

**Texas A&M AgriLife
Texas Water Resources Institute**

**Texas Watershed Planning Short Course Project
EPA Clean Water Act §319(h) Grant
TCEQ Agreement No. 582-7-77049**

Quarter no. 5 From 3/1/08 Through 5/31/08

I. Abstract

This quarter, activities focused on final preparation for the first Texas Watershed Planning Short Course. The final agenda, five assignments, certificates of completion, pre- / post-course exam, participant survey, course notebook, course CD, and other materials for the course were completed this quarter. Travel arrangements were made for the instructors as requested. Registration for the course opened on February 8th and closed on April 29th. TWRI coordinated with the Mayan Ranch to ensure all instructors and participants were registered. The Watershed Planning Short Course Webpage (<http://watershedplanning.tamu.edu/>) has been visited by a total of 496 visitors since it went online. It will continue to be updated as new material is developed for the course. Next quarter, the first short course will be delivered, the second short course will be scheduled, and the short course program and materials will be adjusted as needed according to the results of the participant survey and recommendations of the planning team.

II. Overall Progress and Results by Objective and Task

OBJECTIVE 1: PROJECT COORDINATION AND ADMINISTRATION

Task 1.1: Team Organization – TWRI will assemble a team made up of university, TCEQ, TSSWCB, EPA, TCE and Texas River Systems Institute personnel, along with EPA trained Watershed Coordinators, to guide the development and delivery of the Texas Watershed Planning Short Course to water professionals throughout Texas. This team will meet quarterly to discuss project status, provide input, and coordinate project activities. Quarterly meetings will consist of face-to-face meetings, teleconferences, and TTVN meetings as appropriate.

The following actions have been completed during this reporting period:

- a. No team meetings were held this quarter; however, meetings with individual team members were held as follows:
 - TWRI met with Texas AgriLife Extension Service on March 7 and 18 as well as May 14 and 21 to coordinate project activities.
 - TWRI met with Texas AgriLife Extension Service and Texas AgriLife Research on April 4 to discuss the LDC presentation and assignment.
 - TWRI met with TIAER and Texas AgriLife Extension Service on April 29 to discuss the Data Gathering presentation.

50% Complete

Task 1.2: Project Coordination – TWRI will coordinate the project with other ongoing watershed efforts including, but not limited to the Southern Region Water Quality Coordination Project, TSSWCB Wharton Regional Office Watershed Coordination Project, TCE Watershed Stewardship Program, and TCEQ TMDL Program.

The following actions have been completed during this reporting period:

- a. Texas AgriLife Extension Service (Extension), formerly TCE, is a member of the planning team and has been subcontracted to assist with the Short Course, ensuring coordination with the Watershed Stewardship Program and Southern Region Water Quality Coordination Project.
- b. TSSWCB is a member of the planning committee and has participated in all planning team meetings. Extension and TWRI regularly participate in the TSSWCB Wharton Regional Office Watershed Coordination Project, further ensuring coordination.
- c. TCEQ TMDL Program personnel are members of the planning committee and have participated in all planning team meetings.

50% Complete

Task 1.3: Quarterly Progress Reports – TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TCEQ, TSSWCB, EPA, and all members of the team. QPRs will be submitted by the 15th of the month following each state fiscal quarter for incorporation into the Grant Reporting and Tracking System (GRTS). The Reports are to include (1) Status of deliverables for each objective and (2) Narrative description in Progress Report format.

The following actions have been completed during this reporting period:

- a. TWRI submitted Year 1, Quarter 4 Progress Report on March 15, 2008.

50% Complete

Task 1.4: Project Oversight – TWRI Project Manager will provide technical and fiscal oversight to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget. With TCEQ Project Lead authorization, TWRI may secure the services of contractors as necessary. Project oversight status will be provided with the Quarterly Progress Status Reports. In addition, TWRI will attend meetings with project manager and other meetings, as needed, to review project status, deliverables, etc.

The following actions have been completed during this reporting period:

- a. Subcontracts were initiated with the Texas Institute for Applied Environmental Research (TIAER) at Tarleton State and the River Systems Institute (RSI) at Texas State to secure assistance with development and delivery of the Short Course. As of 5/31/08, the following expenditures had been reported:
 - TIAER = \$0 spent through 5/31/08
 - RSI = \$0 spent through 5/31/08

- b. Subaccounts were initiated with Texas AgriLife Research (Biological and Agricultural Engineering Department) and Texas AgriLife Extension Service (Soil and Crop Sciences Department) to secure assistance with development and delivery of the Short Course. As of 5/31/08, the following expenditures had been reported:

- Texas AgriLife Research = \$10,667
- Texas AgriLife Extension Service = \$0

50% Complete

Task 1.5: Reimbursement Forms – TWRI will submit appropriate Reimbursement Forms (2 copies), purchase vouchers (269a, and 269a 1-4) and Small and/or Minority Owned Business Report (where applicable) by the last day of the month following each state fiscal quarter.

