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Development of a standard stormwater, erosion and sediment control training and certification program for contractors of construction sites one acre or larger in Desoto County, Mississippi

Susana Cook Martin-Velazquez

DEVELOPMENT OF A STANDARD STORMWATER, EROSION AND SEDIMENT CONTROL TRAINING AND CERTIFICATION PROGRAM FOR CONTRACTORS OF CONSTRUCTION SITES ONE ACRE OR LARGER IN DESOTO COUNTY, MISSISSIPPI

By

Susana Cook Martin-Velazquez

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By

Susana Cook Martin-Velazquez

Approved:

Jairo Nelvedir Diaz-Ramirez Assistant Research Professor Civil and Environmental Engineering (Major Professor)	James Martin Professor and Endowed Chair Civil and Environmental Engineering (Committee Member)
William McAnally Research Professor and Co-Director Civil and Environmental Engineering (Committee Member)	Timothy Schauwecker Associate Professor Landscape Architecture (Committee Member)
James Martin Professor and Endowed Chair Civil and Environmental Engineering (Graduate Coordinator)	Sarah A. Rajala Dean and Professor and Endowed Chair Dean of Engineering

Name: Susana Cook Martin-Velazquez

Date of Degree: December 9, 2011

Institution: Mississippi State University

Major Field: Civil Engineering

Major Professor: Dr. Jairo Nelvedir Diaz-Ramirez

Title of Study: DEVELOPMENT OF A STANDARD STORMWATER, EROSION AND SEDIMENT CONTROL TRAINING AND CERTIFICATION PROGRAM FOR CONTRACTORS OF CONSTRUCTION SITES ONE ACRE OR LARGER IN DESOTO COUNTY, MISSISSIPPI

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Candidate for Degree of Master of Civil Engineering

Polluted runoff has been widely recognized by environmental scientists and regulators as the single largest threat to water quality in the United States. Contractor training and certification are among the four main Best Management Practices that the Environmental Protection Agency recommends to assist contractors in complying with Phase II Municipal Separate Storm Sewer Systems requirements that regulate construction sites stormwater runoff.

The focus of the study is the review of training requirements for construction activities and stormwater permitting requirements in the states of Alabama, Arkansas, California, Florida, Louisiana, Maine, Maryland, Mississippi, and Tennessee. The review of the various training and certification requirements for the study states indicates the

appropriateness and timeliness for the development and implementation of a model standard stormwater, erosion and sediment control training and certification program for contractors of construction sites of one acre or larger in Desoto County Mississippi to minimize stormwater pollution from construction sites.

Key words: stormwater training, construction permits, contractor training, Mississippi.

DEDICATION

This thesis is dedicated to my family support team, including husband, Shone; son, Sean; my parents, Angel and Teresa; and Annie and Mamie.

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INTRODUCTION

Statement of the Problem

Polluted runoff has been widely recognized by environmental scientists and regulators as the single largest threat to water quality in the United States (NEMO Fact Sheet, 1994). According to the Environment Protection Agency (EPA), in the United States, nutrients and eroded soil are the most common pollutants causing degradation of water resources (EPA, 2010).

The stormwater pollution problem has two main components:

- Increased volume of runoff from impervious surfaces
- Increased concentration of pollutants in the runoff

Both components are directly related to development in urban and urbanizing areas.

Construction sites are a major source of erosion and sediment problems if Best Management Practices are not used correctly. Erosion from construction sites can be up to 200 times that of agricultural lands (MDEQ, 2007)

Because stormwater pollution is generated from a multitude of sources, it takes individual behavior change and proper practices to control such pollution. It is important to create awareness about the impact of construction for stormwater pollution through

information and education. According to the EPA, runoff from construction sites is by far the largest source of sediment in urban areas under development. Soil erosion removes over 90 percent of sediment by tonnage in urbanizing areas where most construction activities occur, erosion rates from natural areas such as undisturbed forested lands are typically less than one ton/acre/year, while erosion from construction sites ranges from 7.2 to over 1,000 tons/acre/year (EPA, 2010).

There is no standard training program which meets the present or anticipated training requirements for contractors of construction sites of one acre or larger in North Mississippi.

Purpose of the Study

The goal of this thesis is to develop a model standard stormwater, erosion and sediment control training and certification program for contractors of construction sites one acre or larger in Mississippi to minimize (eliminate) stormwater pollution from construction sites by reviewing the training requirements for construction activities and stormwater permitting requirements in the selected states of Alabama, Arkansas, California, Florida, Louisiana, Maine, Maryland, Mississippi, and Tennessee. These states were selected based on two criteria: geographic location (states contiguous to Mississippi), and good quality stormwater programs outside of the Mississippi geographical area.

Stated differently, the objective of this thesis is to create a "Certified Contractor" program in which contractors/ operators complete a training and certification course in basic stormwater, erosion and sediment control. The "Certified Contractor" would be

responsible for conducting the mandatory periodic stormwater inspections and for ensuring the regular maintenance and proper installation and implementation of erosion and sediment control measures for construction sites one acre or larger for implementation in Desoto County and the municipalities of Horn Lake, Olive Branch, and Southaven, Mississippi.

Justification and Usefulness of the Study

During construction, soil is highly susceptible to wind and water erosion. When soil is eroded, it endangers water resources in a number of ways but primarily by reducing water quality and causing siltation of aquatic habitat for fish and other species. Eroded soil also creates the necessity to repair sewers and ditches and dredge lakes. The loss of vegetation occurs during construction as a result of clearing and grading. Vegetation is necessary for terrestrial and aquatic habitat (Claytor R., 1997).

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental problems. Phase II municipalities must implement a stormwater management program that includes a component for controlling polluted stormwater discharges from construction sites disturbing at least one acre (EPA, 2011). Desoto County and the municipalities of Horn Lake, Olive Branch, and Southaven, Mississippi, are Phase II municipalities. This training and certification program will allow them to accomplish this.

Non-point source pollution is the leading remaining cause of water quality problems (EPA, 2010). As described below, the U.S. Environmental Protection Agency (EPA) documents the strong effect that uncontrolled stormwater runoff can have on

waterbodies. According to EPA 2006, "Uncontrolled stormwater runoff from construction sites can significantly impact rivers, lakes and estuaries. Sediment in waterbodies from construction sites can reduce the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation."

Phase II of the National Pollutants Discharge Elimination Program (NPDES) went into effect in 2003. Phase II requires the federal government, states with delegated authority of the program, and MS4s to write and implement regulations for a construction activity permit program for land disturbance of one acre or larger. This primarily includes developing the following:

- An ordinance,
- Requirements to implement erosion and sediment control BMPs,
- Requirements to control other waste at the construction site,
- Procedures for reviewing construction site plans,
- Procedures to receive and consider information submitted by the public, and
- Procedures for inspections and enforcement of stormwater requirements at construction sites.

In addition to the stormwater requirements that Phase II MS4s place on construction sites, construction operators must also apply for NPDES permit coverage if the project disturbs at least one acre and discharges to a waterbody.

Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven are some of the communities across the U. S. that fall into Phase II regulations that must regulate land disturbance with an ordinance, permit coverage,

inspections, and regulatory oversight (NPDES Stormwater Certification Requirements, www.stormwaterusa.com). As Phase II MS4 entities, Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven are required to develop a program to reduce pollutants in stormwater runoff from construction sites disturbing one or more acres.

The author's involvement with the Desoto County Stormwater Advisory Committee for municipalities in North Mississippi has indicated the need for a standard stormwater training and certification program to educate contractors and to raise awareness of the impact of stormwater pollution and its prevention.

The on-site contractors should be qualified in stormwater, erosion and sediment control because they are critical in proper installation of erosion and sediment control BMPs (EPA- NPDES, 2011). Municipally-sponsored training courses are an effective venue for private contractor training (Brown and Caraco, 1997).

Contractor training and certification are among the four main Best Management Practices (BMPs) for municipal program oversight that EPA recommends to assist contractors in complying with Phase II MS4s (EPA- NPDES 2006). The four key BMPs that EPA recommends MS4s to focus on to address the construction minimum measure are: Local Ordinances for Construction Site Runoff Control; Construction Phase Plan Review; Contractor Training and Certification; Municipal Construction Inspection Program (EPA- NPDES 2006).

The Mississippi Department of Environmental Quality (MDEQ) currently requires that large construction sites (five acres or larger) are regularly inspected by a "qualified individual" (MDEQ Large Construction General Permit, 2010). According to

MDEQ, a “qualified individual is a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measure selected to control the quality of stormwater discharges from the construction activity” (MDEQ Large Construction General Permit, 2010).

The definition of “qualified individual” is imprecise since there is no regulation or standard as of training and knowledge requirements. Beginning in the year 2013 when the general permit is renewed, the same inspection requirements by a “qualified individual” are anticipated for small construction sites (1 acre to less than 5 acres). In general, entities with Small Municipal Separate Storm Sewer System (MS4) under the General Phase II Permit in Mississippi have to achieve a measurable goal for training programs and training certification for developers and construction site operators (MDEQ MS4 General Permit, 2009).

In Mississippi, there is a multitude of training options for personnel involved in land disturbing activities, thus heterogeneous education opportunities are available. Existing training requirements are imprecise. Each entity can adopt an existing training program from numerous options or create its own, without following any standard quality guidelines.

This thesis will survey the stormwater training and permit requirements for construction sites one acre or larger in different states and evaluate the results to provide a three-module standard training and certification program to ensure that quality standards are met. This program can be used by Mississippi municipalities to comply

with the various existing and the anticipated contractor stormwater training and certification requirements.

