

Texas Watershed Planning Training Project
CWA 319(h) NPS Grant Program
TCEQ Contract No. 582-11-12866

Quarter no. 4 From 9/1/13 Through 11/31/13

I. Abstract

Work this quarter primarily focused on preparing and updating materials for registration and advertising of the Fundamentals of Developing a Water Quality Monitoring Plan training and Short Course. Tasks also included updating webpages, updating agendas, confirming speakers, opening registration, and advertising for trainings to be offered including the Texas Watershed Planning Short Course and Fundamentals of Developing a Water Quality Monitoring Plan course. It also consisted of working on the remaining task reports and draft final report.

II. Overall Progress and Results by Objective and Task

OBJECTIVE 1: PROJECT COORDINATION AND ADMINISTRATION

Task 1.1: Project Oversight – TWRI will provide technical and fiscal oversight of the staff and/or subgrantee(s)/subcontractor(s) to ensure Tasks and Deliverables are acceptable and completed as schedule and within budget. With the TCEQ Project Manager authorization, TWRI may secure the services of subgrantee(s)/subcontractor(s) as necessary for technical support, repairs and training. Project oversight status will be provided to TCEQ with the Quarter Progress Reports (QPRs).

The following actions have been completed during this reporting period:

- a. TWRI continually monitors project status and budget to ensure tasks and deliverables are acceptable and completed as schedule and within budget.
- b. TWRI worked with Larry Hauck, TIAER to complete the 2nd Water Quality Monitoring Training and the Watershed Planning Short Course.
- c. TWRI worked with TCEQ on the Close Out Plan on October 7, 2013.
- d. TWRI has worked with the subcontractors on the project to spend their funds for the contract period.

100% Complete

Task 1.2: QPRs – Progress will be reported to TCEQ 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 the following: status of deliverables for each task; narrative description in Progress Report format.

The following actions have been completed during this reporting period:

- a. TWRI/OSRS submitted Year 3, Quarter 3 Progress Report on September 15, 2013.
- b. TWRI/OSRS are working towards submitting the final invoice for the project.

100% Complete

Task 1.3: Reimbursement Forms – Reimbursement forms will be submitted to TCEQ by the last day of the month following each state fiscal quarter. For the last reporting period of the project, Reimbursement Forms are required on a monthly basis.

The following actions have been completed during this reporting period:

- a. There were some issues with the last budget revision that held up the ability to spend in several categories. The budget revision was just approved in November 2013, so the spending that occurred is now being corrected to the account.
- b. The total federal funds remaining balance as of 11/31/2013 was \$25,578, of that amount we have over \$18,908 pending as well as additional travel that has not posted yet from speakers and mileage charges.

95% Complete

Task 1.4: Contract Communication – TWRI will participate in a post-award orientation meeting with TCEQ within 30 days of contract execution. TWRI will maintain regular telephone and/or email communication with the TCEQ Project Manager regarding the status and progress of the project in regard to any matters that require attention between QPRs. This will include a call or meeting each January, April, July, and October. Minutes recording the important items discussed and decisions made during each call will be attached to each QPR. Matters that must be communicated to the TCEQ Project Manager in the interim between QPRs include:

- § *Requests for prior approval of activities or expenditures for which the contract requires advance approval or that are not specifically included in the scope of work*
- § *Notification in advance when TWRI has scheduled public meetings or events, or other major task activities under this contract*

Information regarding events or circumstances that may require changes to the budget, scope of work, or schedule of deliverables; these events or circumstances must be reported within 48 hours of discovery.

The following actions have been completed during this reporting period:

- a. TWRI worked with TCEQ project manager to finalize agenda's for the Fundamentals of Developing a Water Quality Monitoring Plan through email and conference calls.
- b. TWRI worked with TCEQ project manager, TSSWCB and EPA to update the short course agenda.
- c. TWRI has worked with TCEQ project manager to determine dates and locations of the upcoming trainings in October and November 2013.
- d. During the October Call/Emails with the TCEQ Project Manager to discuss the upcoming Fundamentals of Developing a Water Quality Monitoring Plan and Short Course on Oct. 1, 3, 7, and 18th and the Close Out Plan on Oct. 7, 2013 .
- e. TCEQ and TWRI Completed the Contractor Evaluation on Nov. 6, 2013.

100% Complete

Task 1.5: Annual Report Article – TWRI will provide an article for the Nonpoint Source (NPS) Annual Report upon request by TCEQ. This report is produced annually in accordance with Section 319(h) of the Clean Water Act (CWA), and it is used to report Texas' progress toward meeting the CWA 319 goals

and objectives and toward implementing its strategies as defined in the Texas Nonpoint Source Management Program. The article will include a brief summary of the project and describe the activities of the past fiscal year.

The following actions have been completed during this reporting period:

- a. TWRI developed the Annual Report and submitted it to TCEQ on Aug. 6, 2013.

100% Complete

OBJECTIVE 2: MAINTAIN WEB-BASED WATERSHED PLANNING RESOURCES FOR TEXAS WATERSHED COORDINATORS

Task 2.1: Watershed Training Webpage – TWRI will host and maintain an Internet website for information sharing and use by watershed coordinators (<http://watershedplanning.tamu.edu>).

The following actions have been completed during this reporting period:

- a. The Year 3, Quarter 3 Progress Report was posted on the watershed training webpage in the “Projects” section
- b. The “Training” section was updated on the Watershed Planning website; information included:
 - § Texas Watershed Planning Short Course – advertised date and location
 - § Fundamentals of Developing a Water Quality Monitoring Plan – advertised on website.
- c. The website was updated with the Watershed Planning Short Course Attendees to the list of certified watershed coordinators.
- d. There were 679 visits from 484 unique visitors to the webpage with 1,611 page views during this quarter.

100% Complete

Task 2.2: Maintain Directory of Watershed Resources – TWRI will coordinate with the EFC at Boise State University to maintain the Directory of Watershed Resources with data for Texas-specific funding programs. The Directory of Watershed Resources is an on-line, searchable database for watershed restoration funding. The database includes information on federal, state, private, and other funding sources and assistance. This will allow Texas users to query information in a variety of ways including agency sponsor, keyword, or by a detailed search.

The following actions have been completed during this reporting period:

- a. TWRI has advertised the online directory through the website.
- b. The Environmental Finance center is no longer updating the watershed directories across the country.

100% Complete

Task 2.3: Report on the Maintenance of Web-based Watershed Planning Resources for Texas Watershed Coordinators – TWRI will submit a report detailing activities conducted under Task 2 during the current contract.

The following actions have been completed during this reporting period:

- a. Draft Report is being submitted to TCEQ.

90% Complete

OBJECTIVE 3: CONDUCT WATERSHED PLANNING SHORT COURSE

Task 3.1: Organize and Deliver 3 WPSC Events – TWRI will continue to coordinate and offer WPSC annually. To accomplish this, TWRI with assistance from the Project Team, will identify key speakers for the course, make arrangements for facilities, advertise the WPSC, conduct registration, and facilitate the delivery of three (3) Texas WPSCs to a total of 80-120 water resource professionals in Texas and the surrounding region. Certificates will be provided to participants upon completion of the course. A registration fee of \$375 will be charged to WPSC participants. One WPSC Scholarship will be offered per year to assist those who lack funds to attend the WPSC. TWRI will work closely with TCEQ and the Project Team to assess the need for and timing of these short courses to best meets the needs of the state. As needed, travel for speakers will be paid for through project funds.

The following actions have been completed during this reporting period:

- a. The Texas Watershed Planning Short Course was conducted on November 4-8, 2013.
- b. The course was hosted at the Mayan Ranch in Bandera with 20 attendees.
- c. The training was advertised at the July Watershed Coordinators Roundtable and on the watershed coordinators listserv as well as through multiple other listserves in Texas and nationally. A press release on the course through Agrilife Today News was sent to outlets across the state.
- d. TWRI worked with TCEQ to develop the agenda and list of speakers and topics.
- e. TWRI coordinated with instructors on the presentations and travel arrangements for the course.
- f. A WPSC Scholarship was provided to Teresa Carrillo, Associate Director of the Coastal Bend Bays Foundation for the November 2013 Short Course.

100% Complete

Task 3.2: Administer Questionnaires and Evaluations – TWRI will oversee the administration of questionnaires and evaluations to gauge the knowledge gained and how effective the course was for each course participant. Questionnaires will be administered at the beginning and end of selected short courses to demonstrate the course's effectiveness and to identify areas needing adjustment. Evaluations will be completed at the end of each short course to receive comments and participant input and also determine watersheds represented and new WPPs initiated by participants at the short course.

The following actions have been completed during this reporting period:

- a. Questionnaires and evaluations were updated and finalized for use at the 2013 Short Course.
- b. Questionnaires and evaluations were printed and utilized at the November Course.
- c. Questionnaire and evaluations including pre and post tests were evaluated for the Course and included in the Course final materials to TCEQ.

100% Complete

Task 3.3: Report on Watershed Planning Short Course Task – TWRI will provide a report detailing the WPSC held and associated activities conducted under Task 3.

The following actions have been completed during this reporting period:

- a. A draft Task Report is being submitted to TCEQ.

90% Complete

OBJECTIVE 4: PROVIDE PROFESSIONAL DEVELOPMENT TRAINING

Task 4.1: Organize and Deliver “Introduction to Modeling” Training – A two-day course will be developed by TWRI and Texas A&M University System personnel in years 1-2 and delivered in subsequent years of the project to provide watershed coordinators with an introduction to watershed modeling. Development is year 1 and 2. Delivery is year 2 and 3. Topics of the course will include (1) purposes and limitations of different models, (2) timelines, (3) data needs (watershed characterization, water quality information), (4) cost estimates, (5) literature values vs. monitoring, (6) Quality Assurance Project Plans (QAPPs), (7) request for bids, (8) presenting models to stakeholders, and (9) contractor interaction with stakeholder groups. The course registration fee is to be determined.

The following actions have been completed during this reporting period:

- a. A total of 28 participants and instructors were at the August 2013 Training.
- b. Materials were provided to TCEQ project manager on 9/2/2013.

100% Complete

Task 4.2: Organize and Deliver Training on Watershed modeling using LDC and SELECT – LDCs provide a graphical representation of stream flow and pollutant loading whereby real data can be compared to a stream’s maximum allowable load to indicate reductions needed and help identify the type of pollutant load (i.e. point source vs. NPS). SELECT provides a spatially explicit analysis of land use/land cover, animals/humans in watersheds, and other parameters to assess/determine potential sources of bacteria. The models are being used for Total Maximum Daily Load (TMDL) and WPP development. A two-day course will be developed and delivered in subsequent years of the project. A \$100 registration fee will be charged for these two-day courses.

The following actions have been completed during this reporting period:

- a. TWRI conducted the first training on November 6-7, 2012.
- b. The invoice for the computer lab was received and paid for this contract for this training in May 7-8, 2013 at the Horticulture and Forest Science Bldg. computer lab.

