

Watershed Assistance to Improve Water Quality in North Central Texas

Texas Water Resources Institute
FY 08 Federal Appropriated Funds
Project # 69-7442-8-805

Quarter no. 3 From 4/1/09 Through 7/1/09

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 continuing modeling activities and stakeholder education. The SSL and Texas A&M University Department of Agricultural Economics have completed efforts to calibrate and validate management/BMP scenarios through the SWAT model for Cedar Creek Reservoir in search of the appropriate combination of management practices necessary to reduce nutrient and sediment loadings.

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 management for the project. Updates to the content of the project website including meeting announcements, posting of meeting presentations, and watershed plan drafts are announced to stakeholders via e mail.

Work associated with Eagle Mountain Reservoir and Richland Chambers Reservoir Watersheds modeling activities will continue in the next quarter. Additionally, the Texas Watershed Steward program will be presented in the Eagle Mountain and Cedar Creek watersheds in July and August respectively. This one day workshop provides an overview of watershed composition, water quality issues, water policy, and management practices. The program is available to the public at no charge.

The Texas A&M University Economics team has developed an economic model that will quantify the cost effectiveness of selected BMP scenarios and continue to refine outputs. Extension specialists have continued with stakeholder and work group meetings in an effort to finalize the Cedar Creek WPP by September 2009.

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 initiated. Model validation will follow.

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 project team meeting was held February 26th to discuss project activities and results to date.
- A project team meeting was held June 15th to discuss project activities, results and to plan for upcoming meetings.

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	12. Develop general fact sheets on:
	Completed	1) Wastewater management options around lakes,
	Completed	2) Urban storm water management, and
	Completed	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	Pending	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.
- Texas AgriLife Extension conducted a multi-county (Kaufman, Van Zandt, Rockwall and Henderson) short course on December 19, 2008 in Kaufman, TX. The one day event targeted cattle producers in the area and a portion of the program focused on stocking rates, agricultural BMPs and associated benefits, nutrient management, control of erosion, etc. A presentation was made on the availability of funds and assistance from NRCS and the TSSWCB related to EQIP and local grant funds to support Ag BMPs on producer lands.

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		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>
- TWRI and the Texas AgriLife Research and Extension Urban Solutions Center conducted a stakeholder meeting in the Cedar Creek watershed on February 5, 2009. Topics of discussion focused on stakeholder feedback received, SWAT modeling results related to BMP analysis of model runs at the sub-watershed scale, a discussion of funding opportunities and setting milestones.
- TWRI and the Texas AgriLife Research and Extension Urban Solutions Center conducted a stakeholder meeting in the Eagle Mountain watershed on January 21, 2009. Topics of discussion focused on watersheds in general, current water quality of Eagle Mountain Lake, overviews of the SWAT and WASP models, types of BMPs, a stakeholder survey on BMPs, WWTP study results and the 9 elements of a WPP.

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

Finalize running different scenarios with SWAT/QUAL2E/WASP output looking at the combination that provides the least cost while still achieving the necessary load reductions.

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.

Conduct workshop of Texas Watershed Steward Program for Cedar Creek and Eagle Mountain Watersheds. This program of Texas AgriLife Extension Service provides a single day training to interested citizens regarding watershed literacy, water quality issues, and best management practices. Project leadership plans to use this as an opportunity to recruit stakeholders to assist with implementation of education and outreach plans. It is anticipated that these workshops will function as a general outreach to the public regarding watershed awareness and serve as a recruiting tool for stakeholders for the development and implementation of the Cedar Creek and Eagle Mountain plans.

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 08 Funded Project Year 1	Current Balance (as of 7/31/09)
Texas Water Resources Institute	\$882
Texas AgriLife Research and Extension Center - Dallas	\$11,526
Spatial Sciences Lab - TAMU	\$0
Texas AgriLife Extension – BAEN	\$23,972
Texas AgriLife Extension – AGECE	\$37,794
TOTAL	\$74,174