

## Watershed Assistance to Improve Water Quality in North Central Texas

Texas Water Resources Institute  
FY 08 Federal Appropriated Funds  
Project # 68-7442-10-496

Quarter no. 2 From 10/1/10 Through 12/31/10

### Progress in Meeting Project Milestones and Output Commitments

#### Task, Deliverables and Schedules

The Texas Water Resources Institute (TWRI) the Texas A&M University Spatial Sciences Laboratory (SSL), Texas AgriLife Research and Extension Center at Temple and Texas AgriLife Extension have been diligently working to complete project deliverables. Project efforts during this quarter focused finalizing stakeholder activities and input for the Cedar Creek WPP and continuing modeling activities and stakeholder education associated with the Eagle Mountain WPP.

TWRI continues to update the project web site: <http://nctx-water-tamu.edu> with water quality data, information related to project efforts, meeting updates, and contact information targeted to scientists and the general public. The website also serves to provide project oversight and financial reporting. Stakeholders are notified of website content updates via e-mail including meeting announcements, posting of presentations and watershed plan drafts.

Work associated with Eagle Mountain Reservoir and Richland Chambers Reservoir Watersheds computer modeling activities continue to progress and be refined to suit project leadership and stakeholder needs. These include sub-basin analysis of nutrient and sediment loadings as well as BMP implementation scenarios.

Emphasis during this reporting period was placed upon educational and outreach programming for adults and youth within the Cedar Creek and Eagle Mountain Watersheds. Activities including appearances at school events and weekend environmental festivals resulted in the exposure of 600 individuals to the concept of watersheds, watershed protection, and the name and boundaries of their home watershed.

The status of tasks, milestones and deliverables will be defined using the following terms:

Pending	Work has not started on the deliverable
Initiated	Work has started
Completed	The objectives were achieved and deliverables are finished
Deferred	Work has started, but further action is delayed pending other information, the completion of another objective, staff restraints, etc.
Ongoing	Work will continue throughout the term of the contract

Task 1      SWAT Modeling

Date	Status	Deliverables
1/1/07	Completed	1. Complete model calibration and validation for Cedar Creek Reservoir Watershed
1/1/08	Completed	2. Model calibration and validation for Eagle Mountain Reservoir Watershed
1/1/08	Completed	3. Model calibration and validation for Richland Chambers Reservoir Watershed

Comments:

- Modeling activities have been completed for Richland Chambers Reservoir Watershed. Data has been gathered and analyzed for computer modeling purposes. The model has been calibrated for flow and the research team is working to finalize model calibration for nutrients. This deliverable is 100 percent complete.
- SWAT model calibration for the Eagle Mountain watershed has been completed.
- Sensitivity analysis for BMPs in Eagle Mountain using SWAT model have been accomplished for the BMPs that were used for CEDAR CREEK as well as 3 additional BMPs to be analyzed

**Task 2 Economic Analysis**

Date	Status	Deliverables
4/1/08	Completed	1. Begin developing input data for economic analysis of alternative BMPs for Cedar Creek Reservoir and Watershed
10/1/08	Completed	2. Conduct economic analyses of alternative BMPs for Cedar Creek Reservoir Watershed
10/1/08	Deferred	3. Begin developing input data for economic analyses of Eagle Mountain Watershed
4/1/09	Deferred	4. Conduct economic analyses of alternative BMPs for Eagle Mountain Reservoir Watershed

Comments:

- A report entitled “Evaluating the Economics of Best Management Practices for Tarrant Regional Water District’s Cedar Creek Reservoir” is in final draft form and is awaiting comments from Tarrant Regional Water District and Dallas Urban Solutions Center.

**Task 3 Extension Education**

Date	Status	Deliverables
4/1/04	Completed	1. Develop generalized watershed management program bulletin

7/1/04	Completed	2. Conduct two-day watershed management training program for County Extension Agents and other selected resource personnel
10/1/05	Completed	3. Recruit Cedar Creek stakeholder committee
1/1/05	Completed	4. Develop Cedar Creek Watershed characteristics fact sheet
1/1/05	Completed	5. Construct demonstration trailer
4/1/05	Completed	6. Hold Cedar Creek public meeting on watershed characteristics and pollution problems
4/1/05	Completed	7. Recruit Eagle Mountain stakeholder committee
4/1/05	Completed	8. Conduct two-day training program on stream erosion for County Extension Agents and other resource personnel
4/1/05	Completed	9. Hold two Cedar Creek stakeholder committee meetings
7/1/05	Completed	10. Develop Eagle Mountain Watershed characteristics fact sheet
7/1/05	Completed	11. Conduct two Cedar Creek Extension education meetings on urban storm water quality, agricultural nonpoint source pollution prevention and wastewater
7/1/08	Initiated Completed Completed	12. Develop general fact sheets on: 1) Wastewater management options around lakes, 2) Urban storm water management, and 3) Lawn management
8/1/08	Initiated	13. Hold Eagle Mountain stakeholder committee meetings
8/1/08	Initiated	14. Hold Eagle Mountain public meeting on watershed characteristics and pollution problems

