Q2	FY 15 Q3	FY 15 Q4	FY 16 Q1	FY 16 Q2	FY 16 Q3	FY 16 Q4	FY 17 Q1	FY 17 Q2	FY 17 Q3	FY 17 Q4
1	Project Administration	x	x	x	x	x	x	x	x	x	x	x	x
2	Riparian Education												
2.1	Interactive Flash Module	x	x	x	x	x	x	x	x	x	x	x	x
2.2	Install module on kiosk					x							
2.3	Purchase and install technology infrastructure		x	x									
2.4	Geocaching exercise		x	x		x	x	x	x	x	x	x	x
2.5	Riparian walk		x	x	x	x	x	x	x	x	x	x	x
3	Nonpoint Source Education												
3.1	Pet waste video and audio	x	x	x	x	x	x	x	x	x	x	x	x
3.2	Storm water video and audio	x	x	x	x	x	x	x	x	x	x	x	x
3.3	NPS workshops									x		x	
4	Demonstration of storm water controls			x	x	x	x	x	x	x			
4.1	Rainwater harvesting and supporting educational materials	x	x	x	x	x	x						
4.2	Feasibility Study	x	x	x	x								
4.3	Construction of storm water control demonstration project and supporting educational materials					x	x	x	x	x	x	x	x
5	Final Report									x	x	x	
5.1	Draft Final Report									x	x	x	
5.2	Final Report										x	x	
5.4	TCEQ/EPA Approval												x

Part X. Financial Information

39. **TCEQ Reimbursable Project Costs**
(Federal portion that must equal 60% of overall project costs)

Category	Total Amount	Justification (itemized expenses)
Personnel	$ 40,800	Development of the educational modules and materials and conduct outreach and classes
Fringe Benefits	$16,320	Health Insurance, Retirement and Payroll Taxes (40% of labor)
Travel	$380	Mileage to EPA meeting
Supplies	$2,000	Supplies for educational materials and community meetings
Equipment	$15,000	Laptop computers (10) ($7,500); router for wi-fi ($1,000), projector ($2,000), screen ($500), teacher workstation computer ($1,000): microscope ($3,000)
Contractual	$30,800	Design of flash module graphics ($5,000); feasibility of LID structures ($5,000); preparation of videos and audio clips ($20,800)
Construction	$54,500	Installation of LID structures ($25,000), riparian walkway($4,000), signage ($500), kiosk ($1,000), rainwater harvesting ($20,000) and landscape demonstration using native grasses and plants ($4,000)
Other	$14,000	Video ad time ($6,000), workshops ($4,000), printing of supporting materials ($4,000)
Indirect	$10,200	25% of Labor
Total	**$184,000**	

40. **Matching Project Costs Provided by the Grantee**
(Non-Federal portion that must equal 40% of overall project costs)

Category	Total Amount	Justification (itemized expenses)
Personnel	$52,862	Project Administration, development of all educational resources, construction management (GBRA) 0.05 FTE – Director of Water Quality Services 0.15 FTE – Environmental Education Coordinator 0.1 FTE – Graphics Designer
Fringe Benefits	$ 21,340	Health Insurance, Retirement and Payroll Taxes (40% of labor)
Travel	$ 0	
Supplies	$ 0	
Equipment	$ 0	
Contractual	$ 0	
Construction	$ 0	
Other	$ 30,910	Construction management, coordination of workshops and school tours, development of educational resources (SOLC) 0.1 FTE Administrator Volunteer hours to conduct tours (780 hours X $20=$17,160);
Indirect	$ 13,388	25% of GBRA labor
In-kind	$ 4,500	Use of land for demonstration projects (3 acres at $1,500 per acre)
Total	**$123,000**	

41. **Budget by Task**

Task #	Title	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
1	Project Administration	$ 380	$ 18,693	$ 19,073
2	Riparian Education	$ 43,330	$ 26,904	$ 70,234
3	Nonpoint Source Pollution Education	$ 44,130	$ 32,920	$ 77,050
4	Low Impact Development	$ 79,330	$ 29,649	$ 108,979
5	Final Report	$ 16,830	$ 14,834	$ 31,664
	Total	**$ 184,000**	**$ 123,000**	**$ 307,000**

42. **Budget Summary**

Category	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
a. Personnel	$ 40,800	$52,862	$
b. Fringe Benefits	$16,320	$ 21,340	$
c. Travel	$380	$ 0	$
d. Supplies	$2,000	$ 0	$
e. Equipment	$15,000	$ 0	$
f. Contractual	$30,800	$ 0	$
g. Construction	$54,500	$ 0	$
h. Other	$14,000	$ 30,910	$
i. Subtotal: Total Direct Costs (sum a-h)	173,800	$ 105,112	$
j. Indirect Costs	$10,200	$ 13,388	$
k. Other In-kind / Third Party		$4,500	$
l. Total Project Costs (sum k & l)	**$184,000**	**$123,000**	**$**

