INDOT Storm Water Quality Management

Nathan Saxe
INDOT, Ecology and Waterway Permitting Office

Fall 2014

Open House Introduction

- **Who is here?**
  - INDOT Central Office, INDOT District, Public, Local Municipalities

- **What are we discussing?**
  - INDOT's Statewide Storm Water Quality Management Plan
  - INDOT and our storm water

Open House Introduction

- **Why are we meeting?**
  - Centralizing INDOT's Storm Water program
    - In order to address statewide needs, we have to know the needs of our stakeholders statewide

- **What are our long-term goals?**
  - Identify the stakeholders
  - Listen to them
  - Ensure opportunities to communicate

Agenda

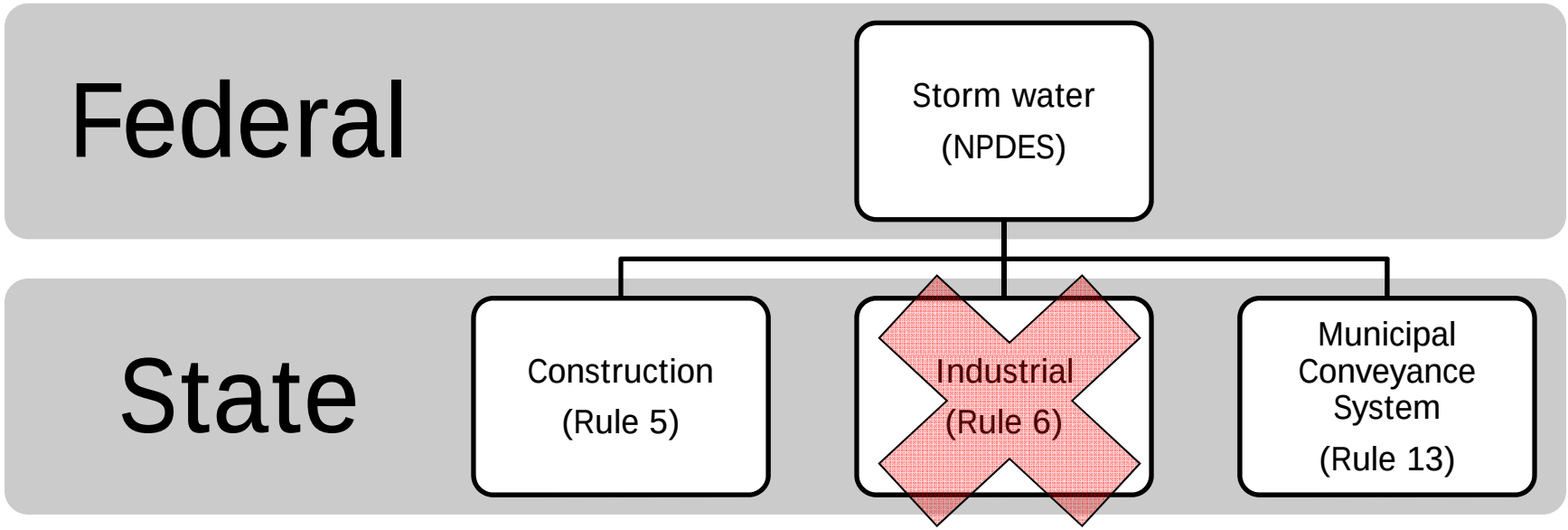
- Storm Water Regulations
- Introduce INDOT
- Introduce INDOT's Storm Water Quality Management Plan
- Opportunities to Share

Why INDOT Storm Water Mgmt.?

- **Clean Water Act – Federal Law**
  - National Pollutant Discharge Elimination System General Permits
  - Controls water pollution from point "concentrated" sources within urbanized areas

- **Doesn't INDOT just build roads?**
  - Roadside ditches, curbs and inlets, storm sewers
  - Concentrate and discharge storm water

What are the IN Regulations?