The following actions have been completed during this reporting period:

- a. The total federal funds expended as of the end of February 2008 were \$58,748.52 (31% of total federal funds available). The next invoice, covering expenses from December 2007 through February 2008 will be submitted in June 2008.

31% Complete

Task 1.6: Contractor Evaluation – TWRI will participate in Contractor Evaluation.

The following actions have been completed during this reporting period:

- a. The Contractor Performance Evaluation Report for year 1 was submitted to TCEQ on September 10, 2007 covering the period of 2/15/07 – 8/31/07.

33% Complete

OBJECTIVE 2: DEVELOP TRAINING MATERIALS AND EDUCATIONAL PROGRAM FOR WATERSHED PLANNING SHORT COURSE

Task 2.1: Compile and Summarize Existing Programs – TWRI will collect and compile information about existing training programs.

The following actions have been completed during this reporting period:

- a. Information on existing programs was compiled and discussed with the planning team during the first and second quarters. No further work is planned.

100% Complete

Task 2.2: Develop Training Program – As directed by the TCEQ and Project Team, TWRI will modify existing training programs, such as the EPA Watershed Training Materials and those found as a result of subtask 2.1, to fit the needs of Texas professionals.

The following actions have been completed during this reporting period:

- a. The Short Course agenda for June 2-6, 2008 was finalized (attached).
- b. Five assignments were developed for the June 2-6, 2008 Short Course (attached).
- c. A certificate of completion was developed, printed, and framed for each participant.

90% Complete

Task 2.3: Watershed Training Webpage – TWRI will develop (Months 1-3), host, and maintain (Months 3-36) an internet Web site for information sharing and use by short course participants.

The following actions have been completed during this reporting period:

- a. TWRI has developed the Website (<http://watershedplanning.tamu.edu/>) for information sharing and use by short course participants.
- b. The website was viewed by 70 unique visitors in March 2008.
- c. The website was viewed by 109 unique visitors in April 2008.
- d. The website was viewed by 124 unique visitors in May 2008.
- e. To date, the website has been viewed by a total of 496 unique visitors.

50% Complete

OBJECTIVE 3: CONDUCT WATERSHED PLANNING SHORT COURSE AND OTHER WATERSHED TRAINING

Task 3.1: Organize Short Course Events – TWRI will identify key speakers for training, make all arrangements for facilities, advertise the short course, conduct registration, and make all travel arrangements for speakers. Travel for speakers will be fully paid for through project funds.

The following actions have been completed during this reporting period:

- a. The first *Watershed Planning Short Course* is set for June 2-6, 2008.
- b. Sixteen speakers were identified to assist with the training. Emails were sent to the instructors on March 11, March 26, April 9, April 23, April 28, May 6, May 8, May 13, May 20, and May 22 to provide them pertinent information on the short course and to obtain presentations, bios, and questions for the pre- / post-course exam.
- c. TWRI coordinated with the Mayan Ranch to ensure all registered participants and instructors had room reservations.
- d. TWRI assisted Brad Lamb, Randy Rush, Charlie MacPherson, and Tom Davenport with travel arrangements as requested.
- e. Registration reminders were sent out on March 3, 18 and 31.
- f. The class filled on April 29, 2008.
- g. Participants were sent emails regarding the short course on May 12, 29 and 30.
- h. On May 30, all materials including the short course notebook and CD were finalized.

35% Complete

Task 3.2: Deliver Short Course – TWRI will facilitate the delivery of the Texas Watershed Planning Short Course to 120 water professionals in Texas and the surrounding region, providing certifications to participants. A \$350 registration fee will be charged to short course participants. As funding and need allow, additional offerings of the course will be considered.

The following actions have been completed during this reporting period:

- a. The first course will be held June 2-6, 2008.

0% Complete

Task 3.3: Organize Applied Fluvial Geomorphology Short Course Event – TWRI will coordinate with Wildland Hydrology to provide Applied Fluvial Geomorphology Short Course to 40 water professionals in Texas. A registration fee of \$500 will be charged to short course participants.

The following actions have been completed during this reporting period:

- a. Forty-four participants from TPWD, TCEQ, TXDOT, TFS, Extension, and TWRI participated in the AFG Short Course held on January 28-February 1, 2008.

100% Complete

Task 3.4: Develop and Administer Questionnaire – TWRI will oversee the development of a questionnaire to gauge the knowledge gained by the course participants. This questionnaire will be administered at the beginning and end of each short course to demonstrate the course's effectiveness and identify areas of the course needing adjustment.

The following actions have been completed during this reporting period:

- a. Evaluations were developed for participants to provide input on the course (attached).
- b. A pre- / post-course exam was developed to gauge knowledge gained by participants.
- c. Results of the Evaluation and Pre- and Post- Course Exams administered June 2-6 will be summarized in next quarter's QPR.