Part XI. Applicant Authorization

43. **Applicant Signature**

Debbie Magin	Title Director of Water Quality Services	Date 10/4/2013

Corrective Action(s) for: _ E.Coli Sample 754

Date:___ 9/18/2013
Analyst: CS
Sample #'s affected_ 234050 A4

Document # 3016-A
rev. 3 Eff. 2/16/07 by: JL

STATE THE PROBLEM: Primary analyst did not record sample on bench sheet and therefore did not record results.

CAUSE OF THE PROBLEM(s) (if known): Oversight by analyst due to multiple samples on counter from another analytical date. This will cause Water Quality Analyst to resample site before the month ended.

ACTIONS TAKEN TO RESOLVE PROBLEM (s): Primary analyst will keep quanti-trays until results are entered into the computer. Analyst will also varify the amount of samples received with what is on the COC and what has/had been analyzed.

FOLLOW UP: Site was resampled - #234483 by LG ✓

REVIEWED BY QA OFFICER:(date/sign) 10/10/2013

GBRA REGIONAL LABORATORY **GBRA Doc. # 3016 B** **Rev. 4 Eff. 02/19/07 by: JL**

Deficiency/Nonconformance/Corrective Action Report for CRP

Report #: E. coli	Date: ex. 09/18/13
Parameter affected: 754	prepared by: Casey Salinas
List sample #'s and sample sites affected	234050 A4
Description of Deficiency	Primary analyst did not record sample on bench sheet and therefore did not record results.
Is Deficiency a NONCONFORMANCE?	Yes
Y or N If yes, complete report, if no	
indicate the date of closure	
Cause of Nonconformance	Oversight by analysist.
Impact of Nonconformance /TRACS	Will cause Water Quality Analyst to resample site before the month end.
Is Data reportable?	No.
Corrective Action to Nonconformance	Primary analyst will keep quantitrays until results are entered into the computer. Analyst will also varify the amout of samples received with what is on the COC and what has/had been analyzed.
Date of proposed action	3/2/2006
Person (s) responsible for action	C.S.
Initial and Date completed	
Initial and Date closed	signed by QAO/Designee

(GBRA use only) Zero Charges-Yes/No	Yes

Chain of Custody

Guadalupe Blanco River Authority- Regional Laboratory

933 E. Court Street, Seguin, Texas 78155

(830) 379-5822 fax: (830) 379-7478

Customer Information

Customer Acct.# **424007**

Name: **GBRA-Geronimo Creek Monitoring** Phone #: 830-379-5822

Address: **933 East Court Street** Fax:

Seguin, Texas 78155 E-mail: DMagin@gbra.org

Sample Collected By: _____ **Lee Gudgell**

Signature Printed Name

Residual Chlorine (Total/Free) Results _____

Thermometer No. 10

pH Paper GBRA reagent no. 04/713-01

Temp C	Date Collected	Time Collected	Matrix WW=Wastewater DW=Drinking Water SW=Surface Water S=soil/sludge	Sx Vol. P=Plastic G=Glass	Sample Name/Description	TCEQ ID Number	Grab / Comp.	Analysis Requested	GBRA Sample I.D.	Bottle I.D.#	pH	GBRA Preservation
9.4	9/18/2013	12:49	SW	1L P w/H_2SO_4	Spring at Timmerman Property	21262	Grab	Total Hardness, Total PO_4, TKN, NH_3-N	234050	B1	2.2	H_2SO_4
	9/18/2013	12:49	SW	100 mL P	Spring at Timmerman Property	21262	Grab	E. coli, GBRA Flow, Flow Method, Flow Severity		A2		
	9/18/2013	12:49	SW	2L P	Spring at Timmerman Property	21262	Grab	Temp, pH, DO, Conductivity, TSS, Turbidity		A1		
	9/18/2013	12:49	SW	1L P	Spring at Timmerman Property	21262	Grab	Cl-, SO_4-, NO_3-N, Chloraphyll A, Pheophytin		S1, S2		
	9/18/2013	10:53	SW	N/A	Baer Creek at Walnut St.	20744	Grab	Flow Severity	234051			
	9/18/2013	12:01	SW	N/A	Unnamed Tributary at Laubach Road	20753	Grab	Flow Severity	234052			
	9/18/2013	13:35	SW	N/A	Geronimo Creek at Huber Road	20742	Grab	Flow Severity	234053			
	9/18/2013	13:38	SW	N/A	Alligator Creek at Barbarossa Road	20750	Grab	Flow Severity	234054			
	9/18/2013	13:47	SW	N/A	Alligator Creek at FM 1101	20749	Grab	Flow Severity	234055			
	9/18/2013	14:08	SW	N/A	Alligator Creek at FM 1102	20748	Grab	Flow Severity	234056			