Scope and Limitations of the Study

Scope

Ideally, all personnel involved in land-disturbing activities seeking permit coverage in Mississippi would be certified under a standard training program. The goal of this project is to create a standard training program to be used as a model in Desoto County, Mississippi, and the municipalities of Horn Lake, Olive Branch, and Southaven for stormwater management in construction sites of one acre or larger. In order to ensure uniform quality training, a standard training course could be adopted statewide.

Limitations

The following identifies limitations of the study:

- The study is limited to a model training program to be used in Desoto County and its municipalities of Horn Lake, Olive Branch, and Southaven, Mississippi.
- The size limitation is construction sites of one acre or larger (construction sites covered under the NPDES permit)
- Research was limited to nine (9) states and selected relevant information on standard stormwater training and certification programs in the subject states.

Summary and Plan of Presentation

After an extensive review of the existing stormwater training requirements for construction activities of the states of Alabama, Arkansas, California, Florida, Louisiana, Maine, Maryland, Mississippi, and Tennessee, a standard stormwater training and certification program of three modules was developed for implementation in the municipalities of Desoto County, Horn Lake, Olive Branch, and Southaven, Mississippi.

CHAPTER II

METHODOLOGY

Description of the Approach

This research was conducted in order to develop a standard stormwater training and certification program for contractors of construction sites of one acre or larger in Mississippi to minimize (eliminate) stormwater pollution from construction sites. This program can be used as a model stormwater training and certification program by the Stormwater Advisory committee in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. The research methodology consisted of the following steps:

1. Reviewed and researched permit requirements in Mississippi for training of personnel involved in construction land disturbance activities which highlighted the lack of a standard training and certification program for construction activities in Mississippi.
2. Selected states which are known for quality stormwater programs outside of the Mississippi geographical area which are Florida, California, Maryland, and Maine.

3. In addition to Mississippi, selected the contiguous states of Tennessee and Alabama in EPA Region 4 and Arkansas and Louisiana in Region 6, due to proximity.
4. Researched, reviewed, and evaluated the stormwater training requirements for construction activities of each state in the study for best practices to be included in the development of the course outline and requirements.
5. Researched and reviewed available educational materials published by EPA which impacted the development of the training course.
6. Interviewed the General Permits Branch Program Manager of the Mississippi Department of Environmental Quality to gain knowledge of the existing permit requirements and training opportunities in Mississippi.
7. Interviewed staff members in the states of Alabama, Tennessee, Florida, and California to gain first-hand practical knowledge of the respective programs.
8. Participated as a leading member of Desoto County Stormwater Advisory Committee for municipalities in North Mississippi with a mandate to train contractors to comply with stormwater permit requirements.

CHAPTER III

STORMWATER TRAINING AND CERTIFICATION PROGRAMS

A literature review of stormwater training and certification programs was conducted for nine selected states to determine whether or not these states had a standard stormwater training and certification program and characteristics of the programs. These states were Alabama, Arkansas, California, Florida, Louisiana, Maine, Maryland, Mississippi, and Tennessee. The states were selected based on two criteria: geographic location (states contiguous to Mississippi), and good quality stormwater programs outside of the Mississippi geographical area.

Each state in this study has characteristics in common with the total as well as characteristics unique to it. Reviews of each state's requirements are presented in this section.

Review of Stormwater Training and Certification Programs in Nine States

Alabama Department of Environmental Management (ADEM)

Alabama has a standard stormwater training and certification program for personnel involved in land disturbances, and the program is mandatory. The certification requires continuing education and has no provision for revocation of the certification. The certification is not for construction sites of less than one acre but pertains to

construction sites one to five acres and five acres or larger. The continuing education requirement is a one-half day or four-hour duration of training with recertification required yearly. The training requires a minimum of 70% pass rate on the exam. This certification is regulated by the Alabama Department of Environment Management (ADEM). The training is provided with approval from ADEM by the Homebuilders Association of Alabama and Thompson Engineering, Inc. Successful completion of the stormwater training course results in participants becoming a Qualified Credentialed Inspector (QCI). The course is a one-day or eight-hour course. The personnel training in this course are generally site forepersons and site project managers. The Alabama program has been in existence since 2003.

Arkansas Department of Environmental Quality (ADEQ)

Arkansas is a contiguous state to Mississippi and a state without a standard stormwater training program for personnel involved in land disturbance activities; therefore, there is no mandatory stormwater training and certification program. Due to having no standard training program, it has no continuing training requirements or any method of revocation of certification. Additionally, the lack of a standard stormwater training program results in no training program applicable to any size construction site.

At present, Arkansas has no standard stormwater training program, but a review of training programs is being conducted for possible implementation. Presently, it has no renewal period for certification or a minimum pass rate on a test due to lack of training.

The Arkansas Department of Environment Quality (ADEQ) is the regulatory agency for certification, and due to having no stormwater training requirement, it has no

certifying entity for training or training duration. ADEQ does recommend that inspectors of both small construction sites and large construction sites be “Qualified Individuals”. Arkansas has no standard stormwater training presently, but a training program is in the review process.

California Environmental Protection Agency (Cal/EPA)

California is a state with a standard stormwater training and certification program for personnel involved in land disturbance activities, and its program is mandatory. Additionally, the training program has continuing education (CE) requirements but has no provision for revocation. This training is not applicable to all construction sites but is applicable for sites five acres or more and for sites of one to five acres. The continuing education requirement is to retake the course every two years. The course testing requirements is a minimum pass rate of 70%.

The Cal/EPA State Water Resources Control Board (SWRCB) is a branch of the Cal/EPA and it is the regulatory agency. The training is certified by The California Stormwater Quality Association (CASQA.) The training course provides certification for Qualified SWPPP Practitioner (QSP). The course duration varies among instructors but is typically 16 hours. A QSP is responsible for the construction site and may be an independent contractor and a trainer of all superintendents.

The implementation date of the training and certification program was by the Construction General Permit (CGP) requiring QSPs to attend a CSWB-sponsored training course by September 2, 2011, effective two years after the permit adoption. Mandatory training started in 2008.

Florida Department of Environmental Protection (FDEP)

The state of Florida has a standard stormwater training and certification program for personnel involved in land disturbance activities which is mandatory but has no continuing education (CE) requirements in place or a provision for revocation. The training is applicable for all construction sites including sites of five acres or more and sites of one acre to five.

Although Florida has no continuing education requirements, it does recommend that the course be retaken every four to five years. There is no established renewal period for recertification. The original exam is a proctored exam with a minimum pass rate of 70%.

The Florida Department of Environmental Protection (FDEP) is both the regulatory agency and the certifying entity. The training course is the Florida Stormwater, Erosion and Sediment Control Inspector Training and Certification Program. This course is a two-day class of eight (8) Professional Development Hours (PDH) credit hours or eight (8) hours of continuing education (CEU) credit.

Florida certifies inspectors of construction sites. In general, the course attendees are contractors (70%), professional engineers (10%), third party inspectors (10%) and state and local employees (10%). This training and certification has been in existence since 1997.

Louisiana Department of Environmental Quality (LDEQ)

Louisiana is a state without a standard stormwater training program; therefore, it has no mandatory stormwater training program or any provision of revocation or

continuing education requirements. Louisiana has no training program applicable to all construction sites or construction sites of one to five acres. However, it does require that a "qualified" inspector be utilized at construction sites one to five acres or five acres or larger.

Since Louisiana has no standard stormwater training, it has no continuing education requirements; no renewal period for certification; and no testing requirements.

The Louisiana Department of Environmental Quality (LDEQ) is the regulatory agency and has no certifying entity or stormwater training course thus no training duration. Due to having no standard stormwater course, it certifies no one in stormwater and has not implemented a stormwater training and certification program.

Maine Department of Environmental Protection (MDEP)

Maine has a standard stormwater training and certification program for personnel involved in land disturbance activities, but it is not mandatory, it is a voluntary incentive-based program. Yet, there are continuing education requirements built into Maine's incentive program, and an allowance is made for revocation. The incentive training program has components for training which are applicable to all construction sites; sites of five acres or larger and one to five acres.

Maine has a four-hour continuing education requirement, and its certification is valid until December 31 after the third year of issuance.

The testing requirement in order to obtain certification is a successful evaluation of the participant's construction site.

The regulatory agency for Maine is the Maine Department of Environmental Protection (MDEP). The training is certified through the Department of Environmental Protection Non-Point Source Training and Resource Center.

The name of the stormwater training course in Maine is the Voluntary Contractor Certification Program (VCCP), and the duration is eight hours of training and an evaluation of the construction site. Individuals taking this course may be any responsible personnel involved with disturbance activities. This program has been in existence and operating since 2004.

Maryland Department of the Environment (MDE)

The state of Maryland has a standard stormwater training and certification program for personnel involved in land disturbance activities, and its program is mandatory with continuing education requirements. There is no allowance for revocation in this program. Maryland does not make this training program applicable to all construction sites but does make it applicable to sites five acres or larger and sites of one to five acres.

The certification course consists of one-half day or four hour duration training course with a minimum pass rate of 70%. Additionally, it is available on-line with 241 on-line review slides. It has continuing education requirements and must be taken every three years.

The stormwater regulatory agency is the Maryland Department of the Environment (MDE), and it is the certifying agency as well. The name of the training course is the Responsible Personnel Training for Erosion and Sediment Control and is

provided by MDE. Participants in the training may be any personnel involved in construction projects. Maine's original program was developed in 1980 and updated in 1994.

Mississippi Department of Environmental Quality (MDEQ)

Mississippi does not have a standard stormwater training and certification program for personnel involved in land disturbance activities; therefore, there is no mandatory stormwater training and certification. Additionally, Mississippi has no continuing education requirements (CE); no revocation; and no training program for all construction sites or sites of one to five acres, or five acres or larger. It does require inspections by "qualified individuals" for sites of five acres or larger. Since there is no training program, there is no renewal period of certification or testing requirements.