- c. The training had 18 attendees to the second training in May 2013.
- d. Evaluations were compiled for this training and submitted to TCEQ with deliverables.

100% Complete

Task 4.3: Organize and Deliver Training on Stakeholder Facilitation – Stakeholder facilitation continues to be identified by watershed coordinators as a training need in Texas. To provide this, TWRI will deliver 2 day-long trainings on stakeholder facilitation. A \$30 registration fee will be charged for the stakeholder facilitation programs.

The following actions have been completed during this reporting period:

- a. This task is complete:
 - § The first Stakeholder Facilitation training was held July 26, 2011 in Austin in conjunction with the January 2011 Texas Watershed Coordinator Roundtable.
 - § The second Stakeholder Facilitation Training was held January 24, 2012 in Waco in conjunction with the January 2012 Texas Watershed Coordinator Roundtable.

100% Complete

Task 4.4: Organize and Deliver Training on Water Quality Monitoring – Training will be developed by TWRI and others and will cover monitoring for (1) watershed characterization and (2) evaluation of water quality improvements and BMP effectiveness from implementation activities. Topics of the training will include: data quality objectives; identifying available data; determining data gaps and needs; monitoring plan development to meet data quality objectives and support modeling; selecting monitoring types, locations, equipment and laboratory analysis; obtaining stakeholder input; developing QAPPs for monitoring and acquiring data; and a workshop portion for collaboratively creating monitoring plans. The course(s) will be developed in years 1-2, and a minimum of one course per year will be delivered in subsequent years.

The following actions have been completed during this reporting period:

- a. The Fundamentals of Developing a Water Quality Monitoring Plan workshop was conducted in Austin and a total of 25 registered and 5 presenters.
- b. Course materials were compiled and the workshop manual was developed and printed for the course.
- c. The agenda was updated and registration materials put on the website and used in advertising.
- d. The 2nd training was held on October 23-24, 2013 with 25 attendees in Temple, Texas at the ARS Facility.
- e. Deliverables and materials were provided to TCEQ on Nov. 22, 2013.

100% Complete

Task 4.5: Administer Questionnaires and Evaluations –TWRI will oversee the administration of questionnaires and evaluations to gauge the knowledge gained and how effective the course was for each course participant. Questionnaires will be administered at the beginning and end of each course to demonstrate the course's effectiveness and to identify areas needing adjustment.

The following actions have been completed during this reporting period:

- a. TWRI administered questionnaires and evaluations to Stakeholder Facilitation Training participants for each training (July 2011 and January 2012).
- b. TWRI Program Coordinator developed evaluations for the Water Quality Monitoring and LDC/SELECT trainings.
- c. Evaluations were conducted for the Short Course Training.
- d. Training evaluations and questionnaires were administered and compiled for LDC/SELECT Training held in November 2012 and May 2013.
- e. Training evaluations were developed and conducted for the Texas Watershed Coordinator roundtable.
- f. Training evaluations were developed and conducted for the Introduction to Modeling I and II and submitted to TCEQ.
- g. Training evaluations and questionnaires were administered and compiled for the 2012 and 2013 Fundamentals of Water Quality Monitoring Training and 2013 evaluations were provided to TCEQ on November 22, 2013.

100% Complete

Task 4.6: Report on Professional Development Trainings Provided –TWRI will submit a report detailing professional development trainings provided and associated activities conducted under Task 4.

The following actions have been completed during this reporting period:

- a. The draft report is being submitted to TCEQ.

90% Complete

OBJECTIVE 5: ORGANIZE AND FACILITATE TEXAS WATERSHED COORDINATOR ROUNDTABLES

Task 5.1: Facilitate Watershed Coordinator Roundtables – TWRI will coordinate with TCEQ, TSSWCB and EPA to organize and facilitate a total of six (6) semi-annual Watershed Coordinator Roundtables. These face-to-face Roundtables will build upon the fundamental knowledge conveyed through the WPSC and establish a continuing dialogue between watershed coordinators in order to facilitate interactive solutions to common issues being faced by watershed coordinators statewide. Periodically, TWRI, in conjunction with TCEQ and the Project Team will review the continued need for semi-annual Roundtables as well as their specific timing.

The following actions have been completed during this reporting period:

- a. All of the speakers were contacted and confirmed.
- b. The agenda was finalized and updated on the website. A Roundtable was held on July 30, 2013 with 66 participants in attendance.
- c. It was advertised through the listserve, website, and a press release.
- d. Presentations, videos and a participant list can be found on the Watershed Planning website: <http://watershedplanning.tamu.edu/developing/roundtable/july-30-2013/>
- e. This quarter focused on preparations and conducting the July 30, 2013 Roundtable in Dallas, TX.

- f. Materials for the course were provided to TCEQ.

100% Complete

Task 5.2: Administer Evaluations – TWRI will oversee the administration of evaluations to gauge the knowledge gained and how effective the Roundtable was for each participant. Evaluations will be administered at the end of each Roundtable to determine future topics of discussion.

The following actions have been completed during this reporting period:

- a. Evaluations were conducted and have been summarized on the July 30, 2013 Roundtable.

100% Complete

Task 5.3: Report on the Texas Watershed Coordinator Roundtables – TWRI will submit a report detailing Texas Watershed Coordinator Roundtable meetings provided and associated activities conducted under Task 5.

The following actions have been completed during this reporting period:

- a. TWRI is working on a draft of this report and will complete the report this next quarter.

90% Complete

OBJECTIVE 6: SUBMIT FINAL REPORT

Task 6.1: Draft Report

The following actions have been completed during this reporting period:

- a. TWRI has been working on the draft final report for the project during this quarter and is submitting it along with this quarterly progress report in December.

100% Complete

Task 6.2: Final Report

The following actions have been completed during this reporting period:

- a. TWRI will work with TCEQ to finalize the draft final report for this project.

80% Complete

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

- TWRI and OSRS are working on completing spending down the categories with the budget amendment recently getting approved.

IV. Projected Work for Next Quarter

- TWRI/OSRS will prepare and submit the Final Invoice
- TWRI will prepare and submit the Final Report.

***Appendix A: Fundamentals of Developing a Water Quality Monitoring Plan – Agenda,
Sign-in Sheet, Press Release and Evaluation Results***

Fundamentals of Developing a Water Quality Monitoring Plan

October 23-24, 2013

USDA ARS Facility in Temple, Texas

Agenda

Wednesday, October 3

9:00 a.m. to 5 p.m.

- 9:00 – 9:30 a.m. **Introductions & Workshop Overview**Larry Hauck, TIAER
Group introductions and Workshop purpose: Provide participants with the tools to develop and implement a monitoring program for watershed characterization and evaluation of water quality improvements and BMP effectiveness from implementation activities. Brief watershed overview of case studies presented throughout the day.
- 9:30 – 10:00 a.m. **Data Quality Objectives & Project Planning**..... Tina Hendon, TRWD
Defining the water quality problem, determining monitoring objectives, and establishing data quality objectives at the outset. Long term data needs of the watershed; analytical framework to determine loadings in a watershed protection plan; routine monitoring vs. BMP evaluation (Elements H and I)
- 10:00 – 10:15 a.m. **Case Study: Introduction**
- 10:15 – 10:30 a.m. **Break**
- 10:30 – 11:00 a.m. **Inventorying and Acquiring Existing Resources** Patricia Wise, TCEQ
*Review 305(b) process & existing monitoring framework
Inventory existing/historic monitoring sites & data (TCEQ, USGS, others); Acquiring existing data*
- 11:00 – 11:45 a.m. **Watershed Characterization & Sufficient Data** Anne McFarland, TIAER
*Review/select experimental/statistical design – reconnaissance/synoptic, plot, single watershed/before-after, above-and-below watersheds, paired watersheds, multiple watersheds, trend stations
Assess ability of existing data to meet objectives & identify data gaps and data needs
Assessing # of additional sites, samples, and frequency needed*
- 11:45 – 12:00 p.m. **Case Study: Defining the problem, monitoring objectives, and data quality Inventorying and acquiring existing data, selecting experimental design, and assessing data sufficiency and data gaps.**
- 12:00 – 1:00 p.m. **Lunch** (*catered lunch or bring your own*)
- 1:00 – 2:15 p.m. **Selecting Monitoring Design**Larry Hauck, TIAER
*Scale – point, plot, field, watershed
Sample type – grab, composite – time or flow weighted, depth integrated, continuous
Variables monitored (cost & cost cutting considerations)
Sample locations, sampling frequency, and monitoring duration
Station types – discharge measurement, water sample collection – grab vs automated, precip
Collection & Analysis Methods – collection, preservation, transport, analysis, QA/QC
Routine monitoring vs. BMP evaluation; flow and surrogates for flow
National Water Quality Monitoring Handbook*

- 2:15 – 2:45 p.m. **Introduction to Stormwater Sampling**.....Daren Harmel, USDA-ARS
Understanding the why's and how's of stormwater sampling.
- 2:45 – 3:00 p.m. **Break**
- 3:00 – 3:30 p.m. **Other Considerations & Review Building a Successful Monitoring Plan**.....Larry Hauck, TIAER
Monitoring plan development to meet data quality objectives and Support Modeling; equipment; budgets; personnel constraints and available resources; and the importance of project planning.
- 3:30 – 4:00 p.m. **Case Study: Selecting Monitoring Design**
- 4:00 – 5:00 p.m. **Workshop: Create a Monitoring Plan**Group
*Divide into six groups and outline and develop a monitoring plan using National WQ Handbook worksheet.
[watershed assessment; effectiveness monitoring (watershed scale; BMPs)]
EPA QA Training

Thursday, October 4

8:30 a.m. to 3:30 p.m.

- 8:30 – 9:30 a.m. **Workshop Follow Up: Present/Discuss Monitoring Plan**.....Group
Each group presents monitoring plan (10 minutes per group).
- 9:30 – 10:00 a.m. **Quality Assurance Project Plans**.....Kevin Wagner, TWRI
Integrating monitoring design into QAPPs & QAPP development tips; session will also review different QAPP types and templates.
- 10:00 – 10:15 a.m. **Break & Travel to Monitoring Site**
- 10:15 – 12:00 p.m. **Monitoring Demonstrations** Brazos River Authority/Tidwell/Harmel
- Christine Kolbe and Michele Blair (TCEQ) - routine monitoring
- Daren Harmel (USDA-ARS) & Russell Park - stormwater monitoring (ISCO)
- Travis Tidwell (Texas Stream Team) - volunteer monitoring
**30 minutes per station*
- 12:00 – 1:00 p.m. **Travel to Workshop Location & Lunch** (catered lunch or bring your own)
- 1:00 – 2:00 p.m. **Statistical Tools For Analysis** Anne McFarland, TIAER
Review and demonstrate common statistical analysis for water quality data analysis. Discuss role of statistics in final reporting of data, how they are tied back to overall monitoring objectives, and use for evaluating BMP effectiveness and quantifying load reductions.
- 2:00 – 2:30 p.m. **Uncertainty in Monitoring**Daren Harmel, USDA-ARS
- 2:30 – 3:00 p.m. **Stakeholder Communications**Larry Hauck, TIAER
*Determining BMPs; incorporating analysis of sampling uncertainty and translating both to stakeholders; getting information up front.
include list of contacts for regional offices; RRC, etc. (who to contact for complaints)
- 3:00 – 3:30 p.m. **Wrap Up**Larry Hauck, TIAER
Discuss how monitoring folds into watershed based plans and ties back to watershed-based planning efforts.

