

**Summary Page for the  
CWA Section 319(h)  
Silvicultural Nonpoint Source Pollution Abatement and Prevention Project**

- 1. Title of Project:** Texas Silvicultural Nonpoint Source Pollution Abatement and Prevention Project
- 2. Project Goals/Objectives:** The project will result in an improvement in water quality in East Texas. This will be documented by increasing statewide forestry BMP implementation rates to 93%, preventing 12,000 tons of sediment from reaching East Texas streams per year, preventing 96,000 tons of sediment from eroding off East Texas forestlands per year, and collecting additional data to determine the effectiveness of the Texas forestry BMPs. These goals will be achieved by 1) evaluating statewide silvicultural BMP implementation, 2) providing technical assistance to landowners, loggers, and foresters 3) providing education on BMPs to the forestry community and general public 4) coordinating project efforts with Soil and Water Conservation Districts (SWCDs) and natural resource agencies, and 5) collecting additional data on the BMP Effectiveness Monitoring project. Load reductions will be calculated using the Forest Land Erosion Evaluation for East Texas methodology developed by George Dissmeyer, USDA Forest Service Region 8 Hydrologist (retired).
- 3. Project Tasks:** 1) BMP Implementation Monitoring, 2) Deliver technical assistance, 3) BMP Education, 4) Project Coordination, and 5) BMP Effectiveness Monitoring
- 4. Measures of Success:** An increase in BMP implementation, mainly due to educational activities and technical assistance is expected. An increase in voluntary BMP implementation to 93% will show the success of this project. Also, when quantifying load reductions, a significant increase in the tons of sediment prevented from reaching streams each year is expected from BMP implementation.
- 5. Project Type:** Statewide  Watershed  Demonstration  TMDL
- 6. Waterbody Type:** River  Groundwater  Other
- 7. Project Location:** East Texas, see Figure 1.
- 8. NPS Management Program Reference:** State of Texas Agricultural/Silvicultural Nonpoint Source Management Program, approved February 25, 2001.
- 9. NPS Assessment Report Status:** Impaired  Impacted  Threatened
- 10. Key Project Activities:** Hire Staff  Monitoring  Regulatory Assistance  Technical Assistance  Education  BMP Implementation  Demonstration Project  Other
- 11. NPS Management Program Elements:** Implementing Milestones from the “1999 Texas Nonpoint Source Pollution Assessment Report and Management Program”, which will be implemented include: (1) Coordination with federal, state, and local programs (2) TSSWCB is committed to technology transfer, technical support, administrative support and cooperation between agencies and programs for the prevention of NPS pollution.
- 12. Project Costs:** Federal (\$574,521); State/Local (\$383,014); Total (\$957,535)
- 13. Project Contractor:** Texas Forest Service
- 14. Project Period:** September 1, 2005 – August 31, 2008

## **WORKPLAN**

### **Texas Silvicultural Nonpoint Source Pollution Abatement and Prevention Project**

FY05 CWA Section 319(h)

9/1/05 – 8/31/08

#### **Problem/Need Statement:**

Many water bodies in East Texas have been listed on the 2002 303(d) list due to dissolved oxygen (D.O.) standard violations (see Table 1). These violations may be caused by point source and/or nonpoint source (NPS) contamination. Significant forestry production occurs in this region. Silvicultural best management practices (BMPs) need to be adopted to abate and prevent NPS pollution. Their effectiveness also needs to be monitored to ensure water quality protection.

The project concentrates in a twenty eight SWCD area in East Texas (see figure 1). These SWCDs include the following: Red River County, Bowie County, Hopkins-Rains, Sulphur-Cypress, Marion-Cass, Wood, Upshur-Gregg, Harrison County, Smith County, Rusk, Panola, Cherokee County, Nacogdoches, Shelby, Davy Crockett–Trinity, Upper Neches, Pinewoods, Walker, Polk-San Jacinto, Long Leaf, Jasper-Newton, Montgomery County, Harris, Lower Trinity, Lower Neches, Coastal, and Lower Sabine-Neches.