33% Complete

OBJECTIVE 4: SUBMIT FINAL REPORT

Task 4.1: Draft Report

The following actions have been completed during this reporting period:

- a. No activity.

0% Complete

Task 4.2: Final Report

The following actions have been completed during this reporting period:

- a. No activity.

0% Complete

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

- Presentations were not received from all instructors in time to include them in the short course materials. They will be emailed to participants upon completion of the course.

IV. Projected Work for Next Quarter

- Prepare and submit Year 2, Quarter 1 Progress Report
- Deliver the first Texas Watershed Planning Short Course
- Summarize all surveys received at the Short Course
- Grade all pre- and post-course exams to assess knowledge gained
- Conduct Planning Team Meeting
- Make needed adjustments to Short Course agenda & materials
- Schedule the second short course
- Open Registration for second short course
- Update Webpage as materials are developed
- Make arrangements for second short course

Texas Watershed Planning Short Course

Course Agenda – June 2-6, 2008

Monday, June 2, 2008

- 11:00 – 1:00 pm **Registration (Distribute Knowledge Assessment)**
A pre-course examination will determine the knowledge level of each participant prior to going through the course. The pre-course exam results will be compared to the post-course exam results to assess course impact/knowledge gained.
- 12:00 – 12:45 pm **Lunch**
- 1:00 – 1:45 pm **Introduction..... Wagner**
This session will provide the group (1) the opportunity to introduce themselves and the watersheds they are working in, (2) information on facilities, (3) an overview of the course, its purpose and structure and (4) a brief discussion of *The Best Watershed-Based Plans in the Nation* and its implications on the training. It will also provide an introduction to the watershed planning process as described in Chapter 2 of EPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters (Handbook)* and briefly discuss why plans should be developed, how watershed protection plans (WPPs) interact with other water resources planning processes, and background on watershed plans/planning.
- 1:45 – 2:45 pm **Nine Elements of a Watershed Protection Plan Lehman**
Provide an in-depth overview of the Nine Elements to be included in a WPP as outlined in Chapter 2 of the *Handbook*.
- 2:45 – 3:30 pm **State and Federal Perspectives on WPPs.....Rush/Wendt**
This session will describe (1) the goals and importance of WPPs, (2) how WPPs fit into state and federal objectives and interact with other state and federal programs, and (3) current issues affecting watershed planning efforts.
- 3:30 – 3:45 pm **Break**
- 3:45 – 4:30 pm **EPA Watershed Plan Builder Lehman**
This session will provide a tutorial on the EPA Watershed Plan Builder.
- 4:30 – 5:00 pm **Assignment 1: Utilize EPA Watershed Plan Builder**
The class will be split up into 10 teams to utilize the EPA Watershed Plan Builder to develop a WPP outline for various watersheds in the state.
- 5:00 – 6:15 pm **Working with Stakeholders to Move the Process ForwardMacPherson**
Stakeholders form the backbone of your watershed planning effort. Learn tips on how to get off on the right foot and keep the energy going throughout your watershed planning and implementation program. Topics to be addressed include: determining who needs to be involved, making meetings count, diffusing conflict, making decisions using a consensus-based approach, and sustaining the stakeholder group. This session will focus on Chapter 3 of the *Handbook*.
- 6:45 pm **Dinner**

Tuesday, June 3, 2008

- 8:00 – 8:45 am **Breakfast**
- 8:45 – 9:45 am **Using Outreach to Develop & Implement WPPs - Element E.....MacPherson**
Outreach is a powerful tool to get stakeholders involved early in the planning process, promoting behavior change in the watershed, enhancing the implementation of your management strategies in the watershed. Learn tips and tools to conduct effective outreach without breaking the bank. This session will focus on Chapter 12.2 of the *Handbook*.
- 9:45 – 10:15 am **Partnership Building Experiences in Plum Creek..... Dictson**
Experiences in Plum Creek watershed with getting local involvement, announcing meetings, setting up the committee and subcommittees, publicizing the effort, what needs to be discussed/decided at each meeting, and timelines will be discussed. Sample invitation letters, ground rules, press releases, and other materials will be provided.
- 10:15 – 10:30 am **Break**
- 10:30 – 11:30 am **Communicating to Diverse Audiences to Achieve Your GoalsMacPherson**
There is no one-size fits all approach. This session will explore various strategies and techniques to translate technical data into useful information.
- 11:30 – 11:45 am **Web-Based Tools for Watershed Assessment & Management Lehman**
Web-based tools available from EPA to support watershed planning will be reviewed.
- 11:45 – 12:00 pm **Turn In and Discuss Assignment 1**
The class will briefly discuss (1) their experience using the Watershed Plan Builder, (2) improvements needed, (3) missing links, and (4) utility of the Plan Builder.
- 12:00 – 12:45 pm **Lunch**
- 1:00 – 1:30 pm **Defining the Scope of the WPP.....Wendt**
This session will discuss identifying issues of concern, developing preliminary goals, and selecting indicators of environmental conditions as outlined in Chapter 4 of the *Handbook*.
- 1:30 – 3:00 pm **Gathering data to assess your watershed..... Dictson/Hauck/Wagner**
What data do you need? Where do you find the data? How do you get info from TCEQ and other agencies? This session will examine (1) materials from Chapters 5-6 of the *Handbook*; (2) how GIS may be used for watershed analysis, source identification and watershed characterization; and (3) sources of data in Texas and how best to obtain it.
- 3:00 – 3:15 pm **Break**