	#	First	Last	Agency/Organization	Email
BS	1	Brianna	Suenz	TAMU Kingsville	brianna.suenz@tamuk.edu
J.R.	2	Jonas	Rosenthal	Travis County TNR	jonas.rosenthal@co.travis.tx.co
BA	3	Bernadette	Davis	TX Commission on Environmental Quality	bernadette.davis@tceq.texas.gov
FA	4	Faith	Hambleton	TX Commission on Environmental Quality	faith.hambleton@tceq.texas.gov
MA	5	Morgan	Ayers	Bandera City River Auth & Groundwater District	mayers@bcragd.org
EL	6	Eric	Leigh		ericleigh@gmail.com
DA	7	Darrell	Andrews	Tarrant Regional Water District	darrellandrews@trwd.com
AY	8	Aye Aye	Kyi	(private company)	aa.kyi@outlook.com
GU	9	Javier	Guerrero	TAMU Kingsville	JGuerr1351@aol.com
SA	10	Augusto	Sanchez	TAMU Kingsville	kans2045@tamuk.edu
CI	11	Danielle	Cioce	Harris County Watershed Protection Group	Danielle.Cioce@hispd.org
WR	12	Kyle	Wright	USDA-NRCS	kyle.wright@tx.usda.gov
AY	13	Aye Aye	Kyi		aakvi@outlook.com
WD	14	Michelle	Wood-Ramirez	TAMU	Michelle@dw-inc.com
	15				
	16				
HA	17	Larry	Hauck	TIAER	
TD	18	Tina	Hendon	TRWD	tina.hendon@trwd.com
WI	19	Patricia	Wise	ICEQ	
MF	20	Anne	McFarland	TIAER	
DA	21	Daren	Hamel	USDA-ARS	
WA	22	Kevin	Wagner	TWRI	
TD	23	Travis	Tidwell	Texas Stream Team	
DI	24	Nikki	Dierksen	TWRI	
	25	Russell	Park		

Water quality monitoring for plan development focus of Oct. 23-24 program in Temple

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October 7, 2013

TEMPLE — The [Texas Water Resources Institute](#) is hosting "Fundamentals of Developing a Water Quality Monitoring Plan" training Oct. 23-24 at the U.S. Department of Agriculture's Agricultural Research Service [Grassland Soil and Water Research Laboratory](#), 808 East Blackland Road, Temple.

The institute is part of [Texas A&M AgriLife Research](#), [Texas A&M AgriLife Extension Service](#) and the [College of Agriculture and Life Sciences at Texas A&M University](#).

The workshop will be held from 9 a.m.-5 p.m. Oct. 23 and from 8:30 a.m.-3:30 p.m. Oct. 24 at the ARS Meeting Room.

Cost is \$150 and includes course materials, catered lunches and a certificate of completion.

According to Nikki Dictson, AgriLife Extension program specialist for the institute, the workshop will provide watershed coordinators and water professionals with the tools to develop and implement a water quality monitoring program.

She said the course will cover monitoring water quality for watershed quality improvements and effective implementation and management.

"Participants will gain an understanding of what monitoring is needed for watershed protection planning, including inventorying existing resources, watershed characterization, selecting a monitoring design, storm water sampling and considerations to build a successful monitoring plan through presentations and case studies," Dictson said. "Participants will get some hands-on experience with creating a monitoring plan and through monitoring demonstrations in the field."

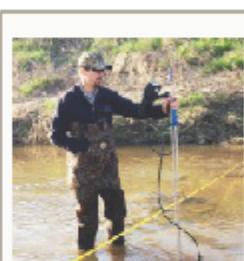
Course instructors will include: Dr. Larry Hauck, lead researcher, and Anne McFarland, research scientist, both from Tarleton State University's Texas Institute of Applied Environmental Research; Dr. Kevin Wagner, associate director, Texas Water Resources Institute, College Station; and Dr. Daren Harmel, research leader and agricultural engineer, USDA-ARS Grassland, Soil, and Water Research Laboratory, Temple.

One Texas Water Resources Institute continuing education unit will be provided upon course completion.

Participants may register for this training at <http://watershedplanning.tamu.edu/training/>.

More information is available at the website or by contacting Dictson at 979-458-5915 or n-dictson@tamu.edu.

This training is supported by funding from the Texas Commission on Environmental Quality through a U.S. Environmental Protection agency nonpoint source grant.



The "Fundamentals of Developing a Water Quality Monitoring Plan" program Oct. 23-24 in Temple will focus on water quality monitoring as a means to help determine and implement an effective watershed protection plan. (Texas Water Resources Institute photo)

Please indicate your affiliation			
	Environmental Group		
4	Academia		
	Consultant		
	Utility		
18	Government	1	City/County
		0	Regional
		15	State
		2	Federal
	Other		
Why is this training important and what do you hope to gain?			
Perspective on developing monitoring program for Travis county			
Creating a WPP			
I hope to gain a further knowledge of understanding how, when, where, etc. for monitoring			
To strengthen review skills of QAPPs			
It will assist with managing my projects and WPPs			
I'm interested in further development in planning, monitoring			
Need more help figuring out what type of monitoring we need to be doing and the best way to go about it			
Just want to learn more about the nuts and bolts			
Consistent shared understanding of monitoring strategies			
To learn how to properly set up a monitoring plan that will accurately assess what is happening in a waterbody			
Practical steps in field, statistics, DQOs			
Different perspective on developing monitoring plans			
To better prepare me for real situations; I hope to gain a deeper understanding of WQMPs on a deeper level			
In the process of developing a proposal for intensive monitoring within a watershed with a WPP			
The Clean Rivers Program performs baseline monitoring and provides the basis for later, targeted monitoring plans. This class will aide in those goals			
This training is important to my continued education as a water professional. I hope to gain an understanding of how to develop a WQ monitoring plan since I have to review these as a project manager.			

It is important to gain access to the trainings utilized by the regulatory agencies in order to standardize the monitoring process. I hope to learn the best practices in developing data quality objectives
To see how all of the pieces fit together in WQ from concept to data collection to analysis and use. I would like to learn about monitoring of BMPs after implementation to measure success
I work on bacteria modeling. Monitoring is inherent to this and it is an area I don't have a lot of experience in
To provide great understanding of the planning process and greater appreciation of the importance of planning for data uses prior to developing a sampling plan. I hope to gain an easier job in reviewing project work plans and QAPPs
I have just taken over as the prgm mgr for the Rio Grande Basin and I would like some pointers on how to continue our monitoring program and possibly make some changes
I manage projects including monitoring projects so I want to gain knowledge on monitoring aspects of the project and help contractors develop monitoring plan
What are your greatest challenges in developing a water quality monitoring plan?
Lack of resources/funding
Funding; getting out the idea that data matters
Assisting contractors in development of sample plan (and QAPP)
Cost, time, coordinating
Working with volunteers towards encouraging their community involvement
Details regarding stormwater samples; completing projects in a limited time frame
Quantifying uncertainty
The scale and how to organize data
Matching the funding, determining sampling regime
DQOs, statistics
I'm new
Balancing varied interests with water accessibility and limited funding
How many sites to have across a watershed
Developing a good plan "shell" that can be easily adapted to various areas
Getting enough sites on the ground - upstream/downstream/tributaries and how to plan locations
Learning correct and proper methods to attain monitoring goals
Inconsistency in design of projects that I review, mainly with respect to DQOs and associated sampling designs; Inappropriate use of a one-size-fits-all approach for different projects

We have an extremely large river basin, a large number of partners, and very scattered stations
Identifying; where to monitor; how much monitoring; how to develop proper sampling plan
What tools or methods do you currently use for monitoring plan development?
Public feedback
GIS; stakeholder knowledge gathering
TCEQ QAPP requirements/protocol
None- rely on contractors
DO filtrations; new CHEMETs test; transparency tube - secchi disc; pocket meters
Good guidance for determining appropriate sample site
TCEQ guidelines
Myself so far but now that I have taken this course I am confident at moving forward
I just review- but look for what, where, when, why
TCEQ coordinated monitoring schedule, TCEQ database
Never done one before (new)
Stakeholder input
Stakeholder and agency input, paired with historical monitoring and targeted monitoring for discovered issues
Existing plans, local expertise
We currently use a volunteer monitoring program that uses a TCEQ-approved monitoring plan
ISCO & NELAE , volunteer wq monitoring (TX Stream Team), CRP, for watershed protection planning
Non at the moment - as I work on modeling
Various - EPA guidance is most appropriate for my projects
The CRP uses all the TCEQ methods - QAPPs, watershed characterizations, etc.
Available state and federal guidelines and requirements
What are your greatest needs in regards to statistical/experimental design, statistical analysis and interpretation of results, Quality Assurance, other?
QA process is too long
Mainly QA; more knowledge here will enhance my skills with assisting contractors with QAPPs
Understanding statistical analysis of water quality data
Refining LCRA's water quality index/formula for analysis
Would love some good reference documents for experimental design
Ease of accessing data to present to stakeholders; working through the QA process

Statistical/experimental design; statistical analysis
Statistical analysis - always difficult if you don't use all the time; and know what to use to analyze data
A better understanding of all
Examples of statistical analyses of water quality data and how to use those stats
How to detail information for QAPP purposes; developing DQOs
My greatest need is to learn methods to interpret data with large time gaps as well as some incomplete fields
Hopefully I will know how to answer this after this training
QA
Need to address the misconception that "more data is better" and that it's acceptable to gather data, than figure out what to do with it later
I would like ideas on how to better compile large amounts of data. I'd like to go home with ideas as to better data management analysis and changes we could make to our monitoring program
I don't have any experience in statistics so anything on that aspect will help
Starting from the beginning of our sampling plan and WPP. Everything that this class brought is going to be a great tool so I can build a much better plan
(2) -- Unsure