Figure 1: Project Location Map



**Table 1: Impaired D.O. Segments within Project Area and Effectiveness Monitoring Sites**

Segment Name	Segment #	HUC	Category	Priority
Wright Patman Lake	0302	11140302	5c	D
White Oak Creek	0303B	11140303	5b	S
Caddo Lake	0401	11140306	5c	D
Harrison Bayou	0401A	11140306	5c	D
Big Cypress Creek Below L.O.T.P.	0402	11140306	5c	D
Black Cypress Bayou	0402A	11140306	5c	D
Lake O' The Pines (L.O.T.P.)	0403	11140305	5c	D
Black Bayou	0406	11140305	5b	S
James' Bayou	0407	11140306	5c	D
Little Cypress Bayou	0409	11140307	5c	D
Nichols Creek	502A	12010005	5c	D
Toledo Bend Reservoir	504	12010004	5c	D
Grace Creek	0505B	12010002	5c	D
Wards Creek	0505G	12010002	5c	D
Harris Creek	0506A	12010002	5b	S
Adams Bayou Above Tidal	0508A	12010005	5b	S
Cow Bayou Above Tidal	0511A	12010005	5c	D
Coon Bayou	0511B	12010005	5c	D
Cole Creek	0511C	12010005	5c	D
Star Lake Canal	0601A	12020003	5c	D
Booger Branch	602A	12020003	5b	S
Pine Island Bayou	607	12020007	5b	S
Boggy Creek	607A	12020007	5c	D
Little Pine Island Bayou	607B	12020007	5c	D
Willow Creek	607C	12020007	5b	S
Beech Creek	0608A	12020006	5c	D
Cypress Creek	608C	12020006	5c	D
Sam Rayburn Reservoir	0610	12020005	5c	D
Angelina River/Sam Rayburn Reservoir	615	12020005	5c	D
Lake Livingston	0803	12030202	5c	D
Walker Creek – S Cherokee Co.	NA	12020004	NA	NA
Johnson Creek – NE Houston Co.	NA	12020002	NA	NA
E Prong McKem Creek – NW Newton Co	NA	12020005	NA	NA
Unnamed Creek – NW San Augustine Co.	NA	12020005	NA	NA

The Texas State Soil and Water Conservation Board (TSSWCB) administers and carries out Texas' soil and water conservation law, and coordinates Texas' soil and water conservation program with SWCDs. The TSSWCB is the lead agency in Texas for the management of agricultural and silvicultural nonpoint source pollution, as designated under Title 7, Chapter 201, Section 201.026 of the Agriculture Code of Texas. Historically, the TSSWCB has shared its silvicultural responsibilities by contracting projects with the Texas Forest Service (TFS).

Past TFS projects have resulted in the institutionalization of various BMP programs. For example, forest products companies, who own and manage over two million acres of

commercial timberland in Texas, now have very strict internal BMP policies, including internal BMP implementation programs that address not only company owned land, but also purchased timber. TFS personnel recommend BMPs to be installed in all applicable management plans written for forest landowners. TFS Foresters share their working knowledge of BMPs with landowners in one-on-one interactions. BMP programs have become a regular component of landowner meeting discussions and public interest groups regularly request silvicultural BMP presentations.

Collecting additional data on the BMP Effectiveness Monitoring project is critical in order to determine BMP effectiveness. Without accurate results, the *Texas Forestry Best Management Practices* handbook will not be able to incorporate some of the findings.

The continuation of a strong, statewide presence through educational outreach and implementation evaluations is necessary. BMP implementation evaluations are the best measure of success for the non-regulatory program. Evaluations also ensure targeted BMP implementation within critically sensitive areas as well as identify any weaknesses in the BMP guidelines. This project will continue to offer BMP educational programs to additional audiences, including absentee landowners. A comprehensive approach with continuing interagency coordination and public involvement will also be crucial.

### **General Project Description:**

This project will reduce significant risks to water quality from silvicultural NPS pollution by implementing BMPs and increasing silvicultural NPS awareness. This will be done by completing a statewide evaluation of silvicultural BMP implementation, providing technical assistance, education, coordination, and monitoring the effectiveness of forestry BMPs.

It is necessary to assess the voluntary adoption of Texas' recommended BMPs by forest landowners and producers. In fact, due largely to the past performance of previous educational projects, private landowners have reached an all time high in BMP implementation. However, further evaluation shows that some BMPs may not be installed correctly or at all in some areas. These critical areas will be identified by the implementation evaluation task of this project. A statewide evaluation program will track voluntary BMP implementation by conducting 150 assessments of recently logged tracts. Data will be entered into a computer database for storage and retrieval. Global Positioning Systems (GPS) and Geographic Information Systems (GIS) will be used to record BMP site evaluations and their proximity to 303(d)-listed stream segments. A final report will be produced in the summer of 2008, documenting the results. A statistical guide will also be produced to assist the other states in conducting this monitoring.

