

Watershed Assistance to Improve Water Quality in North Central Texas

Texas Water Resources Institute
FY 08 Federal Appropriated Funds
Project # 68-7442-9-487

Quarter no. 4 From 7/1/10 Through 9/23/10

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 5838 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	Initiated	3. Model calibration and validation for Richland Chambers Reservoir Watershed
	Pending	4. Model calibration and validation for Benbrook Reservoir
	Pending	5. Model calibration and validation for Lake Bridgeport

Comments:

- SSL and Texas AgriLife Research and Extension Center at Temple have begun collection of water quality and flow data for the Richland Chambers Watershed.
- Baylor University conducted a sediment survey of Eagle Mountain Reservoir to verify storage capacity, flows and sediment size for the model. A survey of Richland Chambers Reservoir is scheduled to begin in August 2009. The survey has been postponed due to recent rainfall.
- 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.

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	Initiated	3. Begin developing input data for economic analyses of Eagle Mountain Watershed
4/1/09	Pending	4. Conduct economic analyses of alternative BMPs for Eagle Mountain Reservoir Watershed
4/1/09	Pending	5. Begin developing input data for economic analyses of Richland Chambers Reservoir Watershed
10/1/09	Pending	6. Conduct economic analyses of alternative BMPs for Richland Chambers Reservoir Watershed

Comments:

- A draft final report entitled “Evaluating the Economics of Best Management Practices for Tarrant Regional Water District’s Cedar Creek Reservoir” is in the process of being developed and will be completed next quarter.

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
4/1/09	Pending	15. Develop Richland Chambers Watershed characteristics fact sheet
7/1/09	Initiated	16. Conduct educational meetings in the Richland Chambers Watershed
10/1/09	Pending	17. Hold Richland Chambers stakeholder committee meetings
10/1/09	Pending	18. Hold Richland Chambers public meeting on watershed characteristics and pollution problems

Comments:

- Cedar Creek Watershed fact sheet development is in the intermediate stage. This deliverable will be completed once BMP runs have been made through the SWAT model and recommendations have been made on how to reduce loadings into the reservoir. This deliverable is 85 percent complete.
- Texas AgriLife Extension is working on the following publications 1) stream processes, 2) Where does the rainfall go?, 3) Utilizing rain gardens for stormwater abatement, 4) Vegetative filter strips, and 5) grassed waterways. These publications are 75 percent complete.
- Officials and volunteers with Texas AgriLife Research, Texas AgriLife Extension, and the Kaufman County Environmental Co-op engaged in a various outreach activities in the Cedar Creek and Eagle Mountain Watersheds. Utilizing the demonstrational apparatus of the Stream Trailer, Enviroscape, and Rainfall Demonstrator audiences were provided instruction in stream erosion, point and non-point source pollution, watershed identity and watershed stewardship. The breakdown of events is listed in the table below.

Event	Date	Attendance	Location
Environmental Club Crandall HS	4/8/2010	41	Crandall
Kaufman Rotary Club	4/12/2010	17	Kaufman
Spring Seminar	4/17/2010	60	Terrell
Heritage Jubilee	4/17/2010	406	Terrell
Talk'in Trash Cresky Elementary	4/19/2010	378	Forney
Kaufman County Arbor Day	4/21/2010	284	Kaufman
Talk'in Trash Athens ISD PreK-6	4/22/2010	1794	Athens
Talk'in Trash Eustace Primary & Intermediate	4/22/2010	775	Eustace
Talk'in Trash Criswell	4/23/2010	590	Forney
Heartland Fair	4/24/2010	70	Kaufman
Scurry-Rosser High School Science Day	5/6/2010	260	Scurry
Scurry/Rosser HS Earth Day Event	5/6/2010	269	Scurry/Rosser
Water Literacy Demo	5/7/2010	60	Forney
Texas Watershed Steward Workshop-Cedar Creek	5/12/2010	34	Seven Points
Kemp City Park Festival	5/21/2010	35	Kemp
Talk'in Trash Sunshine Pre-school	5/27/2010 & 5/28/2010	136	Kaufman
Forney Outdoor Kids Quest	6/6/2010	200	Forney
Library Youth Expo	6/8/2010	177	Terrell
Kaufman County Lions Club	6/11/2010	22	Kaufman
Talk'in Trash New Horizon Dayschool	6/11/2010	80	Kemp
Rainwater Harvesting Workshop	6/12/2010	40	Terrell
Wise County Water Camp	6/21/2010	40	Decatur
Summer Environmental Festival	6/26/2010	70	Terrell

- A workshop of the Texas Watershed Stewards, a program of Texas AgriLife Extension was held of May 12, 2010 in Seven Points in the Cedar Creek Watershed. The event provided training in watershed definition, function, planning, and policy.

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	
10/7/06	Completed	
1/7/07	Completed	
4/7/07	Completed	
7/7/07	Completed	
10/7/07	Completed	
1/7/08	Completed	
4/7/08	Completed	
7/7/08	Completed	
10/7/08	Completed	
1/7/09	Completed	
4/7/09	Completed	
7/7/09	Completed	
10/7/09	Completed	
1/7/10	Completed	
4/7/10	Completed	
7/7/10	Completed	
10/7/10		2. Final Report

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 Spatial Sciences Laboratory and Texas AgriLife Research and Extension Center at Temple have been working closely with Texas Water Resources Institute (TWRI) towards successful completion of project deliverables.

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 Cedar Creek and Eagle Mountain Watersheds. 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 Extension Center at Temple 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.

FY 09 Funded Project Year 1	Current Balance (as of 7/7/10)
Texas Water Resources Institute	\$1,304
Texas AgriLife Research and Extension Center - Dallas	\$9,922
Spatial Sciences Lab - TAMU	\$144
Texas AgriLife Extension – BAEN	\$36,778
Texas AgriLife Extension – AGECE	\$15,714
Alan Plummer and Associates Inc.	\$8,800
TOTAL	\$72,662