Did this workshop meet your expectations?	
	1 (Fell short of expectations)
	2
1	3
13	4
7	5 (Exceeded expectations)
What were the most valuable aspects of this workshop?	
The hands-on outside tasks; discussion on QAPPs; location and size of workshop	
Review of DQIs; resources; reasons to collect data; site selection recommendations; creating a monitoring plan exercise	
All; monitoring demonstrations	
Monitoring methodology/demonstrations	
The case study was valuable, but had a lot more potential for correlation and applicability. The uncertainty and watershed characterization presentations were very useful and educational. The workshop, while long, was helpful - perhaps reduce prep time and increase discussion time to consider effects of different plans	
I liked that people from all types of agencies and backgrounds came. It was great for networking. I also liked the variety of presentations.	
Discussions prompted by presentations; real-life example of Carters/Burton Creek	
Developing a monitoring plan	
Case study, statistical analysis, workshop portion	
I like how the speakers are in the audience, not separated out. It makes them feel like peers and approachable. The more I learn about this, the less I know. But this was a good start. I have my work cut out for me. Huge need to see how all of these pieces fit together. Without it, we could never take it to the next level as Daren is challenging us to	
Case study	
Watershed-based monitoring discussion	
Obtained a big picture of monitoring plan development	
Excellent overviews of major components of monitoring plan	
Professionals with actual field experience presenting monitoring techniques, etc. Also, other professionals presenting info on QAPPs, stats, etc. Group activity was very helpful	
The group exercise was very valuable. However, I believe that more time was needed as perhaps a much simpler set of parameters and data	
Provided good overall overview of monitoring	
Monitoring exercise; uncertainty presentation; statistical analysis; monitoring demonstration	
Aspects to consider when developing a WQ monitoring plan, QAPPs	

Hands on monitoring - I know time was a factor but would have been really nice to see the sampling at a site, not just a demo set up. Lots of knowledgeable presenters and some very useful impromptu discussions				
The case study was a good aspect to the workshop but maybe should have tied to the group workshop. The QAPP was a good presentation to give a quick run down				
What were the least valuable aspects of this workshop?				
Statistical tool analysis talk was a little long and technical; no papa johns!				
Some presentations glossed over a more detail-oriented process - maybe a successive workshop could delve into the specifics more. Hard to do unless you know your audience, I'm sure				
DQOs - we should restructure this presentation				
Conceptual, typical lists of considerations in an activity/practice vs. specific recommendations, applications and examples				
QAPP presentations were very good, but available in other forums. I think the addition of how 303d listing occurs, what it means would have been an asset - especially with focus on sampling only reveals WQ issues, does not cause them, in addition, continued sampling does not cause delisting, it only provides the info to allow delisting				
Everything was fine				
All aspects were valuable! But if I have to choose ... perhaps too much detail on the use of statistical tools for many in this audience. Would not remove this information from the workshop, but perhaps combine stats with sampling design presentation, particularly since design info is repeated here. This would allow for questions and emphasis if next audience is more interested.				
Stakeholder communications - mainly review, not new material				
No contact sheet of participants				
DQOs and uncertainty				
Need more detailed practice on data collection and analysis				
As much as I love statistics (no sarcasm) it is difficult to learn their value without any hands-on exercise				
Focus more on bacteria				
Statistical Tools for Analysis because I will never have to use this				
Would have liked the talk to just be a little more advanced - felt some of the info was very basic, just a little more I think would have been good without being overwhelming				
This really depends on who your audience is - since some here are basically for knowledge to help partners or depending on if they are here because they are doing the work				
Data Quality Objectives and Project Planning (Hendon)		Excellent	Good	Average
		4	9	5
Comments:	In depth info - quite quickly - a bit hard to take it all in but a good overview for course context.			
Move to end of course				
Great presentation - case study could have been moved and really focused on how DQOs shaped eventual goals of the project				
Covered a lot of information very quickly - might have been good if they had 10 more minutes to talk				

Too fast; could go more in depth					
How to set DQOs was still a little confusing					
It's an area we don't do well or understand well, so we need to explore it more as a part of planning for the next training					
I think I would have moved this further into the workshop after an overview, though I know the intent was to begin with the end in mind - after several presentations, it does make sense					
<i>Inventorying and Acquiring Existing Resources (Wise)</i>		Excellent	Good	Average	Poor
		11	9		
Comments:	Fantastic presentation				
Funny and thought provoking. The "Create Data Inventory" slide is awesome.					
Could maybe be combined with quality documentation since acquiring data does require documentation					
Would have like a few more specific examples					
Great!					
Lively, to the point, short					
<i>Watershed Characterization and Sufficient Data (McFarland)</i>		Excellent	Good	Average	Poor
		11	9	1	
Comments:	Really good presentation				
Some overlap with Hauck's monitoring design presentation, but good info. I anticipated this talk would focus more on how to collect data in order to characterize potential pollutant sources (follow up on and similar to Wise's talk) - suggest re-working content of this talk					
Could be used to analyze existing or to plan for future data. Not so much about water characterization but examples of advantages and					
Great examples of different sampling plans and their pros/cons. I expected much more of this type presentation					
Good review of types of study design					
<i>Selecting Monitoring Design (Hauck)</i>		Excellent	Good	Average	Poor
		9	8	4	
Comments:	Needs more examples				
Also an excellent presentation					
I feel this presentation should be shorter or split into two different presentations					
Hauck uses real world examples well and is open to feedback from audience for clarifications					
Too focused on small details - such as uses of particular parameters, more focus on why a sampling technique/parameter, etc. would be selected					
<i>Introduction to Stormwater Sampling (Harmel)</i>		Excellent	Good	Average	Poor
		13	7	1	
Comments:	Liked that he answered all questions and allowed discussion				
How to save money and reduce uncertainty as little as possible is very useful					
Great explanation of the possibilities of this sampling technique, excellen next-day follow up with auto sampling					
<i>Other Considerations & Review Building a Successful Monitoring Plan (Hauck)</i>		Excellent	Good	Average	Poor
		7	12	2	

Comments:	Excellent presentation				
This presentation should flow into the workshop					
Helpful detail about planning components					
For afternoon presentation near the end, presentation was a little too long and redundant					
<i>Quality Assurance Project Plans (Girten/Wagner)</i>		Excellent	Good	Average	Poor
		12	8	1	
Comments:	Very informative				
This presentation was very good; learned more in this 30 minute presentation than I did in QA training					
Thanks for the resources					
Great overview, but is available other places					
Good overview					
<i>Monitoring Demonstrations (Group)</i>		Excellent	Good	Average	Poor
		13	7	1	
Comments:	More group activities - gives a direct (hands-on) approach to learning				
Have demonstrations occur in a water body					
Could have been longer for routine monitoring and not as long for the stormwater portion. We didn't get to finish at the routine monitoring station					
Auto sampler was useful and interesting. Field sampling demonstration was a bit repetitive from other classes. This forum doesn't really allow for the indepth needs of providing lots of information to create good, consistent examples					
Stormwater equipment a little out of my league, but flow measurements and routine monitoring irrelevant for me					
Good timing in agenda. Just right on time allotted.					
Seeing the variety of tools is good					
<i>Statistical Tools for Analysis (McFarland)</i>		Excellent	Good	Average	Poor
		6	13	2	
Comments:	A lot of info				
A little more in-depth explanation of the basic tests to run and what to look for					
I am on a remedial statistics track; intro to terms would help					
Good overview, but data examples would be good - assumes some background in the subject					
Good level of technical detail for audience, in general, although may be more useful for more technical staff					
Went over my head. I need to take a statistics class. The watershed image is distracting as it looks like a woman's body - please tell her.					
<i>Uncertainty in Monitoring (Harmel)</i>		Excellent	Good	Average	Poor
		11	7	2	
Comments:	Perhaps tailor presentations to audience a little more? Maybe not?				
Amazing work - he's really setting the bar					
Excellent overview and interesting, fact-based presentation					
<i>Stakeholder Communications (Hauck)</i>		Excellent	Good	Average	Poor

		3	13	2	
Comments:	Review, not really new info, however important to those new to the program				
Problems examples (lessons learned) success stories explained was helpful					
Great wrap up					
Coming from the volunteer monitoring perspective, the element is very important as a way of creating citizen buy in and involvement					
Additional Comments					
Case study great! Work group activity great!					
Case study on Day 1 - really liked this aspect of the workshop. It helped to pull all of the topics together - KEEP THIS for future workshops					
Something that might be good is if y'all had break out sessions and pair up people of the same agency role to use this workshop/training as a tool to learn how it affects a certain group of what your responsibility is on that topic					
Case study was excellent - it worked well to intersperse these throughout the day					

Appendix B: Texas Watershed Planning Short Course – Agenda, Sign-in Sheet, Press Release Manual Cover, Instructor Bios and Evaluation Results

Texas Watershed Planning Short Course

Course Agenda – November 4-8, 2013

Monday, November 4, 2013

Facilitator: Kevin Wagner

- | | |
|-----------------|--|
| 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. |
| 1:00 – 2:30 pm | IntroductionWagner
This session will provide (1) the opportunity for participants to introduce themselves and the watersheds they are working in, (2) information on facilities and ground rules, (3) an overview of the course and its purpose and structure, (4) an overview of the Nine Elements to be included in a WPP as outlined in Chapter 2 of the <i>Handbook</i> and (5) a synopsis of the EPA Region 6 Review Guide for Watershed-Based Plans. |
| 2:30 – 3:30 pm | Perspectives on Watershed Planning.....Panel
A panel composed of EPA, TSSWCB, and TCEQ will discuss (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 including new grant guidance, etc. |
| 3:30 – 3:50 pm | Break |
| 3:50 – 5:15 pm | Working with Stakeholders to Move the Process Forward MacPherson
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 (Chapter 3 of the <i>Handbook</i>). |
| 5:15 – 6:00 pm | 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. |
| 6:45 pm | Dinner |

Tuesday, November 5, 2013

Facilitator: Nikki Dictson

7:00 – 8:00 am	Breakfast
8:00 – 8:15 am	Expectations for Element E Dictson The expectations for and an example of Element E will be reviewed and discussed to provide participants with an understanding of the information/ education components of the WPP.
8:15 – 9:15 am	Using Outreach to Develop and Implement WPPs MacPherson Outreach is a powerful tool to get stakeholders involved early in the planning process, promote behavior change in the watershed, and enhance implementation of management strategies in the watershed. Learn tips and tools to conduct effective outreach without breaking the bank (Chapter 12.2 of the <i>Handbook</i>).
9:15 – 9:45 am	Expectations for Element A EPA The expectations for and an example of Element A will be reviewed and discussed to provide participants an understanding of what is necessary to identify causes and sources of water quality impairments and concerns.
9:45 – 10:00 am	Break
10:00 – 10:40 am	Defining the Scope of the WPP Wagner This session will discuss identifying issues of concern, developing preliminary goals, and selecting indicators of environmental conditions (Chapter 4 of the <i>Handbook</i>).
10:40 – 11:40 am	Gathering data to assess your watershed Dictson 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 <i>Handbook</i> ; (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.
11:40 – 12:00 pm	Estimating OSSF density in rural watersheds..... Wagner This session will discuss an approach to estimating on-site sewage facility (OSSF) numbers and locations in rural watersheds.
12:00 – 1:00 pm	Lunch
1:00 – 2:10 pm	Analyzing Data to Characterize Your Watershed Davenport How do you analyze your data? What tools are available? Is modeling needed? This session will review Chapters 7 and 8.1-8.2 of the <i>Handbook</i> in order to provide participants 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. The session will also examine refining goals, identifying management objectives, and determining load reductions needed (Chapter 9 of the <i>Handbook</i>).
2:10 – 3:10 pm	The Good, the Bad, and the Ugly MacPherson Participants will learn techniques to improve their outreach materials and critique samples to determine their effectiveness in reaching the audience and communicating the message.