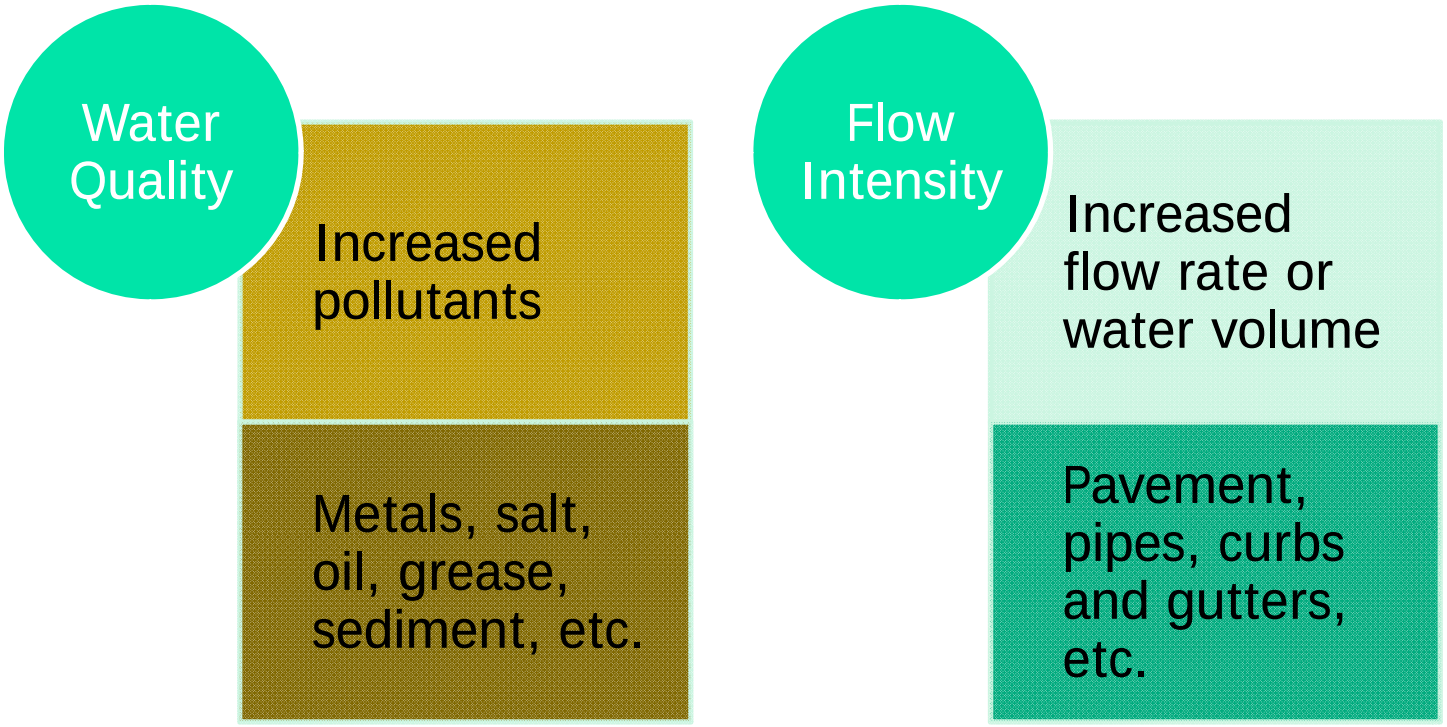


Rule 13 – Storm Water

- **INDOT a significant contributor**
- **Program that addresses storm water**
  - Impacts from construction
  - Impacts from post-construction
  - Quality
  - Flow Rate and Volume