- 3:15 – 4:00 pm **Analyzing Data to Characterize Your Watershed..... Kenimer**
 How do you analyze your data? What tools are available? Is modeling needed? This session will concentrate on materials from Chapters 7 and 8.1-8.2 of the *Handbook* in order to provide the group an understanding of the methods/options available for analyzing watershed data and estimating pollutant loads. Simplistic methods for calculating loads and assessing sources will be presented.
- 4:00 – 4:30 pm **Expectations for Element A Lamb**
 The expectations for Element A will be reviewed and discussed to provide the group an understanding of what is necessary to identify causes and sources of water quality impairments and concerns.
- 4:30 – 6:00 pm **Q & A**
 This session provides participants the opportunity to discuss issues and questions regarding partnership building and watershed characterization with other watershed coordinators, EPA, TCEQ and TSSWCB.
- 6:45 pm **Dinner**

Wednesday, June 4, 2008

- 8:00 – 8:45 am **Breakfast**
- 8:45 – 9:30 am **Overview of Models for Estimating Pollutant Loads & ReductionsHauck**
 If modeling is needed, what models are available and how do you select a model? This session will present materials from Chapter 8.3-8.5 of the *Handbook* to give the group an overview of the models available, expectations for what each model can deliver (i.e. what you can and cannot get from them), costs, and factors to consider when selecting models (i.e. timelines and data needs for complex watershed models).
- 9:30 – 10:15 am **Spreadsheet/Time Variable Models Kenimer**
 This session will demonstrate how to use load duration curves (LDC) to determine needed pollutant load reductions and assess potential sources of the pollutants. The use of simple mass balance and spreadsheet models will also be reviewed and demonstrated for use in assessing watershed pollutant loadings, reductions needed, and sources. Chapter 8 of the *Handbook* will be highlighted.
- 10:15 – 10:30 am **Break**
- 10:30 – 11:15 am **Assignment 2: Estimating Pollutant Loads For Plum Creek Using LDCs**
 The class will be split into 10 teams for this exercise. Flow and concentration data will be provided to each team to develop LDCs for Plum Creek and assess bacteria and nutrient reductions needed. Results will be discussed and compared to the findings of the Plum Creek WPP.
- 11:15 – 12:00 pm **Perspectives on Monitoring, Modeling and Decision Making Harmel**
 An overview of the difficulties of data collection, the uncertainty in collected data, and how to use data in modeling and decision making will be discussed.

12:00 – 12:45 pm	Lunch
12:45 – 1:30 pm	Setting Goals & Identifying Load Reductions Needed Miranda This session will discuss refining goals, identifying management objectives, and determining load reductions needed as described in Chapter 9 of the <i>Handbook</i> .
1:30 – 2:00 pm	Expectations for Element B Wendt The expectations for Element B will be reviewed and discussed to provide the group with an understanding of the level of detail and effort needed to determine ‘acceptable’ pollutant loadings, and whether or not load reductions are needed to reach acceptable levels.
2:00 – 2:30 pm	Pollutant Fate and Transport Mechanisms Kenimer Knowing the fate and transport mechanisms of the pollutant(s) being addressed will help decision-makers select the most appropriate BMPs for their watershed. This session will discuss the fate and transport mechanisms for major pollutants encountered in the state and what types of practices are most appropriate for addressing them.
2:30 – 3:00 pm	Agricultural NPS Measures and WQMPs Wagner/Wendt Agricultural NPS measures in Texas are typically implemented through the SWCDs, TSSWCB, and NRCS as part of a Water Quality Management Plan. This session provides an overview of (1) agricultural BMPs and these plans, (2) how to develop a preliminary list of agricultural BMPs to address the issues of concern, (3) finding information on the effectiveness of agricultural BMPs, and (4) estimating BMP implementation costs.
3:00 – 3:15 pm	Assignment 3: Select Agricultural NPS BMPs The class will be split into 10 teams for this exercise. Using the NRCS Field Office Technical Guide, each team will quickly select BMPs to address a variety of water resource issues and sources. Results will be discussed as time permits.
3:15 – 3:30 pm	Break
3:30 – 4:15 pm	Urban NPS Measures Davenport This session will provide an overview of (1) urban NPS measures, (2) how to develop a preliminary list of urban BMPs to address the issues of concern, (3) finding information on the effectiveness of urban BMPs, (4) estimating BMP implementation costs; and (5) stormwater permitting..
4:15 – 4:45 pm	Wastewater Treatment Systems Miranda This session provides an overview of (1) wastewater treatment systems (WWTFs and OSSFs), (2) their effectiveness in removing various pollutants, (3) how to incorporate them into voluntary WPPs, (4) point source permitting issues, and (5) the costs of implementing these measures.
4:45 – 5:30 pm	Other Approaches to Managing Pollutant Sources Thornton/Rast In addition to conventional treatment methods, other options exist for achieving water quality protection and improvement. Among these are wetland development, riparian protection, and urban planning and zoning. This session will discuss these and other approaches and how to incorporate them into WPPs.