3:10 – 3:30 pm	Break
3:30 – 4:00 pm	Expectations for Element B EPA The expectations for Element B will be reviewed and discussed to provide participants 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.
4:00 – 5:15 pm	Overview of Models for Estimating Pollutant Loads & Reductions Hauck If modeling is needed, what models are available and how do you select a model? This session will examine Chapter 8.3-8.5 of the <i>Handbook</i> to give participants 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).
6:45 pm	Dinner

Wednesday, November 6, 2013

Facilitator: Dictson/Wagner

7:00 – 8:00 am	Breakfast
8:00 – 9:00 am	Simple Tools for Estimating Loads and Load Reductions Hauck This session will describe and demonstrate simple tools (i.e. load duration curves (LDC) and SELECT model) to determine needed pollutant load reductions and assess potential sources of the pollutants. This session will also demonstrate the use and integration of LDC, and SELECT models in the development of the Plum Creek WPP.
9:00 – 9:30 am	Overview and Expectations for Element C EPA This session will provide a discussion of expectations for Element C as well as steps to select management practices (Chapter 10 of the <i>Handbook</i>).
9:30 – 10:20 am	Agricultural NPS Measures Wagner Agricultural nonpoint source measures in Texas are typically implemented through SWCDs, TSSWCB, and NRCS as part of a Water Quality Management Plan or Resource Management System. This session discusses (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.
10:20 – 10:40 am	Break
10:40 – 11:30 am	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.
11:30 – 12:00 pm	Overview of Educational Programs..... Wagner

This session provides an overview of the Texas Watershed Steward, Texas Well Owner Network, Lone Star Healthy Streams, and other education programs. Incorporation of these programs into WPP efforts empowers stakeholders by providing them with the knowledge to make informed decisions about water resources.

12:00 – 1:00 pm	Lunch
1:00 – 2:30 pm	Wastewater Treatment Systems, Wastewater Issues, Permits and Online Wastewater Treatment Modules.....Magin/Gerlich A presentation providing a brief overview of wastewater treatment systems (WWTFs and OSSFs), their impacts, and effectiveness in removing pollutants in addition to identifying and addressing wastewater treatment system issues in your watershed. As well as an overview of Online Educational Modules on wastewater treatment plants, onsite wastewater treatment systems and fats, oils, and grease.
2:30 – 3:15 pm	Gas Well Drilling and StormwaterBanks In 2005, EPA awarded funding to Denton, Texas, to monitor and assess the impact of gas well drilling on stormwater runoff, and to provide regulatory and management strategies for these activities. The results and recommendations for managing this nonpoint source will be reviewed.
3:15 – 3:35 pm	Break
3:35 – 4:35 pm	Texas Riparian and Stream Ecosystems..... Dictson This session will present information on riparian and stream ecosystems, their function and benefits, and a new educational program to restore and protect them.
4:35 – 5:20 pm	Protecting Riparian Areas, Streams and Environmentally Sensitive Areas with Municipal Codes in Urban AreasBanks Denton, one of the fastest growing cities in Texas, has served as a leader in the protection of riparian areas, streams, floodplains and environmentally sensitive areas. This session will highlight their strategies.
6:45 pm	Dinner

Thursday, November 7, 2013

Facilitator: Nikki Dictson

7:00 – 8:00 am	Breakfast
8:30 – 9:30 am	Economics of BMP selection in the Hickory Creek WatershedBanks This session will discuss the economic analyses used to select the most cost effective BMPs for use in attaining the site-specific objectives of watershed management in the Hickory Creek watershed.
9:30 – 10:00 am	Expectations for Element D EPA 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 (Chapter 12.7 of the <i>Handbook</i>).
10:00 – 10:20 am	Break

10:20 – 10:50	Funding Sources for Implementation Dictson This session will discuss sources of funding in Texas for implementation of WPPs along with match requirements and the mechanisms for requesting it.
10:50 – 11:20 am	Expectations for Elements F, G, and HWagner The expectations for Element F, G, and H will be reviewed to provide insight on the level of detail and effort needed to schedule implementation, describe interim milestones, and establish criteria to determine if load reductions are achieved.
11:20 – 12:00 pm	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 (Element F) as described in the final management strategy (Chapter 12.3 of the <i>Handbook</i>).
12:00 – 1:00 pm	Lunch
1:00 – 1:40 pm	Developing Interim Milestones & Criteria to Measure Progress ... Davenport This session will discuss developing interim measurable milestones (Element G) and establishing a set of criteria to measure progress (Element H) toward meeting water quality goals (Chapter 12.4-12.5 of the <i>Handbook</i>). This is the point in the WPP where 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.
1:40 – 2:40 pm	Designing & Implementing Effectiveness Monitoring – Element I.....Hauck This session will provide guidance on developing Element I (Chapter 12.6 of the <i>Handbook</i>). Selecting an appropriate experimental design that incorporates previous and ongoing monitoring efforts will be discussed.
2:40 – 3:10 pm	Putting It All Together Dictson 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 (Chapter 12.8-12.11 of the <i>Handbook</i>).
3:10 – 3:30 pm	Break / Hayride to River for Next Presentation <i>Please note: Participants will divide into 3 groups for the presentations below</i>
3:30 – 5:00 pm	Water Quality Monitoring: Practical Guidelines & Lessons Learned.....Harmel/Banks/Tidwell An overview of the how to use automated samplers and data sondes will be discussed. Practical guidance on installation and operation will be presented along with information on difficulties encountered and data uncertainty and how to communicate to stakeholders. In addition, a stream side presentation regarding the Texas Stream Team will describe how trained citizen monitoring efforts are valuable components to any WPP or ambient monitoring program. Staff will also demonstrate field collection data techniques and provide hands-on opportunities for interested participants. <i>*sessions are 30 minutes each</i>
6:45 pm	Dinner

Friday, November 8, 2013

Facilitator: Kevin Wagner

7:00 – 8:00 am	Breakfast
8:00 – 8:45 am	Implementing Watershed Protection and Management Strategies in Hickory CreekBanks This presentation will discuss implementing BMPs in Hickory Creek, Denton, Texas. The presentation will briefly discuss modeling and analyses conducted for the watershed and describe the process of working with modeling information, economic analyses, and a stakeholder group to target and implement demonstration management practices within the watershed. The presentation will also cover how the information learned during this process and additional analyses were used to implement best management practices in a large master planned development in the Hickory Creek Watershed.
8:45 – 10:00 am	Watershed Protection Plan Implementation in Oklahoma Phillips This session will focus on watershed protection plan development and implementation efforts in Oklahoma, their experiences, and lessons learned.
10:00 – 10:20 am	Break
10:20 – 10:50 am	Perspectives on Watershed Group Organization Dictson As watershed protection efforts move beyond planning stages, transition to implementation and maintaining public involvement raise some challenges with implications on long-term sustainability. This presentation will discuss approaches for sustaining your watershed group once your watershed plan has been developed.
10:50 – 11:05 am	Tracking WPP Implementation Wagner This session will focus on Arroyo Colorado Watershed Protection Plan implementation efforts built upon the stakeholder efforts and partnerships developed during the WPP development process. Topics include implementation strategies, adaptive management, and approaches to addressing long-term sustainability of WPPs (i.e. grant writing, developing 501(c)(3), collaborating with existing organizations, and creating community level commitment).
11:05 – 11:25 am	WPP Updates and the 4b Process in Plum Creek Dictson WPPs are living documents and need to be updated periodically. This session will discuss lessons learned during the biennial update to the Plum Creek WPP. Further, to delist a watershed as a result of development of a WPP, additional assurances must be provided. This session will also discuss the 4b process and lessons learned through the efforts in the Plum Creek watershed.
11:25 – 11:35 am	Course Wrap-Up Wagner This session will briefly review the 9 Key Elements and EPA Review Guide.
11:35 – 12:00 pm	Knowledge Assessment/Course Evaluation A post-course examination will be distributed 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; Lunch Certificates will be distributed as the class turns in their post-course exam and course evaluations.

#	First	Last	Agency/Organization
1	Sarah	Robinson	TIEAR
2	Leah	Taylor	TIEAR
3	Jenna	Jones	City of Waco
4	Lori	Hazel	Texas A&M Forest Service
5	Matt	Brown	TWRI
6	Faith	Hambleton	TCEQ
7	Bernadette	Davis	TCEQ
8	Sara	Eagle	TCEQ
9	Alex	Smith	TCEQ
10	Sandra	Arismendez	TCEQ
11	Mike	Marshall	IRNR/TWRI
12	Aye Aye	Kyi	Consultant
13	Kristen	Wickert	TX A&M Forest Svc.
14	Kayla	Rohrbach	Bandera Cty River Authority & GWD
15	Morgan	Ayers	Bandera Cty River Authority & GWD
16	Blake	Allredge	TAMU AgriLife Extension WFSC
17	Calvin	Clary	TIEAR-Tarleton State Univ
18	Teresa	Carrillo	Coastal Bend Bays Foundation
19	Brianna	Saenz	Texas A&M Kingsville
20	Aiyawarya	Parthasarathy	Texas A&M Kingsville

Watershed planning short course Nov. 4-8 in Bandera

View all articles by Paul Schattenberg —

October 21, 2013

BANDERA— The Texas Water Resources Institute will present a Texas Watershed Planning Short Course Nov. 4-8 in Bandera.

The five-day course will be held at the Mayan Dude Ranch, 350 Mayan Ranch Road, about 47 miles northwest of San Antonio.

The institute is part of Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service and the College of Agriculture and Life Sciences at Texas A&M University.

"Watershed protection plans and the stakeholder-driven watershed planning process instilled through the course have become the foundation for water quality improvement efforts in Texas," said Kevin Wagner, associate director at the institute and course leader.

Wagner said this course is one of the few in the country that builds upon the nine essential elements for watershed planning identified by the U.S. Environmental Protection Agency.

"Practitioners developing both watershed protection plans and total maximum daily load, or TMDL, implementation plans have participated in the course and are now using the techniques they learned during the course to address water quality issues statewide," he said.

In addition to EPA's nine elements, the course provides watershed coordinators and water resource professionals with guidance on stakeholder coordination, education and outreach; data collection and analysis; and the tools available for plan development.

"This information is presented through lectures and case studies," said Nikki Dictson, AgriLife Extension program specialist for the institute, College Station.