Delivered By: _____ **Date/Time:** 9/19/13 1631 **Received By:** Kyle Gudgell **Date/Time:** 09 18 13 1631

Delivered By: _____ **Date/Time:** _____ **Received By:** _____ **Date/Time:** _____

Special Notes/Ship to: _____

Ice: Y (Y or N) Number of Containers 9 Condition of Container(s): (intact) N/A

Test Code # 754/1083/1093

Parameter: **E.Coli**

Method: IDEXX Quanti-Tray 2000 MPN/SM 20th 9223 B. Enzyme Substrate Test

GBRA Doc. # 754-A Eff. 2-20-2013 Rev. 7 by:MB

Dilution H2O Date: 082013-03 cfcs

Validation: MB 09/20/13

IN

Analyst: CS

Date: 09-18-13

Time: 711

OUT

Analyst: CS

Date: 09-19-13

Time: 1256

Chlorine Res. Check

Analyst:

Date: N/A 09-18-13 CS

Time:

Sample #	Sample Name	mls used	wells fluoresce under uv light: Large wells	Small wells	Total MPN	RPD	Chlorine Residual Check
	1-Blank	100	0	0	<1		
234045	2-Alligator @ Huber	50	37	6	75.4 = 75 x 2 =	150 >	% RPD 0.06%
234045	3-Alligator @ Huber Dup	50	40	5	85.7 = 86		
234046	4-GC @ FM 20	100	46	13	161.6 = 160		
234059	5-PC @ Heiderich	100	49	48	>2419.6 = >2400		
234037	6-GC @ 90A	100	48	18	248.9 = 250		
234044	7-GC @ Hwy 123	100	48	20	272.3 = 270		
234058	8-Kyle WWTF	100	49	17	~~238.2~~ 09-19-13 CS = 240	290	
234039	9-Wiback Water well	100	9	1	10.9 = 11		
234036	10-GC @ Hollub Rd	100	49	31	648.8 = 650		
234043	11-GC @ IH 10	100	43	11	121.1 = 120		
234060	12-PC @ PC	~~100~~ 50	49	22	387.3 = 390 x 2 =	780 >	% RPD 0.05%
234060	13-PC @ PC Dup	50	~~20~~ 49	20	344.8 = ~~340~~ 341 = 340		
234057	14-GC @ Haberle	100	43	10	117.8 = 120		
234038	15-GC Hwy 90	100	44	9	122.3 = 120		
234042	16-Huber well	100	0	0	<1		
					N/A 09-19-13 CS		

Batch A

Batch B

Range: 30 - 80 Total Positive Wells (Small + Large Wells)

Results Entered By: 09241325

Page 1 of 1

COPY

Test Code # 754/1083/1093

Parameter: **E.Coli**

Method: IDEXX Quanti-Tray 2000 MPN/SM 20th 9223 B. Enzyme Substrate Test

GBRA Doc. # 754-A Eff. 2-20-2013 Rev. 7 by:MB

Dilution H2O Date: 091813-018C/CS

Validation: MB 092 10-10-13 80

IN

Analyst: CS

Date: 09-3013

Time: 1659

OUT

Analyst: CS

Date: 10/01/13

Time: 1204

Chlorine Res/ Check

Analyst:

Date: N/A 093013CS

Time:

Sample #	Sample Name	mls used	Large wells (wells fluoresce under uv light)	Small wells (wells fluoresce under uv light)	Total MPN	RPD	Chlorine Residual Check
	1- Blank	100	0	0	<1		
234435	2- Alligator Crk Fm 1107 1:10	10	45	11	139.6 =	140X10 = 1400	
234436	3- Alligator Fm 1102 1:10	10	49	30	613.1 =	610X10 = 6100	
234438	4- Geronimo Huber 1:10	10	22	2	30.9 =	31X10 = 310	
234437	5- Unnamed Trib 1:10	10	49	36	866.4 =	870X10 = 8700	
234434	6- Alligator Barbarossa 1:10	10	44	9	122.3 =	120X10 = 1200	
234483	7- Timmermann Spring	50	4	0	4.1 =	4X2 = 8	% RPD
234483	8- Timmermann Spring Dup	50	3	0	3.1 =	3	0.12%

N/A 10/01/13CS

Range: 30 - 80 Total Positive Wells (Small + Large Wells)

Results Entered By: 10/10/13CS