



# Tennessee Department of Transportation **Statewide Storm Water Management Plan**



Public Meeting  
TDOT Region 1 Auditorium

February 8<sup>th</sup>, 2007

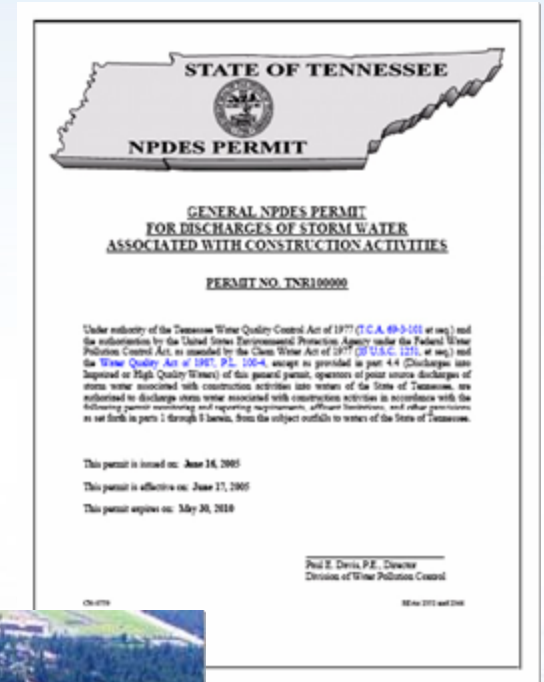
# Project Overview

- **Statewide Storm Water Management Plan (SSWMP)**  
A collection of program recommendations, procedures and new guidance material.
- **Purpose –**  
A plan to protect streams and implement erosion prevention and sediment control measures for TDOT construction projects.
- **TDOT partnered with the Tennessee Department of Environment and Conservation (TDEC) to Develop the SSWMP.**