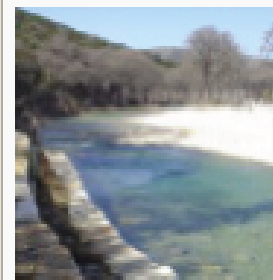
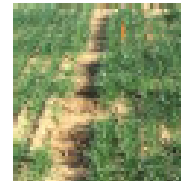
Wagner added that approximately 30 watershed planning efforts and almost a dozen more total maximum daily load implementation plans have benefited from the training. The plans have been financed by the Texas State Soil and Water Conservation Board and Texas Commission on Environmental Quality, the two state agencies responsible for Texas water quality.

Course registration is \$375 and will remain open until Oct. 25.

Additionally, a block of rooms at the Mayan Dude Ranch has been reserved at a special rate of \$121 per night, which includes lodging plus all meals, but reservations must be made by Oct. 25 to receive this special rate. Participants are asked to identify themselves as short course attendees when making reservations.

The upcoming short course is the seventh such program to be held. The course is funded by the Texas Commission on Environmental Quality and the EPA.

For more information on the course, registration and lodging arrangements, go to <http://watershedplanning.tamu.edu/> or contact Dictson at n-dictson@tamu.edu.



The Texas Water Resources Institute will present the Texas Watershed Planning Short Course from Nov. 4-8 at the Mayan Dude Ranch in Bandera. (Texas A&M AgriLife Extension Service photo)

Texas Watershed Planning Short Course

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Texas Watershed Planning Short Course

Instructor Biographies

Dr. Kenneth Edward Banks is currently employed as the Director of Environmental Services at the City of Denton, Texas and is an adjunct faculty member of the University of North Texas. His research interests include storm water, watershed management, aquatic toxicology, aquatic ecology, and fate and effects of contaminants.

He received his doctorate in Environmental Science from the University of North Texas and has worked on projects with the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Forest Service, and the Bureau of Land Management.

Michael R. Bira is with the U.S. Environmental Protection Agency Water Quality Protection Division Watershed Section. Bira graduated from the University of Tampa in Florida with a Bachelor of Science in Marine Biology and Chemistry. He earned a Master of Science in Aquatic Biology from Southwest Texas State University in San Marcos, Texas.

He began his career with EPA as an Environmental Scientist at Region 6 in Dallas in 1988. For the first two years, he served as a Hazardous Waste Enforcement Coordinator, and his duties included coordination of Federal enforcement actions against violators of regulations under the Resource Conservation and Recovery Act. Since 1990 Bira has been in the Water Quality Protection Division and worked with the Clean Lakes Program, Nonpoint Source Program, water quality standards, watersheds, nutrient criteria development, and water quality outreach.

As Volunteer Monitoring Coordinator for the region, Bira has been actively involved with citizen monitoring programs and assisting states and communities with addressing water quality problems through the watershed approach. He has helped conceptualize and develop volunteer water quality monitoring programs in Texas, Oklahoma, Louisiana, and Arkansas. He has assisted with training of State personnel and volunteer monitors and has assisted with federal financial support for citizen monitoring efforts.

Bira's current responsibilities for EPA Region 6 include Nutrient Coordinator, Volunteer Monitoring Coordinator, and Technical Lead for Nonpoint Source Program implementation in the State of Oklahoma.

Bira worked for five years as an Aquatic Biologist/Field Investigator for the Texas Water Commission (now Texas Commission on Environmental Quality), performing inspections and sampling of domestic, municipal, industrial, and agricultural wastewater dischargers, and coordinating the Commission's North Central Texas surface water monitoring program.

Mitch Conine currently serves as the Project Management Coordinator for the Texas State Soil and Water Conservation Board (TSSWCB) Nonpoint Source Management Program. Headquartered in Temple, Texas, the TSSWCB is the lead agency in Texas responsible for planning, implementing, and managing programs and practices for preventing and abating agricultural and silvicultural nonpoint sources of water pollution. His responsibilities include supervising and supporting the daily activities of the TSSWCB nonpoint source project managers. He has six years of experience in watershed assessment and planning, project implementation, and program management.

Conine is a graduate of Texas A&M University in College Station, where he earned a Bachelor of Science in Wildlife and Fisheries Science in December 2001. Prior to joining the TSSWCB staff as a nonpoint source project manager in 2007, he worked as a District Executive with Longhorn Council Boy Scouts of America from 2003-2007.

Thomas E. Davenport has worked for the U.S. Environmental Protection Agency since 1984 and has been EPA's National NPS Expert since 1991. He administers the Section 319 National Nonpoint Source Monitoring Program and provides technical and program assistance to the watershed, urban storm water wetlands, lakes, and TMDL and NPS programs nationally.

Davenport received a Bachelor of Science in Forestry and Natural Resource Management from the University of Wisconsin-Stevens Point in 1977 and a Master of Science from the University of Washington in Forest Hydrology in 1981. In 1982, he received a Master of Public Administration from Sangamon State University.

Davenport previously led the Water Program for the Great Lakes/Baltic Seas Watershed Management Capacity Building Project and was technical manager on the Chile Free Trade Environmental Project and Panama Canal Expansion Training. He serves as a resident faculty member and co-designer/manager of the Watershed Partnership Seminar for the Office of Personnel Management. He is currently working with Canada on the implementation of the Great Lakes Water Quality Agreement's Annex 4 provisions, and on an ongoing basis, he provides management and technical assistance to EPA Programs at the regional, national, and international levels.

While at the Illinois Environmental Protection Agency, Davenport assisted in the development and establishment of the State's Watershed, Clean Lakes and Nonpoint Source Programs. His responsibilities included the management of the USDA Rural Clean Water Program's Comprehensive Monitoring and Evaluation Project for Highland Silver Lake and the Blue Creek Special Water Quality Project.

Davenport has authored "The Watershed Project Management Guide" and coauthored the urban management measures chapter of the "Coastal Zone NPS Management Guidance" and the urban nonpoint source management chapter in the UNESCO publication, "Assessment and Control of Nonpoint Source Pollution of Aquatic Ecosystems/A Practical Guide." He previously served on the editorial board of EPA's Nonpoint Source News Notes newsletter and the Center for Watershed Protection's Watershed Protection Techniques Bulletin, and was agency advisor to the Conservation Technology Information Center and an associate research editor of the Journal of Soil and Water Conservation, as well as editorial board member.

Nikki Dictson is an Extension Program Specialist II for the Texas A&M Institute for Renewable Natural Resources and Texas Water Resources Institute in College Station. She received her bachelor's, with a double major in Wildlife Science and Fisheries Science, at New Mexico State University and her master's in Wildlife and Fisheries Science at Texas A&M University. Dictson is coordinating the Texas Stream and Riparian Ecosystem Education and the Texas Watershed Training programs, while also working on watershed planning and TMDL projects at the institute. During the previous seven years in Texas A&M's Soil and Crop Sciences Department, Dictson was the Coordinator for the Plum Creek Watershed Protection Plan and Implementation Program, developed many educational publications and outreach programs, and was on the team conducting the Geronimo and Alligator Creeks Watershed Protection Plan and the Texas Watershed Steward Educational Program. She has been on the planning team, a facilitator, and instructor at the Watershed Planning Short Course since the course's beginning.

Dictson has been with Extension for 11 years, beginning in the Rangeland Ecology and Management (RLEM) Unit where she coordinated the Water for Texans Educational Program — a statewide educational program of paired plot watershed demonstrations evaluating various management practices on runoff and sediment loss. While with the RLEM Unit, she also developed rangeland stream, riparian and upland health educational materials; developed an online RLEM 101 agent training course; and conducted field day trainings and educational programs across the state. Dictson has also been an instructor for workshops of the Texas Riparian Association and is currently on its Board. Prior to working with Extension, she was a Natural Resource Consultant in Seattle, working on a variety of watershed issues with a focus on biological assessments of major construction projects for endangered species issues with local, state and federal agencies.

Brian Fontenot currently works in the U.S. Environmental Protection Agency's Water Quality Protection Division Watershed Section. Fontenot grew up in Southeast Texas and finished his bachelor's degree in Wildlife and Fisheries Sciences from Texas A&M University in 2000. After spending time working as an Environmental Consultant in California and Nevada, he received his master's degree in Biology at the University of Texas at Tyler in 2003. He earned his doctorate in Quantitative Biology from the University of Texas at Arlington in 2009.

Fontenot is a biologist with extensive training in ecology, field techniques, statistics, genetics, and herpetology. He worked as a joint National Institute of Health postdoctoral fellow with UT Arlington and Indiana University for one year until accepting a job as a Life Scientist with EPA in 2010. He also conducts independent research with UT Arlington examining private drinking water well quality in areas of the Barnett Shale with unconventional natural gas extraction. Fontenot is the Region 6 Nonpoint Source Program Manager for Native American Tribes, the State of New Mexico, and the State of Arkansas, and he serves as the Regional Coordinator for EPA's Healthy Watersheds Initiative.

Ryan A. Gerlich is an Extension Program Specialist in the Biological and Agricultural Engineering Department for the Texas A&M AgriLife Extension Service. He received his bachelor's degree in Agricultural Systems Management from Texas A&M University and is pursuing a master's in Water Management and Hydrologic Science at Texas A&M University.

Gerlich is a TCEQ Licensed Irrigator, On-site Sewage Facilities (OSSF) Installer I and OSSF Maintenance Technician. He is also a Registered Inspector through the New England Onsite Wastewater Treatment Program. He is supporting the development of guidelines and curriculum for the inspection of conventional OSSFs in Texas. Gerlich is currently assisting to identify and inspect potentially failing systems along the Texas Coast. He also develops and delivers courses and educational materials to homeowners with OSSFs. Courses range from the two-hour introductory course to a six-hour course discussing the homeowner maintenance of aerobic treatment units.

Kyle Girten is the Team Leader for the Nonpoint Source Pollution Program in the Texas Commission on Environmental Quality (TCEQ)'s Water Quality Planning Division. He was hired to this position in June 2013. Girten previously worked for more than 12 years in TCEQ's Quality Assurance Section. During that time, he served as a QA Specialist for the NPS and TMDL Programs, developed policies and procedures for the agency, and performed technical audits of environmental laboratories across the state. Before working at TCEQ, he worked as an Analytical Chemist in a commercial environmental laboratory in Austin.

Girten received his Master of Public Affairs from the LBJ School of Public Affairs, University of Texas at Austin. He has a Bachelor of Science in Chemistry and a Bachelor of Arts in Anthropology from Indiana University.

Dr. Daren Harmel is a Research Agricultural Engineer and Director of the USDA-Agricultural Research Service (ARS) Laboratory in Temple, Texas. His research focuses on developing practical guidance for runoff and water quality data collection, determining the uncertainty in measured hydrology and water quality data, and quantifying the impacts of land use on water quality and hydrology.

Harmel received his doctorate in Biosystems and Agricultural Engineering from Oklahoma State University in 1997 with a major in Hydrology and Water Quality.

Harmel represents USDA-ARS on the National Water Monitoring Council Methods and Data Comparability Board.