The TFS, in cooperation with local SWCDs, will offer technical assistance to varying interest groups. BMP workshops will be provided to foresters, logging contractors, forest landowners, and other interested groups that focus on the proper implementation of BMPs. Forested wetlands provide many important benefits to the environment, making

mitigation critical when these areas are developed. The TFS will investigate this process, enabling it to provide technical assistance to involved parties. The Tree Farm Program, a voluntary certification program designed to encourage the use of good forest management and BMPs, will be promoted to forest landowners. The TFS will also provide leadership training to the Texas Forest Landowners Council, allowing them to build and maintain strong local associations, which ultimately leads to sound forest management, protecting water quality. TFS foresters provide forestry and water quality expertise to thousands of people every year through individual interactions. These types of interactions are vital to increasing BMP implementation rates and will continue throughout the project.

Educational outreach programs will also be an integral part of this task. New and innovative technology transfer such as commercials and hands-on interactive displays will educate and encourage project participation. Local media will be used to promote project tasks, and a quarterly silviculture newsletter will promote various BMPs to landowners and natural resource professionals. This will increase communication, maintaining frequent, periodic technology transfer between natural resource professionals and forest landowners. Another innovative opportunity to promote BMPs to the general public is through the Teachers Conservation Institute, a week long environmental education session for teachers. This program can have a tremendous impact when teachers take what they learn back to their classrooms.

This project will also provide a one year extension on the FY 03 BMP Effectiveness Monitoring Project, allowing the TFS to continue data collection through the summer of 2007. This is critical in order to allow for a better understanding of BMPs and their effectiveness.

The TFS will lead and coordinate this project. The agency will maintain the excellent coordination among federal, state, and local agencies and entities, ensuring effective performance. The TFS will continue to lead the wetland BMP coordinating committee. The agency will also be an active participant in the SGSF water resources committee and four state BMP meeting. The TFS will supply all project deliverables to the TSSWCB project manager. Finally, the TFS will cooperate with and involve SWCDs and TSSWCB field representatives in all project activities, as appropriate.

**The Objectives of this Project are as Follows:**

- 1.) To improve water quality in East Texas and the 303(d)-listed segments' watersheds through the implementation of BMPs.
- 2.) Cooperate with and involve SWCDs and TSSWCB field representative in all activities associated with the project, as appropriate.
- 3.) To provide technical assistance to landowners, loggers, and foresters.
- 4.) To increase the awareness and general understanding of BMPs to forest landowners, natural resource professionals and the general public.
- 5.) To coordinate project efforts with natural resource agencies, and project participants.
- 6.) To assess and map silvicultural BMP implementation and effectiveness.

**Tasks, Objectives, Schedules, and Estimated Costs:****TASK 1: Statewide Evaluation of BMP Implementation**

Costs: \$229,808.45 (Federal); \$153,205.63 (Non-Federal Match); \$383,014.08 (Total)

**Objective:** To assess the voluntary adoption of Texas' recommended BMPs by forest landowners.

**Subtask 1.1** The TFS, in cooperation with SWCDs, will conduct 150 BMP implementation evaluations on tracts that meet suitability criteria. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 1.2** The TFS will provide BMP technical assistance during evaluations to loggers, landowners, and foresters, if applicable. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 1.3** The TFS will create and maintain a BMP GIS database for twelve digit Hydrologic Unit Codes. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 1.4** The TFS, in cooperation with SWCDs, will prepare and distribute a BMP Implementation Report to landowners and other interested entities. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 1.5** The TFS, in cooperation with the SWCDs, will produce a statistical guide for BMP Implementation Monitoring in the Southeastern United States. (Start Date: Month 1; Completion Date: Month 34)

\*The TSSWCB project manager will be involved in the development and approval of all press releases, and workshop information (as they relate to TSSWCB programs) prior to dissemination.