Mississippi's regulatory agency is the Mississippi Department of Environmental Quality (MDEQ) and has no stormwater training, no certifying agency, or no course duration. The requirement is only that weekly inspections of construction sites five acres or larger shall be performed by a qualified individual, and this requirement is due to the new permit LCGP (MSR10) issued January 22, 2011.

Tennessee Department of Environment and Conservation (TDEC)

Tennessee has a standard stormwater training and certification program for personnel in land disturbance activities which is mandatory with continuing education requirements (CE) but has no revocation component. The training is applicable to construction sites of one to five acres and five acres and larger but not all construction sites.

The continuing education (CE) requirement is for a one half day workshop which is four (4) Professional Development Hours (PDH) or a complete one day course which is to be taken at the end of third calendar year with a minimum pass rate of 75%.

The Tennessee regulatory agency is the Tennessee Department of Environment and Conservation (TDEC), and the certifying entity is the TDEC and Tennessee Water Resources Research Center of the University of Tennessee. The training course is the Tennessee Erosion Prevention and Sediment Control Training and Certification Program which grants seven (7) hours of PDH credit after 7 hours of training.

This training is for site inspectors and contractors or employees of contractors. Certification has been required since 2005 with original training implementation beginning in 2001.

Results of Review of Stormwater Training and Certification Programs

The results of the review of stormwater certification and training programs and each question are presented in the following paragraphs. The survey tool is included as Appendix B.

Table 3.1

Does Your State Have a Standard Stormwater Training and Certification Program for Personnel Involved in Land Disturbance Activities?

	AL	**AR**	**CA**	**FL**	**LA**	**ME**	**MD**	**MS**	**TN**
Does your state have a standard stormwater training and certification program for personnel involved in land disturbance activities?	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes

During a review of the nine states in this study, the six states of Alabama, California, Florida, Maine, Maryland, and Tennessee were found to have a standard stormwater training and certification program; whereas, the states of Arkansas, Louisiana, and Mississippi do not (table 3.1). Out of the four states contiguous to Mississippi, Alabama and Tennessee have a standard stormwater training and certification program, but the states of Arkansas and Louisiana do not.

Table 3.2

Does Your State Have a Mandatory Stormwater Training and Certification Program?

	AL	**AR**	**CA**	**FL**	**LA**	**ME**	**MD**	**MS**	**TN**
Does your state have a mandatory stormwater training and certification program?	Yes	No	Yes	Yes	No	No	Yes	No	Yes

After researching which states had a standard stormwater training and certification program, a further review was done to determine which of those had mandatory training and certification programs. Of the six states which had a standard stormwater training and certification program, Alabama, California, Florida, Maine, Florida, Maine, Maryland, and Tennessee, five were mandatory (table 3.2). The one state with a standard program which was not mandatory was Maine. Maine's standard training and certification program is a voluntary incentive-based program.

Table 3.3

Are There Continuing Education (CE) Requirements?

	AL	**AR**	**CA**	**FL**	**LA**	**ME**	**MD**	**MS**	**TN**
Are there continuing education (CE) requirements?	Yes	NA	Yes	No	NA	Yes	Yes	NA	Yes

After determining there are six states with standard stormwater training and certification program and five of those are mandatory programs, a sub-question revealed four of the five states had continuing education requirements (table 3.3). The one state with a mandatory program which had no continuing education requirement was Florida. Although Maine does not have a mandatory stormwater training and certification program, this state does have continuing education requirements, because it has an incentive-based voluntary program with revocation allowed.

Table 3.4

Is Revocation Allowed?

	AL	**AR**	**CA**	**FL**	**LA**	**ME**	**MD**	**MS**	**TN**
Responses	No	NA	NA	No	NA	Yes	No	NA	No

The literature review reveals Maine as the sole state which allows revocation of the certification (table 3.4). Alabama, Florida, Maryland and Tennessee have no provision for revocation. Research reveals that the literature on California does not address revocation.

The states of Arkansas, Louisiana, and Mississippi have no standard stormwater training and certification program; therefore revocation is non-applicable.

Since this study is for construction sites one acre or larger, three questions were used to determine whether all construction sites have training requirements for permitting; or only sites one to five acres; or five acres or larger(table 3.5).

Table 3.5

Is a Training Requirement Applicable to All Construction Sites, Construction Sites Five Acres or Larger, or One to Five Acres?

	AL	**AR**	**CA**	**FL**	**LA**	**ME**	**MD**	**MS**	**TN**
Is a training requirement applicable to all construction sites?	No	No	No	Yes	No	Yes	No	No	No
Is a training requirement applicable to sites five acres or larger?	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is a training requirement applicable to sites one to five acres?	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes

Florida has a mandatory standard stormwater certification and training program, and training is required for all construction sites. Maine has a standard stormwater training and certification program recommended for all construction sites, but it is not mandatory, because it is an incentive-based program. Alabama, California, Maryland, and Tennessee have a mandatory standard stormwater training and certification program, but no requirement for training for sites below one acre. The mandatory training for these states is for construction sites of one to five acres and five acres or larger.

Arkansas requires no training presently for any sites but has plans for a possible training requirement as of October 31, 2011 for construction sites one acre or larger, when the general construction permit expires. Mississippi has only a general training requirement for construction sites of five acres or larger.

Table 3.6

What Are the Continuing Education (CE) Requirements?

Alabama	Course of one-half day or four-hour duration
Arkansas	A training program is under review for implementation
California	Course must be retaken
Florida	No requirements. Recommendation to retake course after 4 or 5 years
Louisiana	No standard stormwater training & certification program
Maine	Four-hour continuing education course
Maryland	Course of one-half day or four-hour duration
Mississippi	Not applicable. No standard stormwater training and certification program
Tennessee	One-half day workshop (4 PDHs) or a complete one-day course

Table 3.7

What Is the Renewal Period of Certification?

Alabama	Yearly requirement
Arkansas	Not applicable
California	Good for two years
Florida	Not defined. Recommended 4 or 5 years
Louisiana	Not applicable
Maine	Certification valid until December 31 after the third year of issuance
Maryland	Three years
Mississippi	Not applicable
Tennessee	End of third calendar year

Table 3.8

What are the Testing Requirements?

Alabama	Minimum pass rate of 70%
Arkansas	Not applicable
California	Minimum pass rate of 70%
Florida	Proctored exam and minimum pass rate of 70%
Louisiana	Not applicable
Maine	Successful inspection of the construction site
Maryland	Minimum pass rate of 70%
Mississippi	Not applicable
Tennessee	Minimum pass rate of 75%

Alabama and California both have mandatory standard stormwater training and certification programs (table 3.6). Alabama and California have the most strenuous continuing education requirements with Alabama requiring annual recertification and California requiring a retake of the course after two years. Both states require a 70% pass rate on written tests (table 3.8).

Maryland and Tennessee have mandatory standard stormwater training and certification programs which require continuing education after three years to recertify. Maine has a standard stormwater training and certification program, but it is not mandatory; however, Maine requires continuing education. These three states require training of one-half day or four hours in duration. The method of testing differs for these

states. Maryland requires a 70% pass rate and Tennessee a 75% pass rate on a written test; whereas, Maine requires an on-site stormwater inspection of the test participant's own construction site after the training course has been completed.

Florida has a mandatory standard stormwater training and certification program with only a recommendation to retake the training course after a 4-5 year period for continuing education with a 70% pass rate.

Louisiana and Mississippi have no standard stormwater training and certification program hence no continuing education requirements. Arkansas is in review with its program, but has no stated continuing education requirement. These states have no testing requirements due to having no standard stormwater training and certification program.

Table 3.9

Name of Stormwater Regulatory Agency

Alabama	Alabama Department of Environmental Management (ADEM)
Arkansas	Arkansas Department of Environment Quality (ADEQ)
California	California State Water Board (CSWB)
Florida	Florida Department of Environmental Protection (FDEP)
Louisiana	Louisiana Department of Environmental Quality (LDEQ)
Maine	Maine Department of Environmental Protection (MDEP)
Maryland	Maryland Department of the Environment (MDE)
Mississippi	Mississippi Department of Environmental Quality (MDEQ)
Tennessee	Tennessee Department of Environment and Conservation (TDEC)

Table 3.10

Name of the Certifying Entity

Alabama	Homebuilders Association of Alabama; Thompson Engineering, Inc.
Arkansas	Not applicable
California	California Stormwater Quality Association (CASQA)
Florida	Florida Department of Environmental Protection
Louisiana	Not applicable
Maine	Coordinated by the Department of Environmental Protection Non-Point Source Training and Resource Center
Maryland	Maryland Department of the Environment
Mississippi	Not applicable
Tennessee	Tennessee Department of Environment and Conservation and Tennessee Water Resources Research Center of the University of Tennessee

Out of the nine states surveyed, three states, Arkansas, Louisiana, and Mississippi, require no certification program through a standard stormwater training program (table 3.10). All three of these states are located in the southeastern United States.

Three states, California, Florida, and Maine, have their state environmental protection agency act as the certifying entities and their regulatory agencies, while Maine coordinates its certification by the Department of Environmental Protection Non-Point Source Training Center.

California's course, Qualified Stormwater Pollution Prevention Plan (SWPPP) Practitioner (QSP) has to be offered by a California Construction General Permit-Trainer

of Record (CGP-ToR). There are four steps to obtain the Qualified SWPPP Practitioner certification, as follows:

1. Have general stormwater, erosion and sediment control training and experience
2. Have pre-qualification certification of Certified Inspector Sediment and Erosion Control (CISEC) and Certified Erosion Sediment and Storm Water Inspector (CESSWI) with CE requirements
3. Take QSP training course offered by a CGP-ToR
4. Pass California State Water Board exam – Qualified SWPPP Practitioner (QSP) exam offered and proctored by the state and regional water boards.