Dr. Larry Hauck is the Lead Scientist at the Texas Institute for Applied Environmental Research (TIAER) at Tarleton State University located in Stephenville, Texas. He has been employed at TIAER for more than 15 years, and prior to his present employment worked for various governmental agencies and environmental consulting firms resulting in 30-plus years of professional experience. He is a Professional Engineer within the State of Texas and obtained his doctorate from The University of Texas at Arlington. As manager of the environmental sciences and economic program at TIAER, Hauck supervises a staff of about 20 full-time professionals, including chemists, biologists, economists, hydrologists and soil scientists, and typically six or more student workers and graduate assistants.

Hauck's research interests include landscape loading of nutrients in agricultural watersheds, biological and chemical response of receiving waters to nutrient enrichment, connection of land management of agricultural practices to receiving water quality, and development and application of watershed loading models and hydrologic/water quality models. He has recently been involved in projects involved with recreational and aquatic life uses of water bodies and applying the load duration curve method in the TMDL process. He is presently the Project Manager for several projects through the TCEQ Water Quality Planning Division.

Charlie MacPherson has exceeded the average life expectancy at a consulting firm by recently celebrating her 27th year at Tetra Tech, Inc. where she serves as the Head of Corporate Communications. She has worked with dozens of organizations ranging from her son's fifth grade science class to the Turtle Mountain Band of the Chippewa Indians to develop and effectively communicate environmental solutions to our everyday actions. For the U.S. Environmental Protection Agency, MacPherson co-authored the guidebooks "Getting In Step: A Guide to Effective Outreach in Your Watershed," "Getting In Step: A Guide to Engaging and Involving Stakeholders in Your Watershed," and the "Handbook for Developing Watershed Plans to Restore and Protect our Waters."

Debbie Magin is the Director of Water Quality Services for the Guadalupe-Blanco River Authority (GBRA), in Seguin, Texas. She received her Bachelor of Science degree in Aquatic Biology from Southwest Texas State University (now Texas State University) in 1976 and her Master of Science in Aquatic Biology from Southwest Texas State University in 1988.

Magin represents GBRA in the Plum Creek Watershed Partnership and is the GBRA Project Manager for the Geronimo and Alligator Creek Watershed Protection Plan. She has been with GBRA for 37 years, beginning in the Regional Laboratory as an Laboratory Analyst. In her capacity as Director of Water Quality Services, she is responsible for managing the GBRA Clean Rivers Program activities. She also oversees laboratory and water quality monitoring activities, and assists GBRA water and wastewater operations by renewing permits, consulting on rules and regulations, and managing the GBRA security policy. Magin oversees the Aquatic Vegetation Management Program at GBRA, provides technical support to GBRA divisions and customers, and manages several water quality and monitoring grants.

She has served as President of the Texas Water Utilities Association and the TWUA Laboratory Analyst Association and is on the Board of the San Antonio Bay Foundation.

Shanon Phillips is the Water Quality Division Director for the Oklahoma Conservation Commission (OCC). She earned her bachelor's degree in Biology from Kansas State University and her master's in Zoology from Oklahoma State University, studying nutrient impacts in lakes. She has been working on water quality protection programs in Oklahoma State government for more than eighteen years. Her agency is the lead agency for nonpoint source pollution. Much of the OCC's work focuses on collaboration with Conservation Districts to help agricultural producers protect water quality and reduce soil erosion. The OCC's water quality programs have been recognized nationally for efficiency, innovation, leadership, and success.

Phillips lives in Oklahoma City with her husband Jon and 11-year-old son Cooper. The daughter of two science teachers, she grew up with an appreciation for the importance of environmental protection. She is a Board Member of the Oklahoma Clean Lakes Association and a Member of the State Chapter of the Soil and Water Conservation Society.

Travis Tidwell joined the Texas Stream Team in June of 2012. Before taking the position as the Volunteer Coordinator, Travis worked with the National Oceanic and Atmospheric Administration on the Natural Resource Damage Assessment of the Deepwater Horizon oil spill. Prior to that, he worked for the Texas Parks and Wildlife Department at the AE Wood Fish Hatchery in San Marcos, Texas, and he also worked for the National Marine Fisheries Service as a Fishery Observer in the Gulf of Alaska and Bering Sea.

Tidwell received a Bachelor of Science in Biology from the University of Texas at Austin and a Master of Science in Marine Science from the University of Texas Marine Science Institute in Port Aransas, where he studied the early life history of billfish.

Tidwell lives in New Braunfels, where he spends as much of his free time as he can fly fishing and kayaking on the Guadalupe River.

Dr. Kevin Wagner is the Associate Director of the Texas Water Resources Institute and the Texas A&M Institute of Renewable Natural Resources in College Station. He received his bachelor's degree in Biology at Howard Payne University, his master's degree in Environmental Science from Oklahoma State University, and his doctorate in Agronomy at Texas A&M University.

Wagner has 17 years of experience in watershed assessment and planning, project implementation, and program management. His experience ranges from water sampling and analysis to developing projects and policies to restore impaired water bodies. He has conducted research on several water quality issues, including an evaluation of lake sediment, development of lake health indicators, and assessment of bacteria runoff from grazing lands.

Level of Satisfaction	1	2	3	4	5	No Answer	Total	Average
Overall Course Rating			2	9	5	4	20	4.2
Nine Elements of a Watershed Protection Plan (Bira)			2	11	7		20	4.3
Perspectives on WPPs (EPA, TSSWCB,TCEQ)		2	2	7	8	1	20	4.1
Working with Stakeholders to Move The Process Forward (MacPherson)			1	3	16		20	4.8
Partnership Building Experiences in Plum Creek (Dictson)			3	4	13		20	4.5
Expectations for Element E (Dictson)	1		1	6	12		20	4.4
Using Outreach to Develop & Implement WPPs (MacPherson)			1	5	14		20	4.7
Overview of Educational Programs (Wagner) mislabeled on evaluation			1	5	3	11	20	4.2
Expectations for Element A (Fontenot)			3	11	5	1	20	4.1
Defining the Scope of the WPP (Bira)			3	6	9	2	20	4.3
Gathering data to assess your watershed (Dictson)			5	6	9		20	4.2
Analyzing Data to Characterize Your Watershed (Davenport)		2	7	3	7	1	20	3.8
The Good, the Bad, and the Ugly (MacPherson)				5	15		20	4.8
Expectations for Element B (Bira)			3	7	8	2	20	4.3
Overview of Models for Estimating Pollutant Loads & Reductions (Hauck)			5	6	8	1	20	4.2
Simple Tools for Estimating Loads and Load Reductions (Hauck)			5	7	8		20	4.2
Overview and Expectations for Element C (Fontenot)			3	7	10		20	4.4
TSSWCB Presentation (Conine/Wagner presented because Conine's family was sick)			3	2	4	11	20	4.1
Agricultural NPS Measures (Wagner)			5	7	7	1	20	4.1
Urban NPS Measures (Davenport)			4	7	9		20	4.3
Wastewater Treatment Systems/Issues (Magin/Gerlich)		1	3	5	9	2	20	4.2
Expectations for Element F, G, and H (Wagner)		1	4	6	8	1	20	4.1
BMP Selection: Economics, and Finance Issues (Banks)	1		1	10	7	1	20	4.2
Targeting Critical Areas and Scheduling Implementation (Davenport)			3	7	8	2	20	4.3
Developing Interim Milestones & Criteria to Measure Progress (Davenport)		1	3	9	6	1	20	4.1
Designing & Implementing Effectiveness Monitoring - Element I (Hauck)			4	7	7	2	20	4.2
Water Quality Monitoring (Banks, Tidwell)			1	8	10	1	20	4.5
Expectations for Element D (Bira)			2	8	6	4	20	4.3
Implementing Watershed Protection & Mgmt Strategies in Hickory Creek (Banks)	1	1	1	4	12	1	20	4.3
Putting It All Together (Dictson)			2	9	7	2	20	4.3
Tracking WPP Implementation (Wagner)	1		1	7	11	0	20	4.4
Watershed Protection Plan Implementation in Oklahoma (Phillips)			2	4	13	1	20	4.6

Level of Satisfaction	1	2	3	4	5	No Answer	Total	Average
Perspectives on Watershed Group Organization (Dictson)			2	5	7	6	20	4.4

3 What could we have done better in order for you to have been completely satisfied?

- 3 I'm extremely happy with the course
- 3 Integrate more activities outside or break up the outdoor demo to have one part each day. Have activities where we could get up out of the chairs and on our feet more
The outdoor demonstrations could have been different than the outdoor demos from the developing a monitoring plan
- 2 lots of repetition, lectures got a little overbearing
too much time in chairs
- 3 more hands on interactive learning
- 3 more open discussion, we spend too much time sitting around looking at powerpoints, vary presentation types
bring in more people from the field, not "office" people
more specific examples of BMPs and why they were chosen
- 3 No answer

4 Most significant things learned from the course

- Everything was very valuable
- The step by step processes to establish partnerships
- 5 the framework of the WPP, funding info, monitoring requirements/standards
case studies and first-hand experience
- 3 strategies for engaging stakeholders
- 5 how to work through 9 elements
modeling and what models are used and why
the process
more info on NPS BMPs

5 Topics to discuss in greater detail

- The SWAT models and hydrolab
- Routine Monitoring and modeling
- 2 stormwater/BMP monitoring
- 3 the building of the group of stakeholders
stream ecology
funding sources
how to compare all the elements together
Water quality standards
putting it all together examples please
- 7 no answer

6 Topic of interest but not covered by course

- presenting modeling data to everyday or nonprofessional people
- brief breakdown of water chemistry at the beginning
- evening time allowed for networking
- environmental statistics

	<p>what type of stormwater activities can be funded under the 319 money?</p> <p>how all the organizations contribute to the process and their responsibilities in improving impairments</p> <p>water quality basics</p> <p>more hands on training</p> <p>GIS mapping or watersheds</p>
10	no answer
7	<p>Topics to be omitted</p> <p>Bank's presentations were a little long and overwhelming. Very interesting but long</p> <p>The Septic systems</p> <p>Oil and Gas because it did not apply to WPPs</p> <p>I was not interested in modeling topics</p> <p>overview models-this was way too technical</p> <p>Design, inspection, instalation, POS-all this seems like homeowner education and not important for WPP</p> <p>modeling presentations were not specific enough about how to conduct them, how to get them started</p>
13	none
8	<p>How satisfied were you with the quality of the course material? Are there additional resources that should be provided in the future?</p>
3	<p>Very Satisfied</p> <p>The materials were of high quality, however, they were repetitive</p> <p>more background reading material prior to start of course would help me prepare for the course and build knowledge beforehand</p>
3	<p>materials were great</p> <p>greatly satisfied</p> <p>I got very lost when modeling was discussed and maybe there should have been more on organization and implementation</p> <p>Excellent materials</p> <p>satisfied, very thorough, some repetition</p> <p>course materials were educational and efficient</p> <p>need more case studies/real world examples from Texas on writing plans</p> <p>awesome worksheets, actual student involved exercises activities</p> <p>pretty satisfied</p> <p>good material and handouts</p> <p>a flash drive would have been more convenient</p>
1	no answer
9	<p>What is your level of satisfaction with the sequencing of topics?</p>
2	it was arranged well