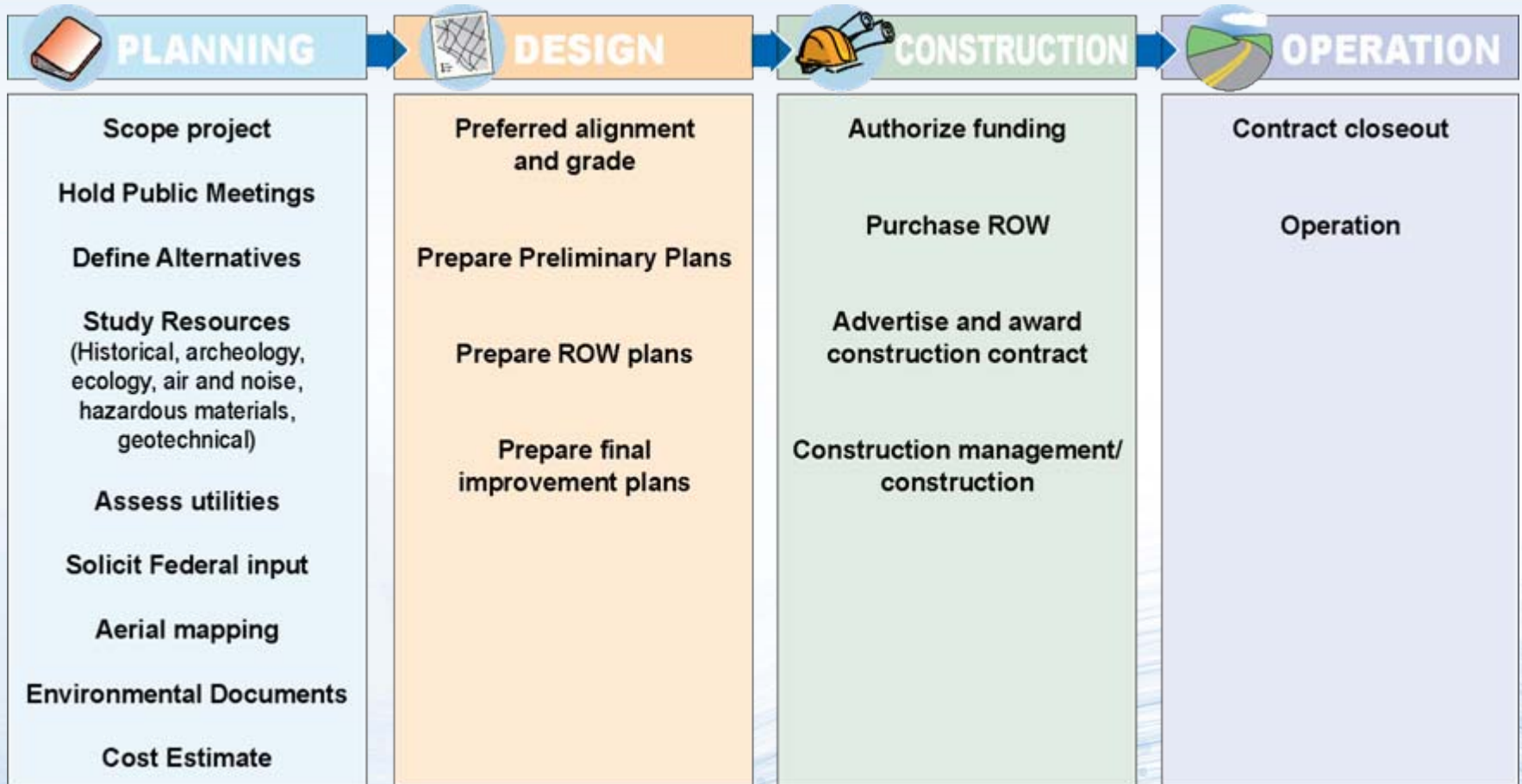


# Background

- TDOT is required to comply with the Federal Clean Water Act
- TDEC is responsible for regulatory permitting for TDOT construction projects
- TDOT and TDEC will jointly monitor construction sites to ensure compliance



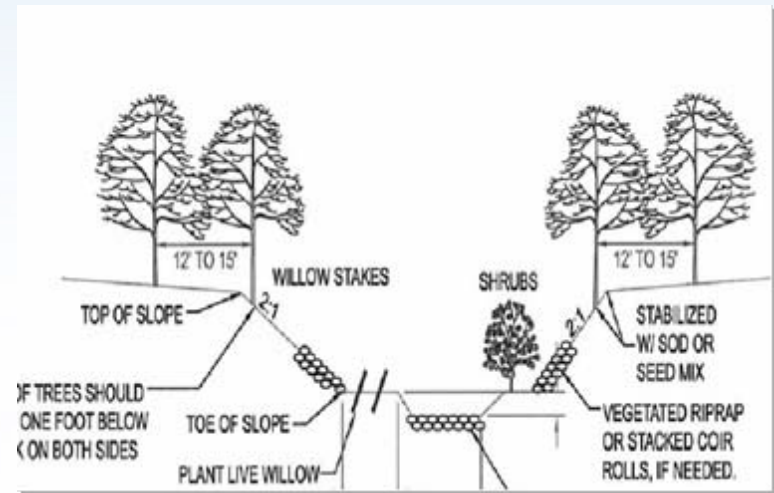
# How TDOT Develops a Project





# SSWMP Elements – Planning

- **Revisions to TDOT's Environmental Procedures Manual**
  - Resources: Streams, springs, wetlands, protected species habitat
    - Step 1: Identify resources
    - Step 2: Avoid resources
    - Step 3: Mitigation – Onsite
    - Step 4: Mitigation – Offsite
- **Ensure identified resources are protected during construction**





# SSWMP Components – Planning (cont'd)

- **Early Coordination and Organization**
  - Internal: Interdisciplinary Project Planning Team
  - External Agencies: FWS, TVA, USACE, TDEC, TWRA
- **New Project Tools**
  - Statewide Environmental Management System
  - Commitment Tracking (PPRM)