Alabama recognizes two certification programs provided by the Homebuilders Association of Alabama and Thompson Engineering, Inc. These programs are Homebuilders Association of Alabama for Qualified Credentialed Inspector (QCI) (Homebuilders Association Alabama Training Program) and Thompson Engineering, Inc. (TEI) for QCI Training program.

Tennessee has a coordinated certification requiring sign-off by the Tennessee Department of Environment and Conservation and Tennessee Water Resources Center of the University of Tennessee.

The Arkansas Department of Environmental Quality is considering a program to train “the public” on the correct procedures for inspecting stormwater sites when permits expire October 31, 2011 (as stated in the “Response To Comments-Final Permit Decision ARR15000)

Table 3.11

Name of Stormwater Training Course

Alabama	Qualified Credentialed Inspector (QCI)
Arkansas	Not applicable
California	Qualified SWPPP Practitioner (QSP)
Florida	Florida Stormwater, Erosion and Sediment Control Inspector Training and Certification Program
Louisiana	Not applicable
Maine	Voluntary Contractor Certification Program (VCCP)
Maryland	Maryland Department of the Environment, "Responsible Personnel Training for Erosion and Sediment Control"
Mississippi	Not applicable
Tennessee	Tennessee Erosion Prevention and Sediment Control Training and Certification Program

Six states, Alabama, California, Florida, Maryland, and Tennessee, have formal stormwater training and certification programs (table 2.8). The states of Arkansas, Louisiana, and Mississippi do not have formal stormwater training and certification programs.

The certification titles granted through these courses are varied. Maine has a Voluntary Contractor Certification Program (VCCP) due to its program being an incentive- based program. Alabama's training course is Qualified Credentialed Inspector (QCI) training. Alabama uses the designation "qualified" as opposed to "certified" in its program course and designation. California recognizes a Qualified Stormwater

Practitioner (QSP); whereas, Florida, Maryland, and Tennessee recognize successful course completion as certified by the respective regulatory agency.

Table 3.12

Course Duration

Alabama	One day or eight-hour (8) course
Arkansas	Not applicable
California	Course duration varies among instructors. Typically 16 hours
Florida	Two-day class; eight (8) PDH credit or eight (8) hours Continuing Education Unit (CEU) credit
Louisiana	Not applicable
Maine	Eight (8) hours of training and completion of a construction site stormwater evaluation
Maryland	Four (4) hours of training that is also available on-line with 241 on-line review slides
Mississippi	Not applicable
Tennessee	Seven-hour (7) course with seven (7) PDH credit

Of the six states with training courses, the duration ranged from four (4) hours to sixteen (16) hours (table 2.9). Maryland has the least with four (4) hours; Tennessee has seven (7) hours; Alabama, Florida and Maine require eight (8) hours; California requires sixteen (16) hours. Instead of a final test at the end of its course, Maine requires an evaluation of the construction site of the course participant. Arkansas, Louisiana, and Mississippi have no course duration, as these states have no standard training program.

Table 3.13

Who Needs to Be Certified?

Alabama	Permit registrant employees such as site foreperson and site project manager
Arkansas	Inspectors of construction sites should be "Qualified Personnel"
California	One QSP responsible for the construction site. The QSP can be an independent contractor. The QSP can train all superintendents.
Florida	Inspectors of construction sites. In general, the course attendees are contractors (70%); inspectors (10%); professional engineers (10 %); and state and local employees (10%)
Louisiana	Not applicable
Maine	Individuals involved with soil disturbance activities
Maryland	Any responsible personnel involved in the construction project
Mississippi	Inspectors. Inspections of construction sites 5 acres or larger shall be performed by qualified personnel.
Tennessee	Site inspectors. Contractors or employees of contractors

In general for all the states, inspections should be conducted by qualified personnel (table 3.13). According to the EPA the definition for qualified personnel is "a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact the stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of the stormwater discharges from the construction activity."

The Construction General Permit for the state of Arkansas states that construction site stormwater inspections should be conducted by qualified personnel for sites one acre or larger; whereas, for the state of Mississippi, there is a requirement of qualified personnel conducting stormwater inspections, but at this time it is limited to construction sites five acres or larger. For the state of Louisiana, there are no requirements or recommendations stated in its construction general permit for qualified personnel conducting stormwater inspections.

The goal of a certification program is to provide a cadre of individuals who fulfill the definition established by EPA as knowledgeable personnel. These individuals may carry the professional titles as contractors, inspectors, site forepersons, site project managers, etc. There is a wide variety of job titles and certification designations, as well as, who should become certified or "qualified."

Table 3.14

Implementation Date of Training and Certification Program

Alabama	2003 – QCI
Arkansas	Not applicable
California	By the Construction General Permit (CGP), QSPs must attend a CSWB-sponsored training course by September 2, 2011 (effective two years after the permit adoption). Current mandatory training started in 2008. Training requirements were include in the Construction General Permit adopted in 1992.
Florida	1997
Louisiana	Not applicable
Maine	2004
Maryland	1994. Original plan was developed in 1980.
Mississippi	Not applicable. The new permit LCGP (MSR10) issued January 22, 2011 includes the requirement of inspections to be performed by a qualified individual.
Tennessee	Certification required since 2005. Original training implementation date – 2001.

The implementation of training and certification has a long history in Florida due to its beginning in 1997 (table 3.14). Florida has a mandatory standard stormwater training and certification program but without continuing education requirements. Maryland's original training program was developed in 1980 and became a requirement in 1994. Tennessee instituted its original training in 2001 with certification required in 2005; whereas Alabama instituted its Qualified Credentialed Inspector (QCI) in 2003 and Maine came on-line in 2004. California started mandatory training in 2008 and requires its Qualified Stormwater Practitioner to attend a California state or local water board-

sponsored training course by 2011. California's earlier training requirements were included in the Construction General Permit adopted in 1992. Only Arkansas, Mississippi, and Louisiana have no stormwater certification requirements.

Conclusions

The literature review of the various training and certification requirements for the study states indicates the appropriateness and timeliness for the development and implementation of a standard stormwater training and certification program for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch and Southaven with the following proposed parameters:

Name of the Training Course

Desoto County Stormwater Advisory Committee Stormwater, Erosion and Sediment Control Training and Certification Program

Regulatory Agency

The proposed regulatory agency will be the Mississippi Department of Environmental Quality (MDEQ).

Certifying Agency

The certifying agency will be the Desoto County Advisory Committee.

Personnel to Be Certified

The Standard Stormwater, Erosion and Sediment Control Training and Certification Program is proposed to be mandatory for personnel involved in land disturbance activities of construction sites one acre or larger. Specifically, the individuals required to take the course will be the on-site project manager, who would be the qualified personnel who will be performing the regular mandatory inspections required by the Mississippi Department of Environmental Quality (MDEQ) Construction General Permit (CGP).

Revocation

Revocation of certification is proposed to be allowed. When formal action is taken against a certified contractor due to a stormwater violation, revocation could occur, and the contractor shall initiate the certification process from the beginning to include the training class and test for recertification.

Continuing Education Requirements

The training program will have continuing education requirements. Certification will expire December 31st after the second year the certification is obtained. All certified individuals shall retake the course and pass the exam in order to maintain certification after two years.

Course Duration

The course duration will be 6 hours, and it will be composed of three (3) individual training modules of 1.5 hours each, and a 1.5 hour test. The three (3) modules can be taken individually or on the same day.

Test Requirements

A written test will be administered; the minimum passing rate on the test will be 70% pass. If the three (3) modules are taken individually, a test for each module will be administered and must be passed individually.

Implementation Date

The proposed implementation date for this training program is January, 2012.

CHAPTER IV

RESULTS

Development of Training Modules

The review of existing available information, training material, and permit requirements revealed the need to include three (3) areas in the training and certification program: (1) Impact of Construction Activity on Stormwater Quality, (2) Erosion and Sediment Best Management Practices, and (3) Permit Requirements and Procedures. For instructional purposes, the certification program has been divided into three (3) modules plus testing and credentialing.

Module 1. Impact of Construction Activity on Stormwater Quality

Module 2. Erosion and Sediment Control Best Management Practices

Module 3. Permit Requirements and Procedures

Summary

The research clearly revealed the need for the development of a standard training and certification program that can be used as a model in North Mississippi to provide quality training for contractors seeking permit coverage in Desoto County Mississippi, in order to reduce or eliminate stormwater pollution caused by land disturbance activities in that area of the state.

Desoto County Stormwater Advisory Committee.

Stormwater, Erosion and Sediment Control

Training and Certification Program

General Course Outline

- General Description: This six-hour course includes three modules that may be taken the same day or individually.
- Subject Category: Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Prerequisite: No
- Course Length: 6 hours
- Delivery Mode: Lecture, PowerPoint, and Video
- Schedule: Quarterly (monthly for the first year in order to get sufficient personnel trained)
- Location: Desoto County Road Department Building – Nesbit, MS
- Target Audience: Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permits in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

- Course Purpose: This course is designed to provide stormwater, erosion and sediment control training for contractors and personnel involved in land disturbing activities who will perform the mandatory construction site inspections of construction sites covered under the Construction General Permit in North Mississippi. The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education. The training will consist of the following modules:
    - Module 1. Impact of Construction Activities on Stormwater Quality
    - Module 2. Permit Requirements and Procedures
    - Module 3. Best Management Practices – Erosion and Sediment Control
    - Testing and Credentialing
- Course Objectives: To create awareness of stormwater pollution and its consequences; review requirements and procedures to be in compliance with permits; provide information about best management practices for erosion and sediment control to minimize or eliminate stormwater pollution from construction activities.
- Learning Outcomes:
    - Understand the significance of stormwater pollution.
    - Recognize the impact of construction activities on stormwater quality.
    - Comprehend the effect of development in urban and urbanizing areas on stormwater quality.
    - Understand construction permit requirements and procedures of the Mississippi Department of Environmental Quality.