Post-Construction Storm Water

- **INDOT contribution to the pollutants and flow of receiving streams**

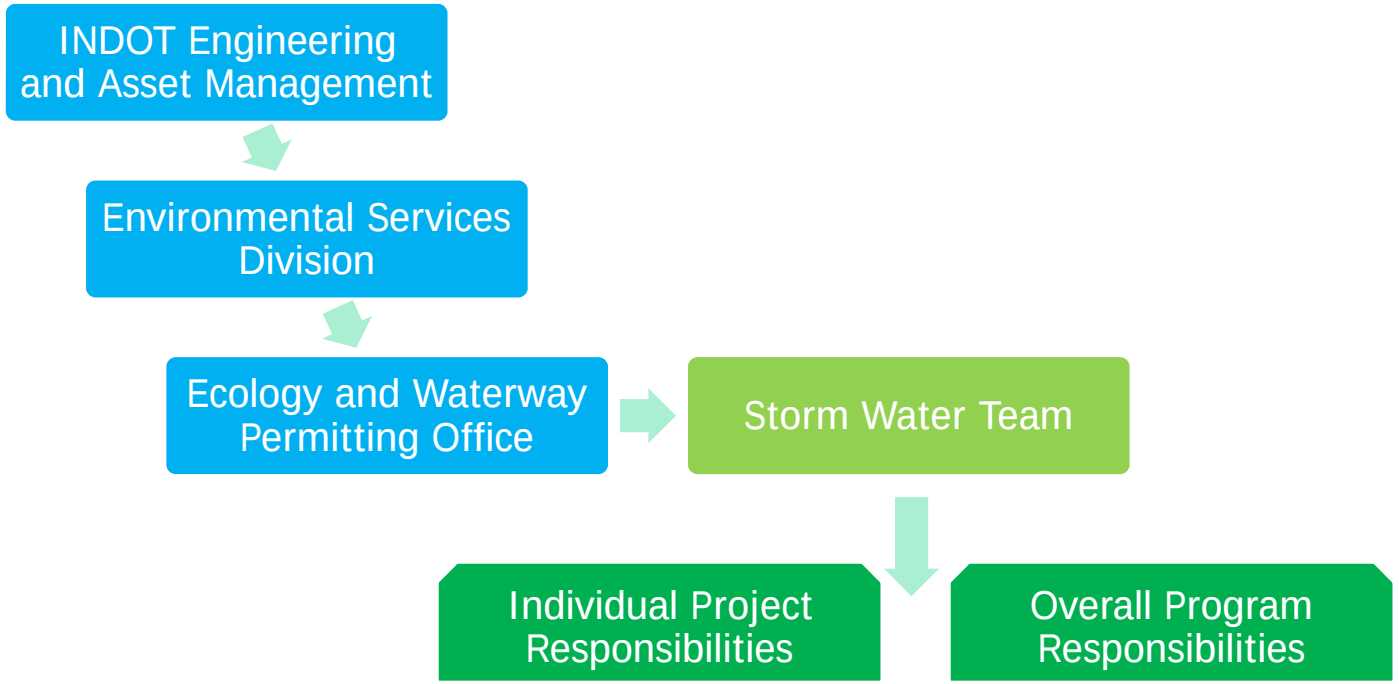


Agenda

- Storm Water Regulations
- **Introduce INDOT**
- Introduce INDOT's Storm Water Quality Management Plan
- Opportunities to Share

INDOT Storm Water Responsibilities

- **INDOT Storm Water Team**



Storm Water Team

- **Core project responsibilities**
  - Regulatory agency coordination
  - Regulatory storm water management
    - Rule 5
    - Rule 13
  - Review Storm Water Pollution Prevention Plans (SWPPPs)
  - Perform site visits to ensure permit compliance

Storm Water Team (cont.)