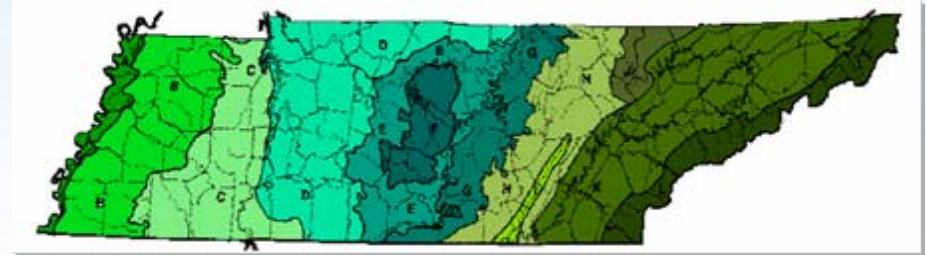




# SSWMP Components – Design

## • GIS Tools

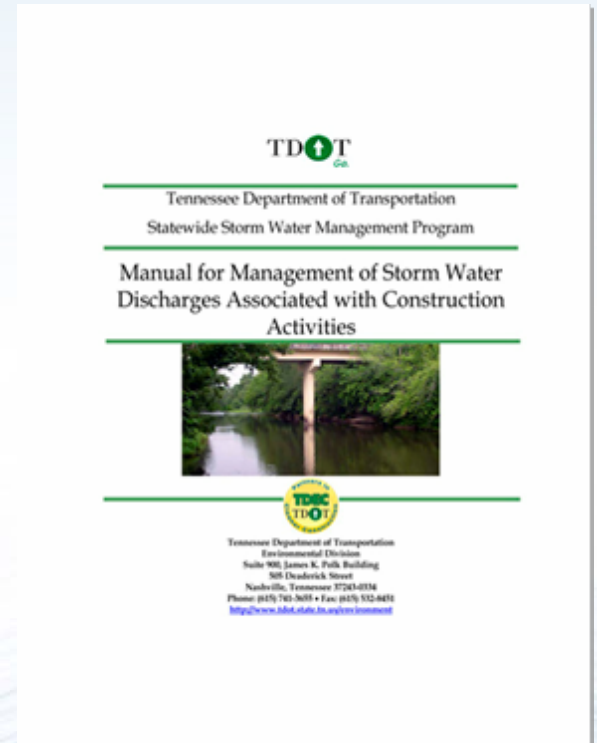
- Hydrology
- Impaired, Tier II and Tier III streams
- TMDL watersheds
- Impervious surfaces
- NPDES CGP dischargers
- Public lands
- Q3 flood data
- Known sinkholes and Class V injection wells
- Soils
- Federal and state threatened and endangered species data, and
- State species deemed in need of management
- Habitat for T&E species
- WQ monitoring stations
- Wetlands
- Buffer zones, as they relate to the NPDES CGP
- Cultural features
- Topography
- Caves
- State and federally owned parks, natural areas and wildlife refuges





# SSWMP Components – Construction

- **New Construction Compliance Manual**
- **Field administration of TDOT construction projects**
  - TDOT Responsibilities
  - Contractor Responsibilities
  - TDEC Responsibilities
- **Project Phasing**
- **Temporary EPSC**







# SSWMP Components – Construction (cont'd)

- **Storm Water Management of Construction Projects**
  - Mobilization Activities
  - Regulatory Compliance
    - Inspection
    - Records
    - Maintenance of BMPs
  - Troubleshooting
  - Field Procedures
  - Installation, Repair, and Maintenance of BMPs





# SSWMP Components – Construction (cont'd)

## • New Tools:


- Materials
- Installation
- Maintenance
- Repair

### CONSTRUCTION SEQUENCING (PHASING)

Effectiveness	■
Longevity	■
Ease of Installation	■
Ease of Maintenance	■

TDOT Specification: N/A  
Standard Drawing: N/A

**Description:** Construction sequencing is required by the of the construction schedule to minimize the amount of more than 50 acres of a larger project site may be open at vegetative cover in place until it is necessary to begin construction activity and to ensure that stabilization is reducing the erosion potential for the site. Sequencing is contractor and the installation of erosion and sediment construction site as follows:



**Figure 5-22** Example of construction phasing


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### SEDIMENT TRAPS

Effectiveness	■
Longevity	■
Ease of Installation	■
Ease of Maintenance	■

TDOT Specification: Section 209 Project Erosion & Standard Drawing: EC-SRT-02, EC-SRT-03, EC-SRT-04 used as temporary sediment traps

**Description:** A temporary BMP using natural depression, fence row, or berm. Sediment traps are used to collect sediment from 1 acre or less. Traps are temporary, using ponds, ditches, settling of suspended solids. Sediment traps are not design sediment basins. Discharges are by means of overtopping & protection flow cover is installed at the top of trapping area



**Figure 5-72** Single excavated sediment trap for water

**Applications:**

- This BMP is used for sediment control.
- These may perimeter of site or along a drainage trapping sediment as in Figure 5-72 on page 76.
- As a supplemental measure to other BMP's such as

**Installation Considerations:**

- Traps can only serve limited drainage areas, per
- Should only be used to supplement upstream or
- Provide necessary safety signage and protection
- Drainage area should not exceed 1 acre.

**Inspection and Maintenance:**

- Check for damage or leakage surrounding embankment
- Ensure that excessive water does not occur at end
- Maintain vegetation.

**Common Problems:**

- Lack of maintenance
- Excessive water at the discharge point of the trap

© TDOT Construction Manual

### EROSION CONTROL BLANKETS

Effectiveness	■
Longevity	■
Ease of Installation	■
Ease of Maintenance	■


Specification: 20106 Construction Requirements, Section 819.28 Erosion Control Blankets  
Standard Drawing: EC-STR-04

**Description:** Erosion control blankets can be organic (biodegradable) which include straw, coir, jute/hemp and biodegradable synthetics or synthetic (non-biodegradable) blankets which are usually made of a geotextile material, or a composite of both types. Erosion control blankets are supplied in rolls. The materials are spread over the surface and anchored into place with wire staples or plastic pins to provide a continuous cover over the planned soil bed. These products are designed to dissipate the energy of raindrop impact and prevent mobilization of soil particles in surface flows. Blankets must come from the TDOT Qualified Products List (QPL) for the appropriate slope and condition. The QPL classifies blankets in four types (Type I to Type IV) based on slope.