5:30 – 6:15 pm **Prioritizing and Selecting Management Measures** **Thornton/Rast**
This session will discuss evaluating and selecting management practices developing decision criteria, summarizing evaluation results for presentation to stakeholders, obtaining feedback from stakeholders, ranking preferences, and selecting the final management strategy as described in Chapters 10-11 of the *Handbook*.

6:45 pm **Dinner**

Thursday, June 5, 2008

8:00 – 8:45 am **Breakfast**

8:45 – 9:15 am **Overview and Expectations for Element C** **Rush**
This session will provide a discussion of expectations for Element C as well as steps to select management practices as described in Chapter 10 of the *Handbook*.

9:15 – 10:00 am **Targeting Critical Areas and Scheduling Implementation** **Davenport**
To achieve the most effective and immediate benefit, BMP implementation must be targeted to the most critical areas. This session discusses the targeting of control measures and the importance of this effort to the ultimate success of the WPP. This session also discusses scheduling implementation efforts (Chapter 12.3 of the *Handbook*) as described in the final management strategy.

10:00 – 10:15 am **Break**

10:15 – 11:15 am **Assignment 4: Evaluate Elements A, B and C of selected WPP**
The class will be split into 10 teams to analyze Elements A, B, and C of the Yellow Bank Creek Watershed Management Plan using EPA's Nine Elements Evaluation Sheet.

11:15 – 12:00 pm **Developing Interim Milestones & Criteria to Measure Progress** **Davenport**
This component of the WPP is where the rubber meets the road. It is here that you define in realistic terms how you will determine (1) if you are on track and making progress or not, (2) how/when you evaluate your progress, and (3) what to do if watershed improvements are not on track. This key session will discuss developing interim measurable milestones (Element G) and establishing a set of criteria to measure progress (Element H) toward meeting water quality standards and other goals as presented in Chapter 12.4-12.5 of the *Handbook*.

12:00 – 12:45 pm **Lunch**

12:45 – 1:45 pm **Designing & Implementing Effectiveness Monitoring – Element I** **Hauck**
This session will provide guidance on developing Element I as described in Chapter 12.6 of the *Handbook*. Selecting an appropriate experimental design that incorporates previous and ongoing monitoring efforts will be discussed.

- 1:45 – 2:15 pm **Using Volunteer Monitoring For Assessment and Outreach.....Mendelman**
This session provides an overview of Texas Watch, a statewide network of volunteers, partners, and institutions that promote a healthy and safe environment through education, data collection, and community action. This session will describe how voluntary efforts such as Texas Watch may be a valuable component to any WPP.
- 2:15 – 2:45 pm **Texas Watershed Steward Program Peterson**
This session provides an overview of the Texas Watershed Steward Program, a science-based, watershed education designed to help citizens identify and take action to address local water quality issues. Incorporation of this program into WPP efforts empowers stakeholders by providing them with the knowledge to make informed decisions about water resources.
- 2:45 – 3:00 pm **Break**
- 3:00 – 4:00 pm **Financing Watershed Implementation Jarocki**
This session will provide an overview of Plan2Fund, Plan2Fund OPT, and the Directory of Watershed Resources developed by the Environmental Finance Center (EFC) for helping implement watershed plans.
- 4:00 – 5:30 pm **Assignment 5: EFC Software Demonstration / Blue River Basin Case Study**
The Blue River Basin will be used as a case study to demonstrate EFC Software.
- 5:30 – 6:15 pm **Expectations for Element DRush/Wendt**
This session will discuss expectations for Element D which describes the financial and technical assistance needs and identifies the sources/authorities that will be relied on for implementation as described in Chapter 12.7 of the *Handbook* (Element D). Funding sources in Texas will be discussed along with match requirements and the mechanisms for requesting it.
- 6:45 pm **Dinner**

Friday, June 6, 2008

- 8:00 – 8:45 am **Breakfast**
- 8:45 –10:15 am **Assignment 5: EFC Software Demonstration / Blue River Basin Case Study**
The class will complete the Blue River Basin case study using Plan2Fund, Plan2Fund OPT, and the Directory of Watershed Resources.
- 10:15 – 10:30 am **Break**

10:30 – 11:40 am

Putting It All Together – Then What? Wagner/Wendt

This session will discuss assembling a WPP, gaining stakeholder approval, submitting the WPP for state and federal review, developing an evaluation framework and devising a method for tracking progress as described in Chapter 12.8-12.11 of the *Handbook*. Also to be discussed is what to do once the WPP is ready for implementation as described in Chapter 13 of the *Handbook*, including implementation strategies, adaptive management, and what you can do to ensure the long-term sustainability of your WPP. Options such as developing 501(c)(3) organizations will be reviewed.

