

**Watershed Assistance to Improve Water Quality in North Central Texas**  
Texas Water Resources Institute  
FY 03 Federal Appropriated Funds  
Project # 03-60768

Quarter no. 2 From 1/8/04 Through 4/7/04

**Progress in Meeting Project Milestones and Output Commitments**

Task, Deliverables, and Schedules

The Texas Water Resources Institute (TWRI) along with the Texas A&M University Spatial Sciences Laboratory (SSL), Blackland Agricultural Research and Extension Center (BAREC) and Texas Cooperative Extension (TCE) have been diligently working to complete project deliverables. Project efforts during the second quarter focused upon modeling activities and education. The SSL and BAREC have collaborated on efforts to interact SWAT and QUAL2E models to predict loadings within Cedar Creek Reservoir. TCE has been working to develop generalized and watershed specific bulletins relating to water quality for the project area. TWRI has developed a Web site containing water quality information, specifically related to project efforts, for scientists and the general public.

In looking forward to the next quarter, SWAT modeling activities should be completed for Cedar Creek reservoir and watershed. At this point work can begin on looking at and developing BMP scenarios to correct these measures. The economics team will begin measuring the cost effectiveness of different BMP scenarios in order to ascertain the most cost efficient measures. TCE specialists will conduct Extension trainings for agents and stakeholder groups and finalize Cedar Creek publications.

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
1/1/04	Initiated	1. Complete model calibration and validation for Cedar Creek Reservoir
1/1/05	Pending	2. Finish calibration and validation for Eagle Mountain Reservoir
9/1/05	Pending	3. Collect GIS data on wastewater treatment plant discharge required for SWAT modeling of Eagle Mountain and Bridgeport Watersheds

Comments:

- The Spatial Sciences Lab (SSL) in cooperation with Blackland Agricultural Research and Extension Center continue to calibrate and validate the SWAT model for Cedar Creek Reservoir. Unexpected delays have occurred with regard to modeling activities in making parameters for the varying models compatible. The process has further been hindered as specialists are in the process of updating the 2001 land use map of the study area using satellite imagery to make the model as up-to-date as possible. This deliverable is 80% complete.

**Task 2 Economic Analysis**

Date	Status	Deliverables
9/1/04	Pending	1. Begin developing input data for economic analysis of alternative BMPs for Cedar Creek Reservoir and Watershed
4/1/05	Pending	2. Conduct economic analyses of alternative BMPs for Cedar Creek Reservoir Watershed
10/1/05	Pending	3. Begin developing input data for economic analyses of Eagle Mountain watershed

Comments:

- Economic analysis can not begin until modeling efforts are complete.

**Task 3      Extension Education**

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

**Comments:**

- Generalized fact sheet 90% complete, expected submission for review and publication is April 15, 2004.
- Progress has been made to plan 2-day watershed management training. May need to defer this training until August 2004 to arrange facilities and to coincide with research component.
- Cedar Creek watershed fact sheet development is in the initial stages – 20% complete.
- Stream demonstration trailer is 90% complete. Educational materials for the trailer are under development. Project has several requests to use the trailer for youth educational events in the Fort Worth area in the summer of 2004.
- Completed meeting with agricultural producers in the Cedar Creek watershed concerning watershed characteristics and concerns about water quality in Cedar Creek (97 attendees). Although this objective completed per project requirements, other meetings may be necessary for an urban audiences.

**Task 4 Administration**

Date	Status	Deliverables
1/7/04	Completed	1. Quarterly Progress Reports
4/7/04	Completed	Quarterly Progress Report
7/7/04	Ongoing	
10/7/04	Ongoing	
1/7/05	Ongoing	
4/7/05	Ongoing	
7/7/05	Ongoing	
10/7/05	Ongoing	2. Final Report

Comments:

- TWRI created a one-page fact sheet providing an overview of the project, including objectives, components and collaborators. The fact sheet identifies project needs and goals and will be used to gain stakeholder involvement and publicize project activity.
- The institute created an Internet Web site specifically for the North Central Texas Water Quality Project. The Web site can be accessed at the following address: <http://nctx-water.tamu.edu>
- On February 11, 2004 project participants met at Cedar Creek Reservoir to present the status of deliverables and discuss objectives for the upcoming quarter.

## Problems or Obstacles Encountered and Remedial Actions Taken

The research team has had difficulty in adapting the SWAT and QUAL2E models. The challenge has been in establishing compatible parameters and coefficients for the varying models. Numerous meetings occurred both by teleconference and in person to postulate possible solutions. Great strides have been made by the modeling team to configure an accurate up-to-date model, which patterns both the watershed and the reservoir simultaneously for nutrient and sediment loading. SWAT modeling should be completed in the near future.

## Work Planned for Next Reporting Period

### Task 1: SWAT Modeling

Final calibration and validation of the SWAT model with input parameters from other modeling sources.

### Task 2: Economics

Begin collecting information and developing input data for economic analysis of alternative BMPs for Cedar Creek Reservoir and Watershed

### Task 3: Education

Finalize watershed bulletins relating to Cedar Creek Watershed. Begin the process of recruiting the Cedar Creek Watershed stakeholder group. Complete construction on the demonstration trailer for summer training courses. Continue to finalize plan for TCE agent training on water quality impairment issues.

### Task 4: Administration

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