- Become aware of significant changes in permit requirements and procedures.
- Learn how to properly complete and submit permit forms and applications.
- Understand the importance of construction site best management practices and correct use.
- Learn how to recognize the difference between erosion control best management practices and sediment control best management practices.
- Learn how to recognize the need for maintenance of best management practices in place.

- Course Instructional Materials:
  - Lecture
  - PowerPoint Presentation
  - Video: Ground Control: Stormwater Pollution Prevention for Construction Sites
- Instructor: Susana Cook Martin-Velazquez
- Training Compliance Requirements: As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

- Course Handouts:
    - PowerPoint Handout
    - Mississippi Department of Environmental Quality Permit Construction Forms Package
    - Mississippi Stormwater Pollution Prevention Plan (SWPPP) Guidance Manual for Construction Activities
    - Mississippi Department of Environmental Quality Erosion and Sediment Control Field Manual
    - List of useful URLs and reference materials
- Participant Evaluation: Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.
- Written Exam: Yes (70% pass requirement)
- Practical Exam: No
- Retraining/Recertification: Should be retaken after two years by the end of the calendar year.

Module 1 Course Outline: Impact of Construction Activities on Stormwater Quality

- General Description: This 1.5 hour module may be taken in conjunction with the other modules of the general course or individually.
- Subject Category: Preparation for compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Prerequisite: No

- Course Length: 1.5 hours
- Delivery Mode: Lecture and PowerPoint
- Schedule: Quarterly (monthly for the first year in order to get sufficient personnel trained)
- Location: Desoto County Road Department Building – Nesbit, MS
- Target Audience: Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.
- Course Purpose: This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities in Horn Lake, Olive Branch, and Southaven. The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education. The training will consist of a Review of the Impact of Construction Activities on Stormwater Quality.

- Course Objectives: To define Non-Point Source Pollution (NPS); review stormwater pollution facts; create awareness of stormwater pollution and its damaging effect on aquatic and recreational resources; and identify impacts of construction activities on stormwater pollution.
- Learning Outcomes
    - Understand the significance of stormwater pollution
    - Recognize the impact of construction activities on stormwater
    - Comprehend the effect of development in urban and urbanizing areas on stormwater quality
- Course Instructional Materials
    - Lecture
    - PowerPoint Presentation
- Instructor: Susana Cook Martin-Velazquez
- Training Compliance Requirements: As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Handouts:
    - PowerPoint Handout
    - List of useful URLs and reference materials

- Participant Evaluation: Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.
- Written Exam: Yes (70% pass requirement)
- Practical Exam: No
- Retraining/Recertification: Module 1 is one of three required for certification. Recertification is necessary after two years by the end of the calendar year.

Module 2 Course Outline: Construction Permit Requirements and Procedures

- General Description: This 1.5-hour module may be taken in conjunction with the other modules of the general course or taken individually.
- Subject Category: Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Prerequisite: Module 1
- Course Length: 1.5 hour**s**
- Delivery Mode: Lecture & PowerPoint
- Schedule: Quarterly (monthly for the first year in order to get sufficient personnel trained)
- Location: Desoto County Road Department Building – Nesbit, MS
- Target Audience: Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities

of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

- Course Purpose: This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities seeking permit coverage in North Mississippi. The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education and successful permitting. The training will consist of a Review of Construction Permit Requirements and Procedures.
- Course Objectives: To provide an overview of the history of the National Pollutant Discharge Elimination System (NPDES); review requirements and procedures to be in compliance with current construction permits; differentiate between large construction general permit and small construction permit requirements; review MDEQ Construction General Permit Forms; define stormwater discharges subject to regulation; and provide updates of significant permit changes.
- Learning Outcomes
    - Understand construction permit requirements and procedures of the Mississippi Department of Environmental Quality.
    - Become aware of significant changes in permit requirements and procedures.
    - Learn how to properly complete and submit permit forms and applications.

- Course Instructional Materials:
    - Lecture
    - PowerPoint Presentation
- Instructor: Susana Cook Martin-Velazquez
- Training Compliance Requirements: As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven in North Mississippi.
- Course Handouts
    - PowerPoint Handout
    - Mississippi Department of Environmental Quality Permit Construction Forms Package
    - List of useful URLs and reference materials
- Participant Evaluation: Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.
- Written Exam: Yes (70% pass requirement)
- Practical Exam: No
- Retraining/Recertification: Module 2 is one of three required for certification. Recertification is necessary after two years at the end of the calendar year.

Module 3 Course Outline. Construction Best Management Practices

- General Description: This 1.5 hour module may be taken in conjunction with the other modules of the general course or individually.
- Subject Category: Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Prerequisite: Module 2
- Course Length: 1.5 hours
- Delivery Mode: Lecture and Power Point
- Schedule: Quarterly (monthly for the first year in order to get sufficient personnel trained)
- Location: Desoto County Road Department Building – Nesbit, MS
- Target Audience: Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit under the Mississippi Construction General Permits in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.
- Course Purpose: This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities seeking permit coverage in North Mississippi. The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities

in North Mississippi through education. The training will consist of a review of Best Management Practices (BMP) - Erosion and Sediment Control

- Course Objectives: To inform about the importance of best management practices for erosion and sediment control for minimizing or eliminating stormwater pollution for construction activities; educate about BMPs and their applicability in construction sites; raise awareness of the necessity of maintenance for installed BMPs.
- Learning Outcomes:
  - Understand the importance of construction site best management practices and correct use.
  - Learn how to recognize the difference between erosion control best management practices and sediment control best management practices.
  - Learn how to recognize the need for maintenance of best management practices in place.
- Course Instructional Materials:
  - Lecture
  - PowerPoint Presentation
  - Video: Ground Control: Stormwater Pollution Prevention for Construction Sites
- Instructor: Susana Cook Martin-Velazquez

- Training Compliance Requirements: As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Course Handouts
    - PowerPoint handout
    - Mississippi Department of Environmental Quality Erosion and Sediment Control Field Manual
    - List of useful URLs and reference materials
    - Mississippi Stormwater Pollution Prevention Plan (SWPPP) guidance manual for construction sites
- Participant Evaluation: Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.
- Written Exam: Yes (70% pass requirement)
- Practical Exam: No
- Retraining/Recertification: Module 3 is one of three required for certification. Recertification is necessary after two years at the end of the calendar year.

Testing, Procedures, and Credentialing

After the completion of the three modules of the Stormwater Erosion and Sediment Control training course, a test will be administered to participants. The test format will consist of seventy-five (75) multiple choice questions relative to the material covered. It will be divided in three sections of twenty-five (25) questions corresponding with each one of the three modules.

The course will be graded on a pass/fail basis. A minimum pass score of seventy percent (70%) is required. The applicant will receive feedback by letter notifying a pass/fail. Those applicants passing will receive a Desoto County Stormwater Advisory Committee Certificate of Training denoting successful completion of the Stormwater Erosion and Sediment Control Course. Applicants earning a fail rate will be notified of the need to retake the course. Applicants earning a pass rate will receive a certificate of training and will be included in a master list of certified inspectors compliant with construction permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch and Southaven.

The training certificate issued is valid for two years and shall require renewal after two years by the end of the calendar year in order to stay abreast of the changes in permit requirements, procedures, and BMPs.

The authority for credentialing rests with the Desoto County Stormwater Advisory Committee. All applicants holding this training certificate will be eligible to receive a permit for construction activities within Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch and Southaven, and any other municipality that may become part of the Desoto County Stormwater Advisory Committee.

CHAPTER IV

CONCLUSIONS WITH RECOMMENDATIONS

Conclusions

Polluted runoff has been recognized by environmental scientists and regulators as the single largest threat to water quality in the United States (NEMO Fact Sheet, 1994). Sediment from construction sites, where erosion and sediment control BMPs are not used correctly, is a major source of stormwater pollution. Contractor training and certification are one the four main BMPs recommended by the EPA to control stormwater runoff from construction sites. Desoto County and the cities of Horn Lake, Olive Branch and Southaven in Mississippi, as MS4 municipalities have the goal to develop a training and certification program for contractors of construction sites one acre or larger. The development of a Stormwater, Erosion and Sediment Control Training and Certification Program enables the Desoto County Stormwater Advisory Committee, and its municipalities to fulfill their contractor training goal. The study and comparison of existing training programs already in place in different states revealed successful and unsuccessful components of each program, applying advantages of already successful programs and learning from program failures.

An informational presentation was made to the North Mississippi branch of the American Society of Civil Engineers (ASCE) in Southaven Mississippi to report the

possibility for the Desoto County Stormwater Advisory Committee to adopt the Stormwater, Erosion and Sediment Control Training and Certification program and the procedures developed in this thesis.

Recommendations

- Recommend that the Desoto County Advisory Committee adopt this training and certification program and procedures as a requirement to be fulfilled by contractors seeking construction permits in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.
- Offer training for the three modules on the same day or on three different days.
- If training occurs on different days, administer a test at the end of each chapter; otherwise, administer test at the conclusion of full day training.
- Conduct training in a classroom setting with plans to develop a webinar.
- If training and certification program is adopted, plan to develop a fourth module including maintenance of BMPs for post-construction activities which can be included after post-construction ordinances are completed. The members of the Desoto County Advisory Committee are currently working in their post-construction ordinances and procedures.
- Conduct presentation for the North Mississippi Homebuilders Association to inform members of training and certification program and where and when training will be offered.