Comments:

- The Cedar Creek Watershed fact sheet is ready for submission to Ag Communications for Publishing. This deliverable is 95 percent complete
- The What is the Fate of your Rainfall? factsheet, curriculum guide and flip chart are complete
- The Water Quality factsheet is completed and ready for submission to Ag Communications. This deliverable is 95 percent complete
- Officials and volunteers with Texas AgriLife Research, Texas AgriLife Extension, and the Kaufman County Environmental Co-op continue various outreach activities in the Cedar Creek and Eagle Mountain Watersheds. Utilizing the demonstrational apparatus of the Stream Trailer, Enviroscope, and Rainfall Demonstrator audiences were provided instruction in stream erosion, point and non-point source pollution, watershed identity and watershed stewardship.
- Presentation of Texas AgriLife Extension's Stream Processes and Rain Garden workshop continues within targeted watersheds and adjacent counties.
- Texas Agrilife Research and Extension Center at Dallas served as a sponsor and partner for the Riparian Workshop held at Texas Christian University on October 12-13. Texas AgriLife Research provided demonstrations of educational apparatus for conference attendees and made presentations on watershed activates in the Cedar Creek and Eagle Mountain Watersheds.
- Aspects of the Cedar Creek Watershed and Eagle Mountain Watershed planning efforts where represented in presentations by Tarrant Regional Water District and Texas

AgriLife Research at the annual conference of the North American Lake Management Society Meeting November 4-7.

- Project team members continue to seek out opportunities to present the progress and findings with other water professionals through conferences and other speaking engagements.

**Task 4 Administration**

Date	Status	Deliverables
1/7/04	Completed	1. Quarterly Progress Report
4/7/04	Completed	
7/7/04	Completed	
10/7/04	Completed	
1/7/05	Completed	
4/7/05	Completed	
7/7/05	Completed	
10/7/05	Completed	
1/7/06	Completed	
4/4/06	Completed	
7/7/06	Completed	
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4/7/09	Completed	
7/7/09	Completed	
10/7/09	Completed	
1/7/10	Completed	
4/7/10	Completed	
7/7/10	Completed	
12/13/10	Completed	
1/14/10	Completed	

Comments:

- TWRI continually updates the Web site created specifically for the North Central Texas Water Quality Project. The Web site can be accessed at the following address:  
<http://nctx-water.tamu.edu>.

**Problems or Obstacles Encountered and Remedial Actions Taken**

The Economics team has experienced substantial delays in other obligations therefore not allowing them to commit to the time needed to complete activities required in this project. This problem will be resolved during the next quarter. Also, due to delays of internal contracting, funds have not been available to project personnel but activities have been ongoing.

#### Work Planned for Next Reporting Period

##### Task 1: SWAT Modeling

Refine the SWAT model for Eagle Mountain Reservoir and continue identifying BMPs for the watershed to meet water quality standards. Continue data collection and model development on Richland Chambers Reservoir.

##### Task 2: Economics

Refinement and drafting of the Economic Analysis of best management practices for Eagle Mountain Watershed. The report is expected to replicate the methodology used to develop the economic analysis for the Cedar Creek Watershed protection plan by selecting a number of viable best management practices for the Eagle Mountain Watershed, calculating phosphorus reduction in relation to construction and operation costs, and modeling a recommended management solution utilizing SWAT.

##### Task 3: Education

Conduct stakeholder and educational meetings in the Eagle Mountain Watershed. Continue conducting meetings to educate local landowners on Best Management Practices to implement on private property that can lessen soil erosion and water quality impairments as well as identify funding opportunities for these practices such as EQIP and others.

##### Task 4: Administration

TWRI will continue working with TRWD, SSL, Texas AgriLife Research and Texas AgriLife Extension Service in moving forward with project deliverables and reporting progress on a quarterly basis. Efforts will be made to publicize the project and raise awareness of water quality issues within the study area.

<b>FY 10 Funded Project</b>	<b>Current Balance (as of 9/30/10)</b>
Texas Water Resources Institute	\$18,955
Texas AgriLife Research and Extension Center - Dallas	\$73,893
Spatial Sciences Lab - TAMU	\$79,264
Texas AgriLife Extension – BAEN	\$86,334
Texas AgriLife Extension – AGECE	\$39,204
<b>TOTAL</b>	<b>\$297,650</b>