**Figure 5-26** Outdoor testing showing three different types of erosion control blanket

**Early performance testing of erosion control blankets was conducted outside. This picture shows three different types of erosion control blanket. From left to right a woven polypropylene material, an erodible blanket and a straw blanket. The test shown is on clay soil at a slope of 3:1.**



**Figure 5-27** Examples of the variety of materials used in blankets and channel liners

**Applications:**

- Protection of slopes. Type depends upon slope steepness and soil type (see QPL)



# SSWMP Components – Construction (cont'd)

- **New Manual for Use of Borrow and Waste Sites:**
  - Ensures high standards are applied to offsite areas of the project:
    - Requires a Waste and Borrow Site Plan
    - Review of regulatory permits
    - Engineering study and plans
    - Inspection and maintenance of all EPSC measures
    - Review of Final stabilization
    - Permit close-out





# SSWMP Components – Operation

- **Project mitigation commitments are tracked to ensure:**
  - Monitoring
  - Sampling
- **TDOT Maintenance forces will:**
  - Maintain final stabilization
  - Repair erosion control measures



# SSWMP Component – Program Rationale, Evaluations, and Recommendations

- **Provides detailed recommendation for program including:**
  - Additional staff positions (EDG/ECO)
  - Training
  - Product approval procedures
  - Water quality monitoring recommendations
  - ROW purchase recommendations



# Comprehensive Inspection Program

- **Revised the Construction Site Inspection Process:**
  - TDOT self monitoring with TDEC oversight
  - Training for inspectors and contractors
  - TDOT site inspectors in TDOT construction offices and Environmental Compliance Officer at Regional Offices
  - Incorporate a tracking mechanism
  - Site inspection frequency continuously evaluated
  - Modify construction contract language



# Training

- **Five Training Courses:**

- **Course 1: Storm Water Practice Inspection and Maintenance**  
(4hr Class / 4hr Field)

- EPSC BMPs
- Inspection documentation, and compliance CGP
- Self-monitoring program
- Troubleshooting of BMPs

**Audience:** TDOT Site Inspectors, Project Supervisors, Storm Water Coordinators, Consultants, **Contractors (Estimators, Operations Officers, Site Supers/PM)**, TDEC

- **Course 2: Construction Site Management** (8hr Class)

- Implementation and administration of the SWPPP
- ARAPs, documentation
- Coordination between divisions
- Operation of the construction site
- Management: of self-monitoring program, inspections

**Audience:** TDOT Project Supervisors, Storm Water Coordinators, **Contractors (Estimators, Site Supervisors/Project Managers)**



# Training

- **Course 3: Preparation of the SWPPP (8hr Class)**
  - Preparation of SWPPP and EPSC plans
  - Selection of EPSC measures
  - Design (TDOT standard drawings)
  - Protect sensitive areas, compliance with CGP, mitigation measures

**Audience:** TDOT Designers, **Contractors (Estimators and Operating Officers)**, SWPPP Consultants, Project Supervisors, TDEC

- **Course 4: Stream Determinations (8hr Class and Field)**
  - Stream determination protocols
  - Identifying intermittent and/or headwater streams

**Audience:** Site Inspectors, SWPPP Consultants, Ecology Staff, Ecology Consultants, TDEC

- **Course 5: Natural Channel Design (8hr Class and Field)**
  - Introduction to natural stream channel design
  - Mitigation design techniques
  - Associated permitting

**Audience:** Environmental Design Group Staff, Consultants, TDEC







[www.tn.gov/tdot/sswmp](http://www.tn.gov/tdot/sswmp)

Links to each product

Link to Public Meeting announcement



# Opportunities for Public Input

- **Public Hearings**

Monday, February 5, 2007 (6-8 pm)  
Christian Brothers High School  
Heffernan Hall  
5900 Walnut Grove Rd.  
Memphis, TN 38120-2174

Tuesday, February 6, 2007 (6-8 pm)  
Adventure Science Center  
800 Fort Negley Blvd.  
Nashville, TN 37203

Thursday, February 8, 2007 (6-8 pm)  
TDOT Region 1 Auditorium  
7345 Region Lane  
Knoxville, TN 37914

- **Written Comments**

Submit written comments to:  
Mr. Doug Delaney  
Environmental Division Director  
Tennessee Department of  
Transportation  
James K. Polk Building, 505 Deadrick  
Street, Suite 700  
Nashville, TN 37243-0349

***Written comments must be  
received by March 1<sup>st</sup>, 2007***



# Project Schedule

## Public Meetings

February 5, 6, 8

## Final Draft

April 2007

## Final Submittal to TDEC

May 10, 2007



# Questions & Answers