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APPENDIX A

GLOSSARY

List of Acronyms and Abbreviations

ADEM	Alabama Department of Environmental Management
ADEQ	Arkansas Department of Environmental Quality
ASCE	American Society of Civil Engineers
BMP	Best Management Practice
CASQA	California Stormwater Quality Association
CE	Continuing Education
Cal/EPA	California Environmental Protection Agency
CESSWI	Certified Erosion Sediment and Storm Water Inspector
CEU	Continuing Education Unit
CGP-ToR	Construction General Permit – Trainer of Record
CISEC	Certified Inspector Sediment and Erosion Control
CSWB	California Stormwater Board
EPA	U.S. Environmental Protection Agency
CGP	Construction General Permit
FDEP	Florida Department of Environmental Protection
LCGP	Large Construction General Permit
LDEQ	Louisiana Department of Environmental Quality
MDEP	Maine Department of Environmental Protection
MDE	Maryland Department of the Environment
MDEQ	Mississippi Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NEMO	Non-Point Education for Municipal Officials
NPDES	National Pollutant Discharge Elimination System
NPS	Non-Point Source Pollution
PDH	Professional Development Hour
QCI	Qualified Credentialed Inspector
QSP	Qualified SWPPP Practitioner
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board (California)
TDEC	Tennessee Department of Environment and Conservation
TEI	Thompson Engineering, Inc.
URL	Universal Resource Locator
VCCP	Voluntary Contractor Certification Program

List of Definitions

Best Management Practice (BMP)	According to EPA, Best Management Practices are "techniques, measures or structural controls that are used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner.
Certification	Refers to confirmation of completion of training requirements.
Construction Activity	Includes a disturbance to the land that results in the change in topography, existing soil cover (both vegetative and non-vegetative), or the existing topography that may result in accelerated storm runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.
Control Measure	Refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States.
Erosion Control	Vegetation, such as grasses and wildflowers, and other materials, such as straw, fiber, stabilizing emulsion, protective blankets, etc., placed to stabilize areas of disturbed soils, reduce loss of soil due to the action of water or wind, and prevent water pollution.
General Phase II Permit	Phase II is the second stage of the State and Federal Stormwater Permit Regulations.
Land Disturbance	Construction activities such as clearing, grading, excavating, and stockpiling.
Large Construction Site	Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres.
MS4	Acronym for Municipal Separate Storm Sewer System and is used to refer to either a Large, Medium, or Small Municipal Separate Storm Sewer System. The terms is used to refer to either the system operated by a single entity or a group of systems within an area that are operated by multiple entities.

List of Definitions (Continued)

Municipality	Refers to a city, town, county, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes.
National Pollutant Discharge Elimination System (NPDES)	Refers to Section 402 of the Federal Clean Water Act.
Owner/Operator	Any party associated with a construction project that meets either of the following two criteria: (1) The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) The party has day to day operational control of those activities at a project which are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).
National Pollutant Discharge Elimination System (NPDES)	Means the regulations under the Clean Water Act which prohibits discharge of pollutants into water of the United States unless a special permit is issued.
Phase II	Second state of the State and Federal stormwater permit regulations.
Non-Point Source Pollution	Any source of water pollution that does not meet the legal definition of point source. Point source means any discernable confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or maybe discharged.
Pollutant	A partial listing includes dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, sediment, silt, cellar dirt, and industrial or municipal waste.
Polluted Runoff	Rainwater or snow melt that picks up pollutants and sediments as it runs off roads, highway, parking lots, lawns, agricultural lands, logging area, mining sites, septic systems, and other land use activities that can generate pollutants.
Qualified Personnel	Person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measure selected to control the quality of stormwater discharges from the construction activity.

List of Definitions (Continued)

Region IV	U.S. Environmental Protection Agency (EPA) geographic boundaries. Region IV is one of 10 EPA regions and consists of the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.
Region VI	U.S. Environmental Protection Agency (EPA) geographic boundaries. Region VI is one of 10 EPA regions and consists of the states of Arkansas, Louisiana, New Mexico, Texas, and Oklahoma.
Sediment	Solid particulate matter, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.
Small Construction Site	Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance.
Stormwater	Rainfall runoff, snowmelt runoff, and surface runoff.
Stormwater Management Program	Comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system.
Storm Water Pollution Prevention Plan (SWPPP)	Plan that includes site map(s), an identification of construction contractor activities that could cause pollutants in the storm water, and a description of measures or practices to control these pollutants.
State Water Resources control Board	The California agency that implements and enforces the Clean Water Act Section 402(p) NPDES permit requirements, is issuer and administrator of these permits as delegated by the EPA.
Training Certification	Stormwater training and certification program.
Urbanized	Land area comprising one or more places (core and fringe) with urban limits defined by a population density of 1,000 people per square mile and its contiguous census tracks of 5600 people per square mile – that together have a residential population of at least 50,000.
Water body	A geographically defined portion of navigable waters, waters of the contiguous zone, and ocean waters under the jurisdiction of the United States, including segments of rivers, streams, lakes, wetlands, coastal waters and ocean waters.

List of Definitions (Continued)

Waters of the United State	Refer to: 1. all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; 2. all interstate waters, including interstate wetlands; 3. all other waters such as intrastate lakes, rivers, streams (including intermittent streams). mudflats, sandflats, wetlands, sloughs, prairie potholes. wet meadows, playa lakes. or natural ponds the use or degradation of which would affect or could affect interstate or foreign commerce, including any such waters: i. which are or could be used by interstate or foreign travelers for recreational or other purposes; ii. from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or iii. which are or could be used for industrial purposes by industries in interstate commerce. 4. all impoundments of waters otherwise defined as waters of the United States under this definition; 5. tributaries of waters in paragraphs (1) through (4) of this definition; 6. the territorial sea; and 7. wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition. "Wetlands" are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally) include swamps, marshes, bogs, and similar areas. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Act (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria for this definition) are not waters of the United States. (40 CFR 232.2.)

Wetlands	Generally include swamps, marshes, bogs, and similar areas. As defined in 40 CFR 230.3 and the HRS, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Such areas can be natural or constructed. Only areas that meet this definition are eligible to be evaluated as wetlands for HRS purposes. Wetlands identified using other definitions (e.g., the Food Security Act of 1985, the wetlands classification system of the U.S. Fish and Wildlife Service, the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands) are not eligible unless they also meet the 40 CFR 230.3 definition (see HRSGD Section 11.1). Additionally, for HRS purposes, isolated wetlands and wetlands contiguous to rivers, lakes, and coastal tidal waters are defined as surface water bodies.

Source:
Mississippi Department of Environmental Quality. General Permits Branch.

Caltrans, November 16, 2010.

EPA Glossary of Terms and Acronyms Superfund M - Z (Last updated August 10, 2011). Retrieved form: http://www.epa.gov/superfund/training/hrstrain/htmain/glossmz.htm

EPA. Water: Total Maximum Daily Loads (303d). Glossary (last updated January 6, 2010). Retrieved from:
http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/glossary.cfm#w

EPA Water Quality Handbook: Glosary (9/15/93). Retrieved from:
http://water.epa.gov/scitech/swguidance/standards/handbook/glossary.cfm

Mississippi Department of Transportation. (January 2009) NPDES Phase II Stormwater Management Plan, p. 45-47

Natural Resources Defense Council (NRCD).

APPENDIX B

COURSE OUTLINE

Desoto County Stormwater Advisory Committee
Stormwater, Erosion and Sediment Control
Training and Certification

General Course Outline

General Description
This six-hour course includes three modules that may be taken the same day or individually.

Subject Category
Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Prerequisite: No

Course Length: 6 hours

Delivery Mode: Lecture, PowerPoint, and Video

Schedule
Quarterly (monthly for the first year in order to get sufficient personnel trained)

Location
Desoto County Road Department Building – Nesbit, MS

Target Audience
Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permits in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

Course Purpose
This course is designed to provide stormwater, erosion and sediment control training for contractors and personnel involved in land disturbing activities who will perform the mandatory construction site inspections of construction sites covered under the Construction General Permit in North Mississippi. The training will consist of the following modules:

Module 1. Impact of Construction Activities on Stormwater Quality
Module 2. Permit Requirements and Procedures
Module 3. Best Management Practices – Erosion and Sediment Control
Testing and Credentialing

The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education.

Course Objectives
To create awareness of stormwater pollution and its consequences; review requirements and procedures to be in compliance with permits; provide information about best management practices for erosion and sediment control to minimize or eliminate stormwater pollution from construction activities.

Learning Outcomes
1. Understand the significance of stormwater pollution.
2. Recognize the impact of construction activities on stormwater quality.
3. Comprehend the effect of development in urban and urbanizing areas on stormwater quality.
4. Understand construction permit requirements and procedures of the Mississippi Department of Environmental Quality.
5. Become aware of significant changes in permit requirements and procedures.
6. Learn how to properly complete and submit permit forms and applications.
7. Understand the importance of construction site best management practices and correct use.
8. Learn how to recognize the difference between erosion control best management practices and sediment control best management practices.
9. Learn how to recognize the need for maintenance of best management practices in place.

Course Instructional Materials
- Lecture
- PowerPoint Presentation
- Video: *Ground Control: Stormwater Pollution Prevention for Construction Sites*

Instructor
Susana Cook Martin-Velazquez

Training Compliance Requirements
As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Handouts

- PowerPoint Handout
- Mississippi Department of Environmental Quality Permit Construction Forms Package
- Mississippi Stormwater Pollution Prevention Plan (SWPPP) Guidance Manual for Construction Activities
- Mississippi Department of Environmental Quality Erosion and Sediment Control Field Manual
- List of useful URLs and reference materials

Participant Evaluation

Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.

Written Exam: Yes (70% pass requirement) **Practical Exam:** No

Retraining/Recertification: Should be retaken after two years by the end of the calendar year.

Course Outline
Module 1. Impact of Construction Activities on Stormwater Quality

General Description
This 1.5 hour module may be taken in conjunction with the other modules of the general course or individually.