11:40 – 12:00 pm

Knowledge Assessment/Course Evaluation

A post-course examination will be distributed and the results compared to the pre-course exam in order to determine course impact and knowledge gained. A course evaluation will also be distributed to gain feedback on how to improve the course.

12:00 pm

Adjourn

Certificates will be distributed as the class turns in their post-course exam and course evaluations.

Assignment 1

1) Split up into your respective teams.

2) The Team Leaders and Assigned Watersheds are as follows:

Team	Team Leader	Assigned Watershed
1	Jason McAlister	Lampasas River
2	Jay Bragg	Lake Granger
3	Matt Berg	Lake Granbury
4	Bud Solmonsson	Dickinson Bayou
5	Phyllis Dyer	Buck Creek
6	Jennifer Delk	Leon River
7	David Waidler	Eagle Mountain Lake
8	Om Chawla	Bastrop Bayou
9	Beverly Allen	Caddo Lake
10	Lucas Gregory	Carter Creek

3) Enter the Watershed Planning Website (<http://iaspub.epa.gov/watershedplan>)

4) Click on “Watershed Plan Builder”

5) Click “Enter the Watershed Plan Builder”

6) Fill in all required fields for Plan Name for your assigned watershed. List the Team Leader as the primary contact. Click Next.

7) Use the map tool to identify the location of your assigned watershed. Click Next.

8) Fill in all required fields for Plan Drivers in your assigned watershed then click on Next.

9) Fill in all required fields for Activities in your assigned watershed then click on Next.

10) Fill in all required fields for Issues/Concerns in your assigned watershed then click on Next.

11) Fill in all required fields for Pollutants in your assigned watershed then click on Next.

12) Add all team members (besides the Team Leader) as Stakeholders. Click Next.

13) Review the Summary Page. Click View or Print Outline.

14) Click Customized Outline (PDF version).

15) Save a Copy of the PDF.

16) Review the Annotated Outline for your assigned watershed.

17) Print the last 2 pages of the document and turn in to Kevin to get credit for Assignment 1.

18) Be prepared to discuss the Watershed Plan Builder, how you can use it in your ongoing WPPs, pros, cons, suggestions for improvements, and other issues on Tuesday before lunch.

Assignment 2

1) Split up into your respective teams.

2) The Team Leaders and Assigned Sites and Pollutants are as follows:

Team	Team Leader	Site	Pollutant
1	Jason McAlister	Uhland	<i>E. coli</i>
2	Jay Bragg	Lockhart	<i>E. coli</i>
3	Matt Berg	Luling	<i>E. coli</i>
4	Bud Solmonsson	Uhland	Total Phosphorus
5	Phyllis Dyer	Lockhart	Total Phosphorus
6	Clint Wolfe	Uhland	<i>E. coli</i>
7	David Waidler	Lockhart	<i>E. coli</i>
8	Om Chawla	Luling	<i>E. coli</i>
9	Lee Thomas	Uhland	Total Phosphorus
10	Lucas Gregory	Lockhart	Total Phosphorus

3) **Flow Duration Curve:** Using available daily streamflow data, a flow duration curve is developed for the site in question. You are starting with the Streamflow Data from one of three locations in Plum Creek. The data includes the date and the mean streamflow for that date for a period of approximately 46 years. Copy the flow data from the PCData.xls file (Flow Sheet) into Columns A&B of the LDC Calculator Flow Sheet.

Data for the curve is generated by: 1) ranking the daily flow data from highest to lowest; 2) calculating percent of days these flows were exceeded (percent = (rank ÷ number of data points) X 100).

4) **Develop Load Duration Curve:**

- a) Copy the Water Quality data from the PCData.xls file (Water Quality) Sheet) into Columns A&B of the LDC Calculator Water Quality Sheet. The calculations are performed automatically in the LDC Calculator Water Quality Sheet to determine the daily load estimates and percent days exceeded for observed values.
- b) The LDC Calculator sheet performs the following calculations automatically in the flow sheet. The load duration curve is developed by multiplying the Load or concentration (cfu or mg/L per day) = streamflow (cfs) x concentration x conversion factor (Equation 1). For these examples, the 126 cfu/100 ml for Ecoli and total phosphorus screening criteria of 0.62 mg/l is used, verify the appropriate number is in column H1.
- c) The calculation conversion factors are for Ecoli - $864000000 \cdot (0.308^3)$ and for phosphorus - $86.4 \cdot (0.3048^3)$.
- d) To apply a 10% margin of safety (MOS), the results of Equation 1 are divided by 1.1. In this case, a 10% MOS was selected to account for uncertainties in the gaged flow data.