- sequencing was good
wished elements were in order
- 2 pretty satisfied
awesome
3 on a scale of 1-5
I think it would have been beneficial to separate the nine elements from the workshop-maybe 1 whole day is the 9 elements, then after we work in groups to complete that task
ok
similar topics should have been combined or presented behind each like topic
- 3 very satisfied
pretty high, sometimes I got confused but never too much
- 4 Pretty good
ok, but information overload makes it hard to retain everything we discussed

10 What are the first 3 steps you'll implement as a result of taking this training?

- 2 evaluating current land use and history
- 5 begin establishing relationships with potential stakeholders
start identifying potential target areas
discuss priority areas with the stakeholders
- 2 gather data to put into modeling
organize monitoring data
research past TDML
take an active role in future WPP development
Form a stream team
Check the BMP effectiveness
- 2 Read the EPA handbook
Create a plan
improvements in modeling process
continue to review the elements

11 What could the state and federal agencies do best to serve you in WPP efforts?

If they could travel more at times I think it could help and possibly improve stakeholders opinion of them
give feedback about the progress of the WPP on a regular basis
outreach, be on call, answer questions, be willing to show up
More funding of course :)
If they could describe what they expect and what they are willing to do to help
show up to some meetings
better coordination for info and funding
give specific details of success stories good examples to model
assist in education to the general public

host more educational events

12 What other tools, training, capacity building would you suggest to serve your efforts in WPP planning?

training that works through a completed WPP's statistical approach

power and training

attend other landowner openhouses study success stories

training in models, wather quality monitoring plan design

building concensus; croud motivation

how to organize actual groups to get the optimum production and planning, how to delegate duties, etc

actually wrtie plan, even if hypothetical

I'd like to see more training on where and how to gather necessary data, education, etc

meeting facilitation, shareholder engagement

web, fact sheets, quuizzes

have training on the 9 elements for the stakeholdesr in our matershed and meet more frequently as a stakeholder meeting working community

the hydrolabs would work great

13 Satisfaction with location and facility?

It was different, good

location and facility could not have been better. Great people, food, and experience

I absolutely loved it. Thank you so much for your professionalism

4 on a scale of 1-5

Wonderful!

2 Satisfied. But I think we should have some lectures outside in a watershed. Utilize more the availability of Mayan's Creeks.

3 Great location for such an extensive training

Very Satisfied

4 Location and facility were very good

2 Awesome!

14 How would you rate the WPP you are involved as of meeting the intent of EPA's guidelines?

need to establish more monitoring plans and narrower scope

too early to tell

2 we haven't started ours yet but this program will certainly help us get there one day

I would rate my WPP as a 8 out of 10

low, just working on starting

a 8/10 score now; we need to update our current WPP to meet the 9 requirements

15 In your watershed, what are the local strengths for success?

Texas A&M Kingsville, UTPA/UTB and other state agencies are involved in the WPP as well as city representatives
past work, good interest, strong agency support

People in my watershed are very eager to assist in reclassifying or getting their creek de-listed. This really helps my team to complete our goal

stakeholder involvement

great county involvement

motivated government and elected officials

funding potential for urban areas

high public interest

landowner support, research institutes as past and potentially future projects, trends of dairies moving to West Texas
partnerships

16 In your watershed what are the local obstacles for success?

conflicting goals of partners, remaining on the fence and not on either side for too long with opinion

dairies, lack of money to change waste management practices at the dairies, lack of cooperation, trust from dairy farmers due to past lawsuits

limited timeframe to build stakeholder relationships

rapid residential expansion

apathy and fear, absentee landownership, drought

not educated about issues, will have to spend \$, it's their land, getting them to believe e-coli in water is there and a problem

man in power of our district, public interest

very large watershed, wary of government programs

in my past projects, I have had difficulty finding GIS Shape files for landowners along my creeks. I have put in what seems like overkill on time and resources

trying to find people that own land along my creeks

fear from municipalities

our watershed has a lot of cities within it so getting all the cities to work together can be challenging at times

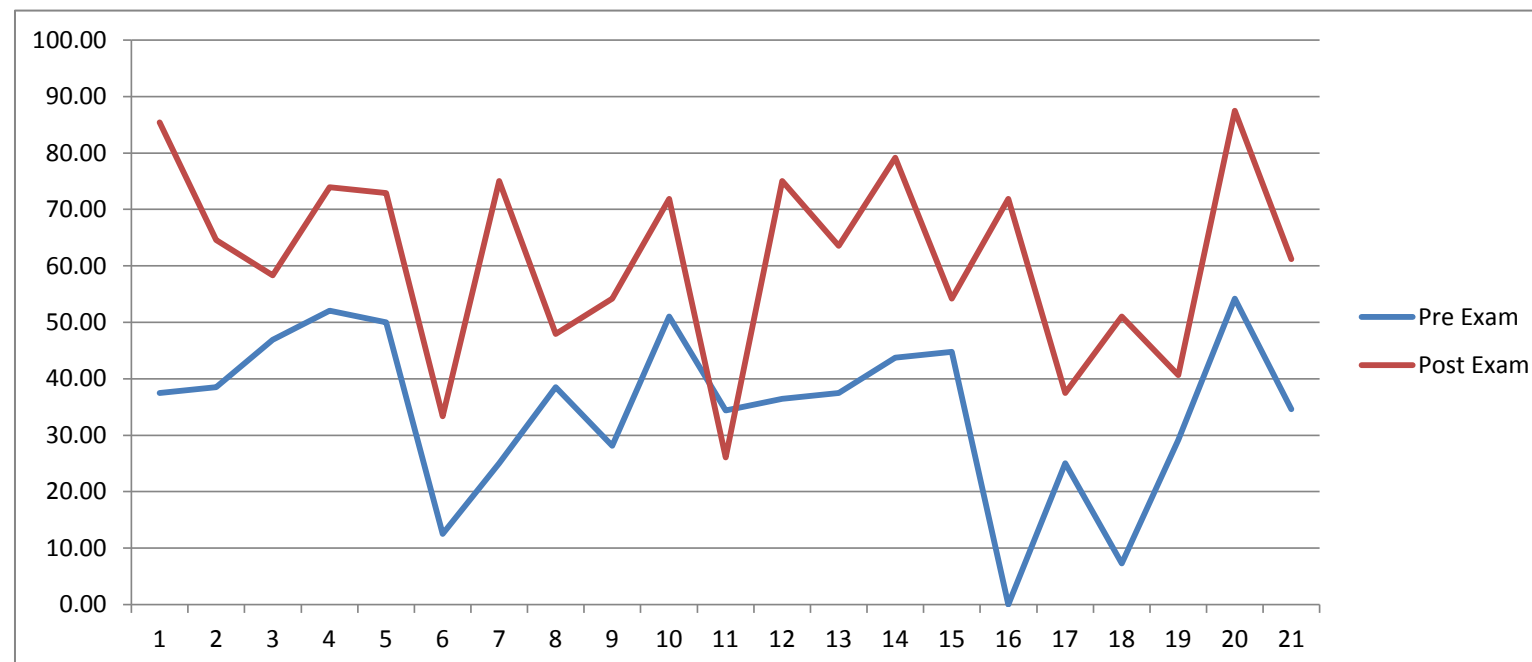
Additional Comments

The course was great. It was a little hard to sit and watch powerpoints for so long sometimes but the info was great. The networking was awesome. Having people from so many areas was a great experience and I enjoyed getting to know everyone. Although it's been a long week and I will be glad to get back home I am a little sad that it is over.

Thank you for a wonderful week :)

Mike Bira was fantastic

#	First Name	Last Name	Company/County/Organization	Pre Exam	Post Exam
1	Calvin	Clary		37.50	85.42
2	Todd	Thomas		38.54	64.58
3	Sarah	Robinson		46.88	58.33
4	Faith	Hambleton		52.08	73.96
5	Mike	Marshall		50.00	72.92
6	Jenna	Jones		12.50	33.33
7	Lori	Hazel		25.00	75.00
8	Kayla	Rohrbach		38.54	47.92
9	Kristen	Wickert		28.13	54.17
10	Matt	Brown		51.04	71.88
11	Aiyswarya	Parthasarathy		34.38	26.04
12	Brianna	Saenz		36.46	75.00
13	Leah	Taylor		37.50	63.54
14	Sarah	Eagle		43.75	79.17
15	Morgan	Ayers		44.79	54.17
16	Bernadette	Davis		0.00	71.88
17	Aye Aye	Kyi		25.00	37.50
18	Teresa	Carrillo		7.29	51.04
19	Alexandra	Smith		29.17	40.63
20	Blake	Alldredge		54.17	87.50
<i>Average</i>				34.64	61.20



PRE EXAM AVG = 34

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POST EXAM AVG = 61

QUESTION (multiple choice only)	ANSWER	Pre Exam		Post Exam	
		# Missed	Total Exams	# Missed	Total Exams
Who is ultimately responsible for approving watershed plans?	Stakeholders	19	20	6	20
Load duration curves can estimate loading during time periods when there is no sampling by establishing relationships between:	Stream flow and pollutant concentration	11	20	8	20
Which is the more accurate method of estimating pollutant loads?	Calculation of load based on monitoring data	11	20	3	20
According to the EPA Handbook, what is the preferred method for evaluating BMP efficiency during watershed planning?	Model BMP effects	16	20	12	20
One of the most common reasons why water quality control measures fail is failure to:	Budget and fund maintenance costs	17	20	14	20
When developing management measures for watersheds with multiple pollutant sources, which of the following aids in determining BMP effectiveness?	Proximity to impaired segment	16	20	16	20
The Element, "interim measurable milestones," outlines how you will measure:	Progress in implementing the management measures	18	20	15	20
What factors need to be taken into account when developing an implementation schedule within your watershed protection plan?	all of the above	3	20	2	20
What hydrologic unit category does EPA recommend for watershed planning?	HUC 12	13	20	2	20
At a minimum, what must you measure to evaluate a load reduction?	Concentration and flow	7	20	6	20
Which of the following questions is most likely to require a model to answer?	Which combination of BMPs will most effectively meet load targets?	9	20	3	20
The three agencies responsible for implementing agricultural BMPs in Texas are the local Soil and Water conservation Districts, the Texas State soil and Water conservation board, and the	Natural Resources Conservation Service	16	20	9	20
Responsibility for decision making regarding the management of water resources are found at what level?	Local	12	20	10	20
The 4 most important types of data you will need for characterizing a watershed are (1) physical and natural features, (2) land use and population characteristics, (3) _____, and (4) _____. (Circle the two that apply	waterbody conditions and pollutant sources	14	20	16	20
When building partnerships, the first step is to:	identify key stakeholders	11	20	1	20
When characterizing a watershed, the first step is to:	gather existing data and create a watershed inventory	6	20	5	20