**Deliverables:**

- 150 site BMP implementation evaluations with educational feedback to each forest landowner
- BMP implementation Rate Evaluation Report
- Produce GIS maps, which document BMP implementation sites in relation to 303(d)-listed segments.
- Statistical Guide for BMP Implementation Monitoring

**TASK 2: Technical Assistance Delivery**

Costs: \$114,904.23 (Federal); \$76,602.82 (Non-Federal Match); \$191,507.05 (Total)

**Objective:** To provide technical assistance to landowners, loggers, foresters, and other interested groups.

**Subtask 2.1** The TFS, in cooperation with TSSWCB, will conduct BMP training workshops for loggers, foresters, and landowners for the promotion of conservation programs. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 2.2** The TFS will develop and provide educational information to absentee forest landowners. (Start Date: Month 8; Completion Date: Month 34)

**Subtask 2.3** The TFS will investigate wetland and wetland timber use mitigation. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 2.4** The TFS will provide technical assistance to individual forest landowners. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 2.5** The TFS will promote the Tree Farm Program to forest landowners. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 2.6** The TFS will provide leadership training to the Texas Forest Landowners Council. (Start Date: Month 1; Completion Date: Month 34)

\*The TSSWCB project manager will be involved in the development and approval of all press releases, and workshop information (as they relate to TSSWCB programs) prior to dissemination.

**Deliverables**

- Agendas for 3 BMP training workshops per year
- Number of online BMP refresher course participants
- List of Tree Farm Certifications and Reinspections

- Leadership training materials provided to TFLC

### **TASK 3: BMP Education**

Costs: \$86,178.17 (Federal); \$57,452.11 (Non-Federal); \$143,630.28 (Total)

**Objective:** To increase water quality and BMP awareness to forest landowners, natural resource professionals, and the general public.

**Subtask 3.1** The TFS will give BMP presentations to organizations in the 303(d)-listed segment watersheds. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.2** The TFS will coordinate and participate in the Teachers Conservation Institute. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.3** The TFS will distribute a quarterly newsletter to natural resource professionals in Texas, including state and federal agency personnel. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.4** The TFS will distribute a quarterly newsletter to forest landowners in 303(d) listed watersheds. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.5** The TFS will coordinate forestry tours for groups who are interested in promoting BMPs. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.6** The TFS will coordinate county landowner association workshops (Start Date: Month 1; Completion Date: Month 34)

**Subtask 3.7** The TFS will display a BMP exhibit at local businesses, county fairs, and other suitable locations in 303(d)-listed segment watersheds. (Start Date: Month 1; Completion Date: Month 34)

\*The TSSWCB project manager will be involved in the development and approval of all press releases, and workshop information (as they relate to TSSWCB programs) prior to dissemination.

### **Deliverables**

- Agenda for the Teachers Conservation Institute
- Twelve newsletters to natural resource professionals
- Twelve newsletters to forest landowners
- List of Forestry Tours focusing on BMPs to interested groups
- Photos and log of display booth exhibits

#### **TASK 4: Project Coordination**

Costs: \$22,980.85 (Federal); \$15,320.56 (Non-Federal Match); \$38,301.41 (Total)

**Objective:** To coordinate project efforts with natural resource agencies, and project participants.

**Subtask 4.1** The TFS will continue to host the Wetland / BMP coordinating committee. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 4.2** The TFS will participate in the four state BMP meeting. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 4.3** The TFS, TSSWCB, SWCDs, NRCS, USDA Forest Service and EPA will maintain their excellent cooperative relationship. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 4.4** The TFS will work with local media to promote project tasks. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 4.5** The TFS will actively participate in the Southern Group of State Foresters Water Resources Committee. (Start Date: Month 1; Completion Date: Month 34)

**Subtask 4.6** The TFS will closely follow the Healthy Forest Restoration Act. (Start Date: Month 1; Completion Date: Month 34)

\*The TSSWCB project manager will be involved in the development and approval of all press releases, and workshop information (as they relate to TSSWCB programs) prior to dissemination

#### **Deliverables**

- Agendas and list of participants that attend the Wetland / BMP Coordinating Committees, 4-state BMP meeting, and SGSF Water Resources Committee
- Newspaper articles

#### **TASK 5: BMP Effectiveness Monitoring**

Costs: \$120,649.43 (Federal); \$80,432.96 (Non-Federal Match); \$201,082.39 (Total)

**Objective:** To assess the effectiveness of Texas' recommended BMPs during forestry operations.

**Subtask 5.1** The TFS will extend the FY 03 BMP Effectiveness Monitoring Project for 1 year. (Start Date: Month 1; Completion Date: Month 36)

\*The TSSWCB project manager will be involved in the development and approval of all press releases, and workshop information (as they relate to TSSWCB programs) prior to dissemination.