5) **Graph the LDC** Graph the % Exceeded (Column E) with the Allowable Load with a 10% Margin of Safety (Column I) as a scatter plot. Format the Y axis to logarithmic scale.

6) **Plot Water Quality Sample Data on Load Duration Curve:** In order to compare monitored water quality samples they will need to be added to the graph by adding a series and plotting the % days exceeded (Column E) on the x axis and the bacteria load (Column D) on the y axis.

7) **Print your completed LDC with monitored loads graph and turn into Kevin to get credit.**

Assignment 3

1) Split up into your respective teams.

2) The Team Leaders, Water Resource Issues, and Sources for Assignment 3 are as follows:

Team	Team Leader	Water Resource Issue	Source
1	Beverly Ethridge	Excessive turbidity	Cropland Erosion
2	Loren Henley	Lake sedimentation	Streambank Erosion
3	Tiffany Morgan	Flooding	Unknown
4	Jason Hoffman	Pesticides in Groundwater	Cropland
5	Penny Wimberly	Nutrients in Surface Water	Animal Feeding Operations
6	Dickie Clary	Excessive stream sediment	Pastureland Erosion
7	Rachel Powers	Stream sedimentation	Construction Site
8	Brian Koch	Nutrients in Surface Water	Pastureland
9	Mitch Conine	Nutrients in Groundwater	Cropland
10	Pamela Casebolt	Nutrients in Surface Water	Cropland

3) Using the Conservation Practice Physical Effects (CPPE) table provided, develop a list of practices that provide at least a slight-moderate decrease for your Assigned Water Resource Issue and Source.

Conservation Practice	Effectiveness	Conservation Practice	Effectiveness

4) Prioritize the list based on effectiveness.

5) Select the top 5 practices that you would recommend for implementation.

Priority	Conservation Practice	Effectiveness
1		
2		
3		
4		
5		

6) Turn in to Kevin to get credit for Assignment 3.

Assignment 4

1) Split up into your respective teams.

2) The Team Leaders for Assignment 4 are:

Team	Team Leader
1	Trey Anderson
2	Sharon Daugherty
3	Nelly Smith
4	Amanda Ross
5	Jennifer Buratti
6	Todd Running
7	Mark Palmie
8	Steven Johnston
9	Louanne Jones
10	Ernest Moran

3) Each Group will be reading and reviewing pages 4-12 of the Yellow Bank Creek Watershed Management Plan (one of EPA's Top 6 Plans in the Nation).

4) After individually reading the section of the plan (20 min allotted), work as a group to evaluate the Yellow Bank Creek Watershed Plan for Elements A, B, and C in the provided worksheet (20 min allotted).

5) Indicate your team number at the top of the page and work through the two page worksheet.

1. Satisfied column - Answer with a yes or no
2. Level of Satisfaction ranges from 0 (low) – 4 (high)
3. Page reference – pages where the information was described
4. How did the plan satisfy or fail to satisfy evaluation criteria? – describe
5. How can the plan improve this element? – describe
6. Other notes and comments – Feel free to add comments here

6) Once you have evaluated all three elements and filled in the worksheet turn it into Kevin to get credit for Assignment 4.

7) We will provide EPA's evaluation of Yellow Bank Creek Watershed Protection Plan and discuss the groups' evaluations and compare all of the evaluations.

Assignment 5

EFC Software Tools Demonstration / Blue River Basin Case Study

1) View Blue River Basin Video

- This video will help the participants develop a shared mindset for the challenges of developing and implementing a watershed plan.

2) Plan2Fund Demonstration

- Using the Blue River Basin as an example, participants – in this case the whole class - will use Plan2Fund to identify the Blue River Basin’s mission, goals and objectives.

3) Plan2Fund Objective Prioritization Tool Demonstration

- Plan2Fund OPT is a tool the group will use to prioritize plan objectives. Objectives are the essential elements of the watershed plan that when prioritized, direct the order of implementation events. Together, the class will use OPT to develop decision rules to determine when objectives will be implemented.

4) Task identification using Plan2Fund

- After the priority order of the objectives is established, the class will return to Plan2Fund to invent the tasks that need to be performed to finish those objectives. This exercise will draw on the practical experience of the group to identify the most basic building blocks of the implementation plan – and the budgeted resources necessary for each task.

5) Finding Resources Using the Directory of Watershed Resources

- This segment will begin with an overview of the Directory of Watershed Resources, a tool watershed organizations can use to search for financial and other resources to fund plan implementation.
- Next, the class will split up into their respective teams to discover the potential resources for each task identified in the Blue River Basin Plan case study.
- The Team Leaders for Assignment 5 are as follows:

Team	Team Leader	State
1	Jenna Barrett	Idaho
2	Steve Potter	Maryland
3	Lewis Brockett	Arkansas
4	Lauren Bilbe	Missouri
5	Kathleen Ramsey	Idaho
6	Clint Wolfe	Maryland
7	Peter Ilieve	Arkansas
8	Lisa Prcin	Missouri
9	Larry Hauck	Idaho
10	Vanessa Escobar	Maryland

- In this exercise, each team will be asked to access the common federal resources in the Directory. But, the teams will be assigned a specific State in the Directory database to discover how the variety of funding sources in different states affect the implementation of the watershed plan.