Subject Category
Preparation for compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Prerequisite: No

Course Length: 1.5 hours

Delivery Mode: Lecture and PowerPoint

Schedule
Quarterly (monthly for the first year in order to get sufficient personnel trained)

Location
Desoto County Road Department Building – Nesbit, MS

Target Audience
Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

Course Purpose
This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities in Horn Lake, Olive Branch, and Southaven.

The training will consist of a:

Review of the Impact of Construction Activities on Stormwater Quality.

The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education.

Course Objectives
To define Non-Point Source Pollution (NPS); review stormwater pollution facts; create awareness of stormwater pollution and its damaging effect on aquatic and recreational resources; and identify impacts of construction activities on stormwater pollution.

Learning Outcomes
1. Understand the significance of stormwater pollution
2. Recognize the impact of construction activities on stormwater
3. Comprehend the effect of development in urban and urbanizing areas on stormwater quality

Course Instructional Materials
- Lecture
- PowerPoint Presentation

Instructor
Susana Cook Martin-Velazquez

Training Compliance Requirements
As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Handouts
- PowerPoint Handout
- List of useful URLs and reference materials

Participant Evaluation
Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.

Written Exam: Yes (70% pass requirement) **Practical Exam:** No

Retraining/Recertification: Module 1 is one of three required for certification. Recertification is necessary after two years by the end of the calendar year.

Course Outline
Module 2. Construction Permit Requirements and Procedures

General Description
This 1.5-hour module may be taken in conjunction with the other modules of the general course or taken individually.

Subject Category
Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Prerequisite: Module 1

Course Length: 1.5 hours

Delivery Mode: Lecture & PowerPoint

Schedule
Quarterly (monthly for the first year in order to get sufficient personnel trained)

Location
Desoto County Road Department Building – Nesbit, MS

Target Audience
Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

Course Purpose
This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities seeking permit coverage in North Mississippi.

The training will consist of a:
Review of Construction Permit Requirements and Procedures.

The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education and successful permitting.

Course Objectives
To provide an overview of the history of the National Pollutant Discharge Elimination System (NPDES); review requirements and procedures to be in compliance with current construction permits; differentiate between large construction general permit and small construction permit requirements; review MDEQ Construction General Permit Forms;

define stormwater discharges subject to regulation; and provide updates of significant permit changes.

Learning Outcomes

1. Understand construction permit requirements and procedures of the Mississippi Department of Environmental Quality.
2. Become aware of significant changes in permit requirements and procedures.
3. Learn how to properly complete and submit permit forms and applications.

Course Instructional Materials

- Lecture
- PowerPoint Presentation

Instructor

Susana Cook Martin-Velazquez

Training Compliance Requirements

As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven in North Mississippi.

Course Handouts

- PowerPoint Handout
- Mississippi Department of Environmental Quality Permit Construction Forms Package
- List of useful URLs and reference materials

Participant Evaluation

Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.

Written Exam: Yes (70% pass requirement) **Practical Exam:** No

Retraining/Recertification: Module 2 is one of three required for certification. Recertification is necessary after two years at the end of the calendar year.

Course Outline
Module 3. Construction Best Management Practices

General Description
This 1.5 hour module may be taken in conjunction with the other modules of the general course or individually.

Subject Category
Compliance with stormwater permit requirements for Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Prerequisite: Module 2

Course Length: 1.5 hours

Delivery Mode: Lecture and Power Point

Schedule
Quarterly (monthly for the first year in order to get sufficient personnel trained)

Location
Desoto County Road Department Building – Nesbit, MS

Target Audience
Contractors and personnel involved in land disturbing activities for construction sites one acre or larger who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit under the Mississippi Construction General Permits in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven. In particular, on-site project managers.

Course Purpose
This course is designed to provide stormwater and erosion control training for contractors and personnel involved in land disturbing activities seeking permit coverage in North Mississippi.

The training will consist of a review of:

Best Management Practices (BMP) - Erosion and Sediment Control

The goal of this training is to reduce or eliminate stormwater pollution caused by land disturbing activities in North Mississippi through education.

Course Objectives

To inform about the importance of best management practices for erosion and sediment control for minimizing or eliminating stormwater pollution for construction activities;

educate about BMPs and their applicability in construction sites; raise awareness of the necessity of maintenance for installed BMPs.

Learning Outcomes

1. Understand the importance of construction site best management practices and correct use.
2. Learn how to recognize the difference between erosion control best management practices and sediment control best management practices.
3. Learn how to recognize the need for maintenance of best management practices in place.

Course Instructional Materials

- Lecture
- PowerPoint Presentation
- Video: *Ground Control: Stormwater Pollution Prevention for Construction Sites*

Instructor

Susana Cook Martin-Velazquez

Training Compliance Requirements

As determined by the Desoto County Advisory Committee, this training is required for contractors and personnel involved in land disturbing activities who will perform the mandatory regular stormwater inspections of construction sites covered under the Mississippi Construction General Permit in Desoto County, Mississippi and its municipalities of Horn Lake, Olive Branch, and Southaven.

Course Handouts

- PowerPoint handout
- Mississippi Department of Environmental Quality Erosion and Sediment Control Field Manual
- List of useful URLs and reference materials
- Mississippi Stormwater Pollution Prevention Plan (SWPPP) guidance manual for construction sites

Participant Evaluation

Written evaluations regarding the effectiveness of the trainer, the training, and the visual aids.

Written Exam: Yes (70% pass requirement) **Practical Exam:** No

Retraining/Recertification: Module 3 is one of three required for certification. Recertification is necessary after two years at the end of the calendar year.

APPENDIX C

CERTIFICATE


DESOTO COUNTY STORMWATER ADVISORY COMMITTEE
CERTIFICATE OF TRAINING
AWARDED TO
JOHN DOE
FOR SUCCESSFUL COMPLETION OF
STORMWATER AND EROSION CONTROL
TRAINING & CERTIFICATION
(SIX HOURS)
HELD AT DESOTO COUNTY ROAD DEPARTMENT BUILDING – NESBIT, MS
DATE
INSTRUCTOR: SUSANA COOK MARTIN-VELAQUEZ

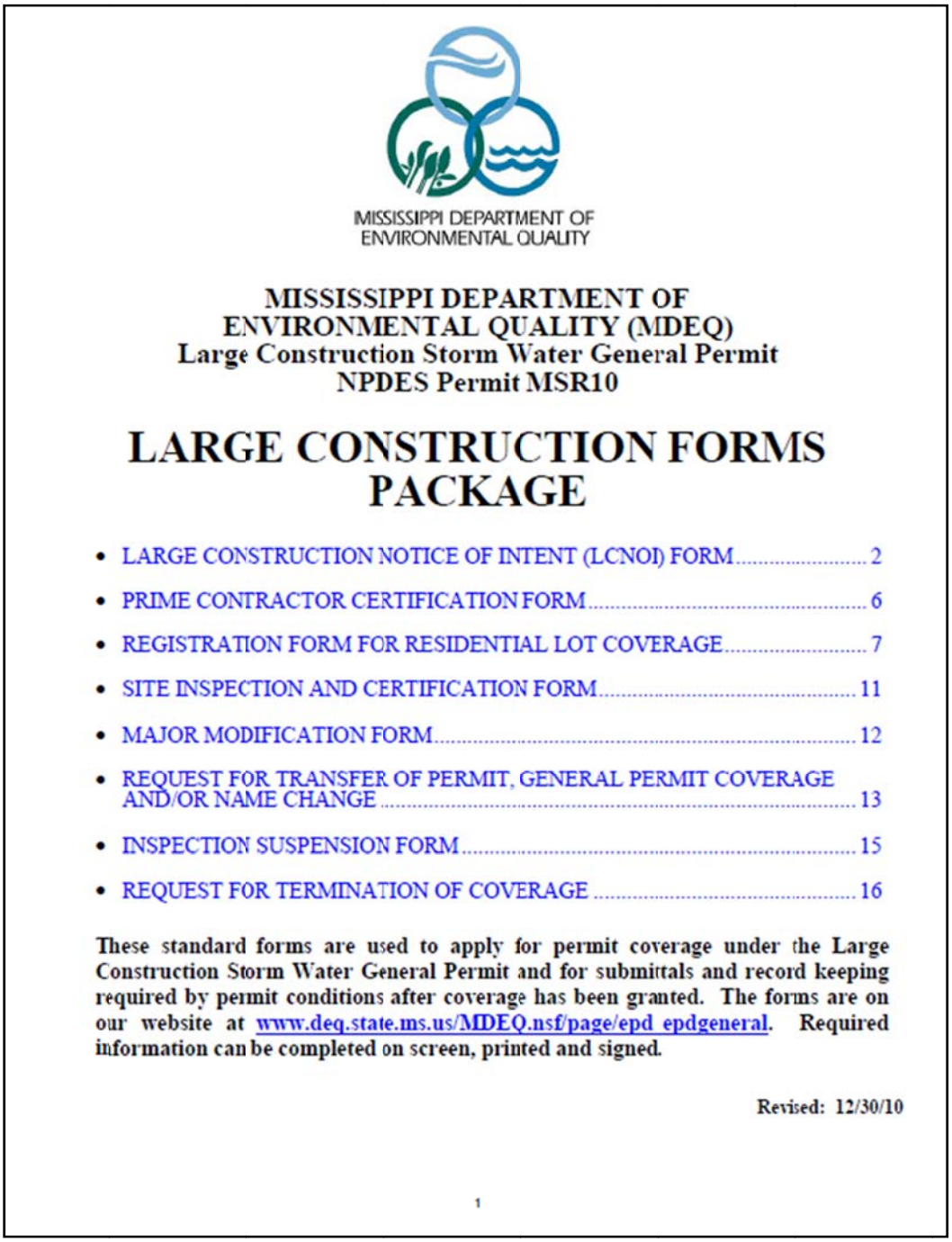
APPENDIX D

TRAINING AND EDUCATIONAL MATERIALS

Course Handouts

MDEQ Permit Construction Forms Package

Available at:
http://www.deq.state.ms.us/MDEQ.nsf/pdf/epd_Large_Construction_Forms_Package/$File/LARGE_CONST_FORMS_PACKAGE.pdf?OpenElement