### **Deliverables:**

- Results from additional year of BMP effectiveness monitoring
- BMP Effectiveness Monitoring final report

### **Project Management:**

Participating organizations and agencies along with their roles in this project include:

- Texas Forest Service (Hughes Simpson) – Project lead, technical assistance, project coordination
- TSSWCB (Kevin Wagner) – Project management, State NPS lead agency for silviculture. The TSSWCB project manager will be involved in the development and approval of all press releases and workshop information (as they relate to TSSWCB programs) prior to dissemination. Attend and present TSSWCB programs at workshops.
- Texas Forestry Association (Susan Stutts) – Assist with education, training, provide framework for organization of cooperators, provide communication within forestry community,
- SWCDs (Joel Clark, David Powell) – Assist with private landowner cooperation in BMP implementation, workshops, and project coordination.
- EPA Region VI (Randall Rush) - Project coordination and funding.

### **Cooperating entities include, but are not limited to the following:**

Texas Forestry Association, Texas State Soil and Water Conservation Board, Soil and Water Conservation Districts, forest products companies, USDA Forest Service, USDA Natural Resources Conservation Service, County Forest Landowner Associations, Texas Logging Council, EPA Region VI, and river authorities.

### **Project Coordination:**

The primary goals of this project are to implement BMPs in the 303(d)-listed segment watersheds and to educate landowners about BMPs. The public involvement will be extensive. The project activities will directly involve landowners, and will offer educational outreach to the general public. The following subtasks will involve public participation:

- 2.2 - The TFS will develop and provide educational information to absentee forest landowners.

- 3.1 - The TFS will give BMP presentations to organizations in the 303(d)-listed segment watersheds.
- 3.2 - The TFS will coordinate and participate in the Teachers Conservation Institute.
- 3.5 - The TFS will coordinate forestry tours for groups who are interested in promoting BMPs.
- 3.6 - The TFS will coordinate county landowner association workshops
- 3.7 - The TFS will display a BMP exhibit at local businesses, county fairs, and other suitable locations in 303(d)-listed segment watersheds.
- 4.4 -The TFS will work with local media in 303(d)-listed segment watersheds to promote project tasks.

### **Measures of Success:**

An increase in BMP implementation, mainly due to educational activities and technical assistance is expected. An increase in voluntary BMP implementation to 93% will show the success of this project. Also, when quantifying load reductions, a significant increase in the tons of sediment prevented from reaching streams each year is expected from BMP implementation.

### **TSSWCB Project Lead:**

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### **Project Lead:**

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## PROJECT BUDGET

### Proposed Three-year Budget by Budget Category

Budget Category	Federal	Non-Federal	Total
<b>Personnel</b>			
Project Leader (100% @ \$40,500)	\$0	\$121,500	\$121,500
Project Forester (100% @ \$37,500)	\$109,350	\$3,150	\$112,500
Project Forester (100% @ \$31,000)	\$62,000	\$0	\$62,000
Project Biologist (100% @ \$31,000)	\$31,000	\$0	\$31,000
Project Specialist (62% @ \$34,000)	\$41,160	\$0	\$41,160
Project Forester (1 @ 24%)	\$37,500	\$0	\$37,500
Project Technician (999 hrs @ \$10/hr)	\$9,900	\$0	\$9,900
TFS Professional Staff (6 @ 15%)	\$0	\$129,500	\$129,500
Benefits @ 25%	\$71,503	\$0	\$71,503
<b>Subtotal Personnel and Benefits</b>	<b>\$362,413</b>	<b>\$254,150</b>	<b>\$616,563</b>
<b>Travel</b>			
Out-of-state	\$4,000	\$0	\$4,000
In-state	\$49,680	\$0	\$49,680
<b>Supplies</b>			
Copier/utilities	\$10,000	\$0	\$10,000
Other water sampling supplies	\$10,000	\$1,750	\$11,750
Computers	\$5,000	\$0	\$5,000
BMP Publicity	\$0	\$10,000	\$10,000
BMP training workshops	\$0	\$10,000	\$10,000
County Landowner Association meetings	\$0	\$24,000	\$24,000
BMP Literature (Handbooks, brochures)	\$0	\$10,000	\$10,000
<b>Contractual</b>			
Water Analysis	\$31,091	\$0	\$31,091
Fish and Benthic ID	\$2,400	\$0	\$2,400
Timber Stand Improvement	\$0	\$18,160	\$18,160
<b>Other</b>			
Leadership Materials	\$10,000	\$0	\$10,000
Printing/Postage	\$15,000	\$0	\$15,000
<b>Subtotal Other Direct Costs</b>	<b>\$137,171</b>	<b>\$73,910</b>	<b>\$211,081</b>
<b>Total Direct Costs</b>	<b>\$499,584</b>	<b>\$328,060</b>	<b>\$827,644</b>
Indirect @ 15% (Total 26% with 11% match)	\$74,938	\$54,954	\$129,892
<b>Total Project Costs</b>	<b>\$574,521</b>	<b>\$383,014</b>	<b>\$957,535</b>