6) Discussion, Conclusions, Lessons Learned and Future Workshop Suggestions

- The different State groups will share their implementation funding experiences.

Texas Watershed Planning Short Course Evaluation

June 2-6, 2008

Name (optional) _____

1. Overall, how would you rate the short course?

Unsatisfactory

1

2

3

4

Most Satisfactory

5

2. Using the scale above, how satisfied were you with each of the course topics below?

TOPICS	Level of Satisfaction				
Nine Elements of a Watershed Protection Plan	1	2	3	4	5
State and Federal Perspectives on WPPs	1	2	3	4	5
EPA Watershed Plan Builder	1	2	3	4	5
Working with Stakeholders to Move The Process Forward	1	2	3	4	5
Using Outreach to Develop & Implement WPPs – Element E	1	2	3	4	5
Partnership Building Experiences in Plum Creek	1	2	3	4	5
Communicating to Diverse Audiences to Achieve Your Goals	1	2	3	4	5
Web-Based Tools for Watershed Assessment & Management	1	2	3	4	5
Defining the Scope of the WPP	1	2	3	4	5
Gathering data to assess your watershed	1	2	3	4	5
Analyzing Data to Characterize Your Watershed	1	2	3	4	5
Expectations for Element A	1	2	3	4	5
Overview of Models for Estimating Loads & Reductions	1	2	3	4	5
Spreadsheet/Time Variable Models	1	2	3	4	5
Perspectives on Monitoring, Modeling & Decision Making	1	2	3	4	5
Setting Goals & Identifying Load Reductions Needed	1	2	3	4	5
Expectations for Element B	1	2	3	4	5
Pollutant Fate and Transport Mechanisms	1	2	3	4	5
Agricultural NPS Measures and WQMPs	1	2	3	4	5
Urban NPS Measures	1	2	3	4	5
Wastewater Treatment Systems	1	2	3	4	5
Other Approaches to Managing Pollutant Sources	1	2	3	4	5
Prioritizing and Selecting Management Measures	1	2	3	4	5
Overview and Expectations for Element C	1	2	3	4	5
Targeting Critical Areas and Scheduling Implementation	1	2	3	4	5
Developing Interim Milestones & Criteria to Measure Progress	1	2	3	4	5
Designing & Implementing Effectiveness Monitoring	1	2	3	4	5
Using Volunteer Monitoring For Assessment and Outreach	1	2	3	4	5
Texas Watershed Steward Program	1	2	3	4	5
Financing Watershed Implementation	1	2	3	4	5
Expectations for Element D	1	2	3	4	5
Putting It All Together – Now What?	1	2	3	4	5

Texas Watershed Planning Short Course Evaluation

June 2-6, 2008

4. How **satisfied** were you with each of the following short course assignments?

Not at all Slightly Somewhat Mostly Completely
 1 2 3 4 5

ASSIGNMENT	<u>Level of Satisfaction</u>				
Assignment 1: Utilize EPA Watershed Plan Builder	1	2	3	4	5
Assignment 2: Estimating Pollutant Loads Using LDCs	1	2	3	4	5
Assignment 3: Select Agricultural NPS BMPs for Plum Creek	1	2	3	4	5
Assignment 4: Evaluate Elements C & F of Plum Creek WPP	1	2	3	4	5
Assignment 5: Using Plan2Fund and Plan2Fund OPT	1	2	3	4	5

5. If you were **not** “completely satisfied” with the short course, please tell us what we could have done better in order for you to have been “completely satisfied?”
6. What was the most significant thing(s) you learned from this short course?
7. Which topic(s) covered by this short course, if any, would you have liked discussed in greater detail?
8. What topic(s), if any, did you have a particular interest in but was **not** covered by the short course?
9. What topic(s), if any, should be omitted from future short courses?
10. How **satisfied** were you with the quality of the course materials? Are there additional resources that should be provided at future courses?

Texas Watershed Planning Short Course Evaluation

June 2-6, 2008

11. What is your level of satisfaction with the sequencing of topics?
12. What will be the first 3 steps you'll implement as a result of taking this training?
13. Looking beyond the course, in your opinion what could the state and/or federal agencies do to best serve you in your WPP efforts?
14. What other tools, training, capacity building, etc. (if any) would you suggest to serve your efforts in WPP planning?
15. What was your level satisfaction with the training location and facility?
16. How would you rate the WPP you are involved in as meeting the intent of EPA's WPP guidelines?
17. In your watershed, what are the local strengths for success?
18. In your watershed what are the local obstacles for success?