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ)
Large Construction Storm Water General Permit
NPDES Permit MSR10

LARGE CONSTRUCTION FORMS PACKAGE

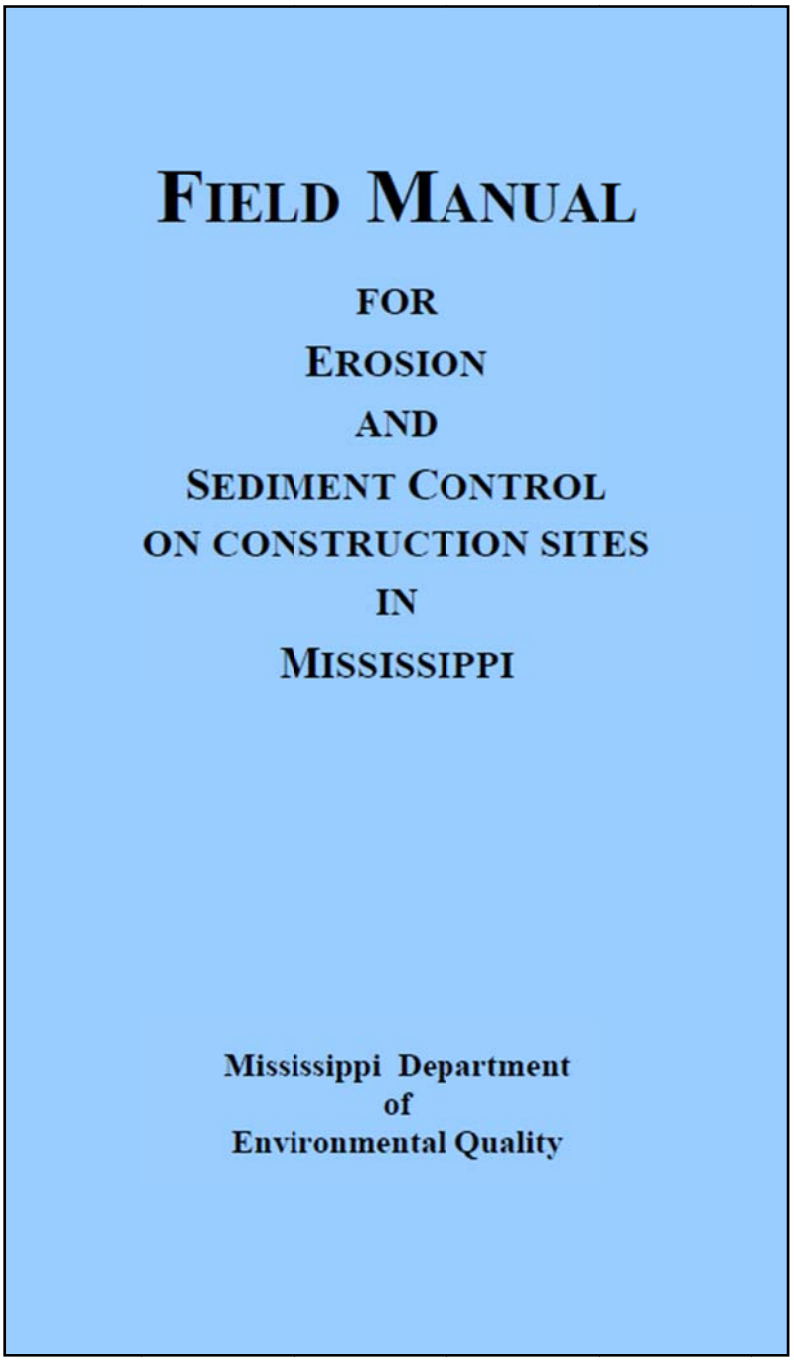
These standard forms are used to apply for permit coverage under the Large Construction Storm Water General Permit and for submittals and record keeping required by permit conditions after coverage has been granted. The forms are on our website at www.deq.state.ms.us/MDEQ.nsf/page/epd_epdgeneral. Required information can be completed on screen, printed and signed.

Revised: 12/30/10

1

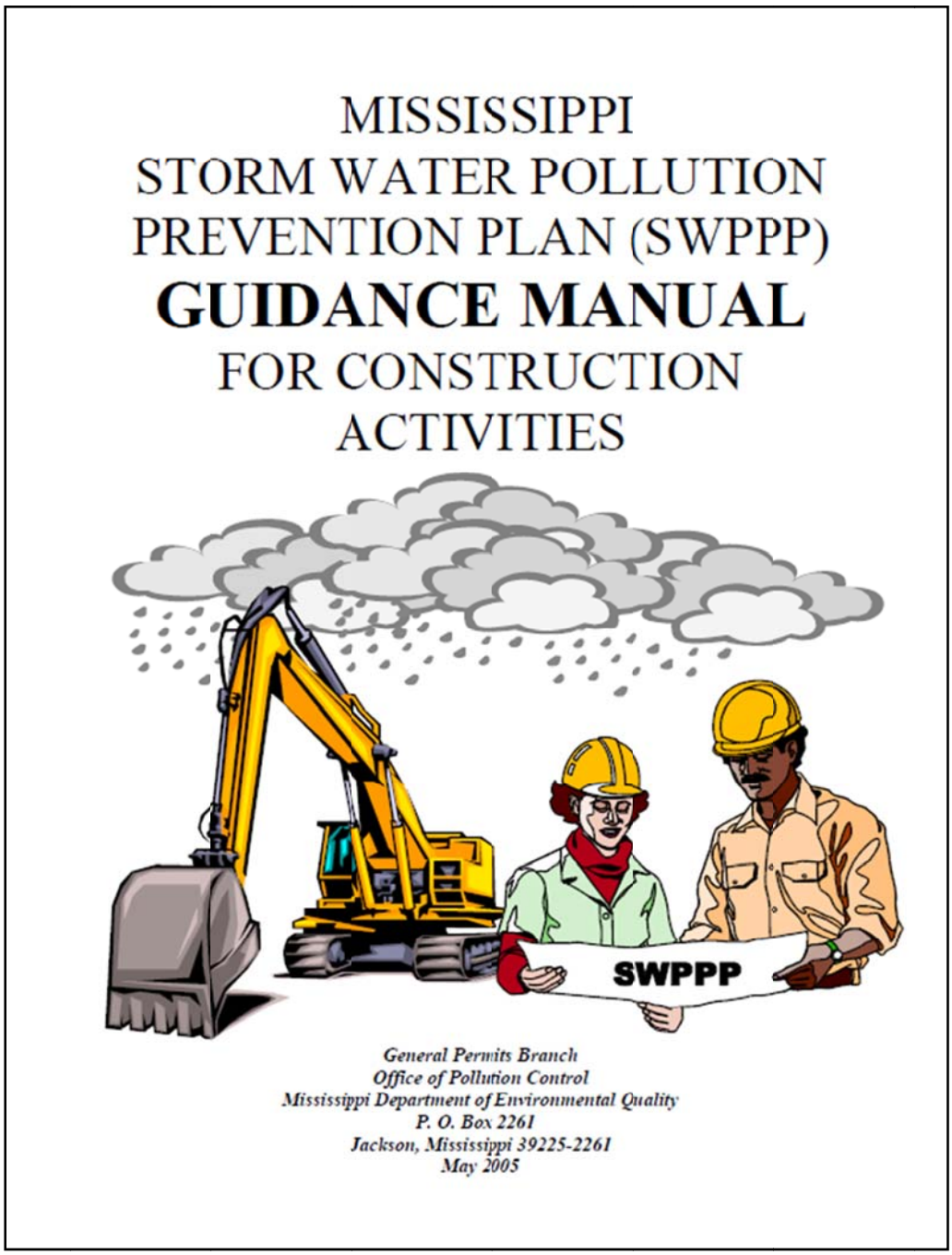
MDEQ Erosion and Sediment Control Field Manual

Available at:
http://www.deq.state.ms.us/MDEQ.nsf/pdf/NPS_Field_Manual_For_Erosion_And_Sediment_Control_Version_2/$File/NPS_FieldManualV2.pdf?OpenElement



Mississippi Stormwater Pollution Prevention Plan (SWPPP) Guidance Manual for Construction Activities

Available at:
http://www.deq.state.ms.us/MDEQ.nsf/pdf/epd_conguidman/$File/ConstructionGM.pdf?OpenElement



APPENDIX E

INTERVIEW QUESTIONNAIRE – STANDARD STORMWATER TRAINING AND CERTIFICATION PROGRAMS

Date of Interview:	
STATE:	
Person Interviewed:	**Title:**
Agency:	**Location:**
Phone:	**E-Mail:**

INTERVIEW QUESTIONNAIRE - Standard Stormwater Training & Certification Programs			
Questions/Data Points	**Yes**	**No**	**Comments**
Does your state have a standard stormwater training and certification program for personnel involved in land disturbance activities?			
Does your state have a mandatory stormwater training and certification program?			
Are there continuing education (CE) requirements?			
Is revocation allowed?			
Is a training requirement applicable to all construction sites?			
Is a training requirement applicable to sites 5 acres or larger?			
Is a training requirement applicable to sites 1-5 acres?			

Questions/Data Points	Yes	No	Comments
What are the CE requirements?			
What is the renewal period of certification?			
What are the testing requirements?			
Name of stormwater regulatory agency			
Name of certifying entity			
Name of stormwater training course			
Course duration			
Who needs to be certified?			
Implementation date of training & certification program			