## **Itemized Budget Justification**

The BMP Project Leader will spend 100% of his/her time on the project. This person is responsible for the overall leadership of the project, supervises other project employees, and coordinates project efforts with other agencies and entities.

Two of the BMP Project Foresters will spend 100% of their time assisting with implementation of the project. The other BMP Project Forester will spend 24% of his or her time assisting the other project foresters with professional duties. The BMP Project Biologist will spend 100% of his or her time assisting with the implementation of the one year extension of the BMP Effectiveness Monitoring Project. The BMP project specialist will spend 65% of his or her time assisting with the implementation of the project for the final 2 years. The project technician will assist with performing technical duties associated with the effectiveness monitoring project (changing batteries, checking rainfall, rotating hydrolabs). Texas Forest Service professional staff (Managers, District Foresters, technicians, etc.) will play a critical role in delivering the BMP message, accounting for \$129,500 in match expenses (6 @ 15%).

Out-of state travel includes three trips per grant for the project leader and one for each of the two full time project foresters, for a total cost of \$4,000 (\$800 per person per trip (including registration, per diem, and hotel). Attendance at such workshops will allow project professionals to remain on the cutting edge of current information, as well as participate and speak at EPA Region VI annual meetings.

In-state travel is necessary for BMP implementation and effectiveness monitoring; meetings with landowners; periodic trips to Temple (TSSWCB), Dallas (EPA), and Austin (TMDL, NPS meetings); and other travel. At an average of 1,000 miles per month per employee, in-state travel cost will be \$41,760 (1000 miles per month for two of the project employees for 36 months, two of the project employees for 24 months, and two of the project employees for 12 months at 0.29 per mile). Overnight travel in state, at an average of one per month for each of two project foresters will cost \$7,920 (12 hotel rooms per year at \$80 per room per person plus per diem of \$30 for three years).

Supplies include copier rental at \$100 per month and utilities (power, telephone, and water) at \$177.78 per month for 36 months for a total of \$10,000. Other supplies include miscellaneous water sampling supplies (calibration fluids, preservatives, safety equipment, nets, etc.) totaling \$10,000. A backpack electroshocher will be borrowed to conduct two bioassessments as part of the effectiveness monitoring extension, accounting for \$1,750 in match. Computers are budgeted to allow for the project foresters to maintain the BMP monitoring databases as well as complete other office related tasks.

Match expenses include advertising (\$10,000 – billboards, radio commercials, etc.), BMP training workshops (\$10,000 – meals, facilities, van rentals, refreshments, etc.), county landowner association meetings (\$24,000 – mail out, meals, facilities, refreshments, etc.), and BMP literature (\$10,000 – printing BMP handbooks and brochures).

Contractual expenses include laboratory analysis of water samples collected from project sites for a total of \$31,091 (108 grab samples @ \$87 per sample, 240 storm samples @ \$87 per sample, and sample pickup charges, regular and emergency, totaling \$815). Fish and benthic macroinvertebrate identification will also have to be performed in a laboratory at a total cost of \$2,400 (16 benthic macroinvertebrate samples @ \$75 per sample and 16 fish samples @ \$75 per sample). Timber Stand Improvement will be conducted on the effectiveness monitoring project sites totaling \$18,160 in match expenses (227 net acres treated at \$80/acre)

Leadership training provided to the Texas Forest Landowners Council will total \$10,000 and will include workshop materials, speakers, and meeting facilities. Printing expenses include publishing 12 statewide newsletters for resource professionals and 12 landowner newsletters @ \$525 per issue, for a total of \$12,600. Final reports documenting the results of BMP implementation and effectiveness monitoring will cost a total of \$2,400.