- **Program responsibilities**
  - Guidance and policy development
    - Design Manual, Permitting Manual, Internal Checklists, etc.
    - Standard Specifications, Special Provisions, Prequalification Criteria, etc.
    - Training
  - Reporting (Regulatory Agencies, Federal Highway Administration, INDOT)

INDOT Storm Water Responsibilities

- **Other INDOT divisions**
  - Management Information Systems
  - Communications
  - Hydraulic Services
  - Operations
  - Facilities
  - Construction
- **Six INDOT Districts**

Agenda

- Storm Water Regulations
- Introduce INDOT
- **Introduce INDOT's Storm Water Quality Management Plan**
- Opportunities to Share

INDOT's Centralization Plan

- **Evaluate** statewide program
- **Determine** INDOT strategies to maintain/get in compliance
- **Develop** Implementation Plan
- **Resubmit** Rule 13 Permit Notice of Intent – April 2014
- **Develop** Storm Water Quality Management Plan
- **Implement** SWQMP

INDOT SWQMP

- **Six Minimum Control Measures**
  - Public education and outreach
  - Public participation and involvement
  - Illicit discharge detection and elimination
  - Construction storm water runoff control
  - Post construction storm water control
  - Operations/good housekeeping
- **Over 60 measurable goals proposed**

Public Education

- **Anti-litter campaign for rest areas**
- **Online library**
- **Purdue Road School**
- **Adopt-a-Highway program**
- **Storm water management training**
  - Internal INDOT employees
  - External audiences

Public Involvement

- **Storm Water Quality Management Plan Open House**
  - One in each district
  - Welcome!
- **Project development**
  - Project stakeholders
  - Early coordination

Illicit Discharge

- **GIS Database for Mapping**
  - Significant overlap with other Municipal Separate Storm Sewer Systems
  - Goal: GIS available to MS4s statewide
- **Training on Illicit Discharge ID**
- **Standard reporting to local jurisdictions**

Construction

- Updating INDOT Standards
- Field Guide development
- INDOT Construction Certification for Storm Water Management

Construction – E&SC Standards

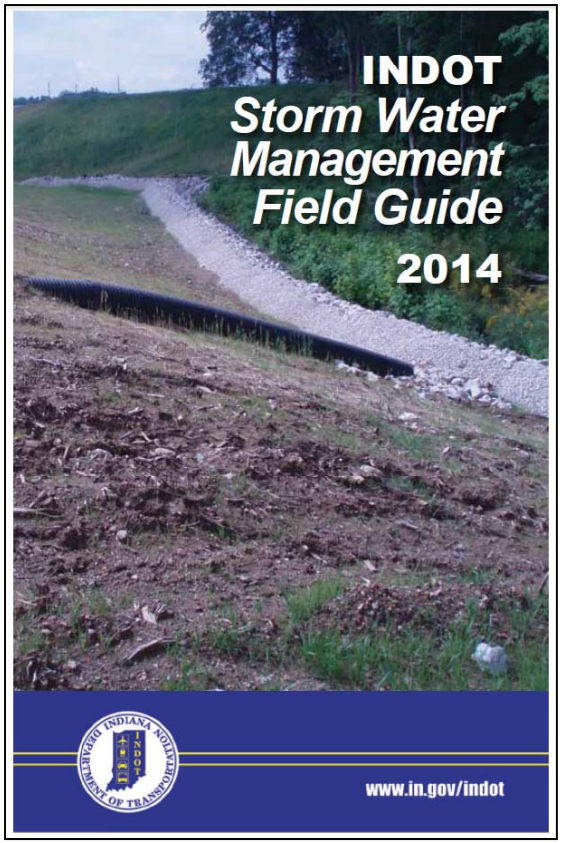
- **Updating INDOT Standards**
  - Standardizes INDOT's best management practices (BMPs) for erosion and sediment control (E&SC)
  - INDOT's 2014 Standard Spec. Book (highlighted changes online)
    - Provides quality adjustments ($) for poor performance
  - Design Manual Chapter 205

Construction – E&SC Updates

- **Updating INDOT Standards**
  - Standardized Inspection Reports
    - Recurring Special Contract Provision
      - RSP 108-C-192d - effective 9.1.13 lettings
    - Standardizes and simplifies field documentation
    - Project Site Inspection Application/Database
  - Contractor Management Procedures
    - Construction Memo 12-05
    - Organizes escalation procedures

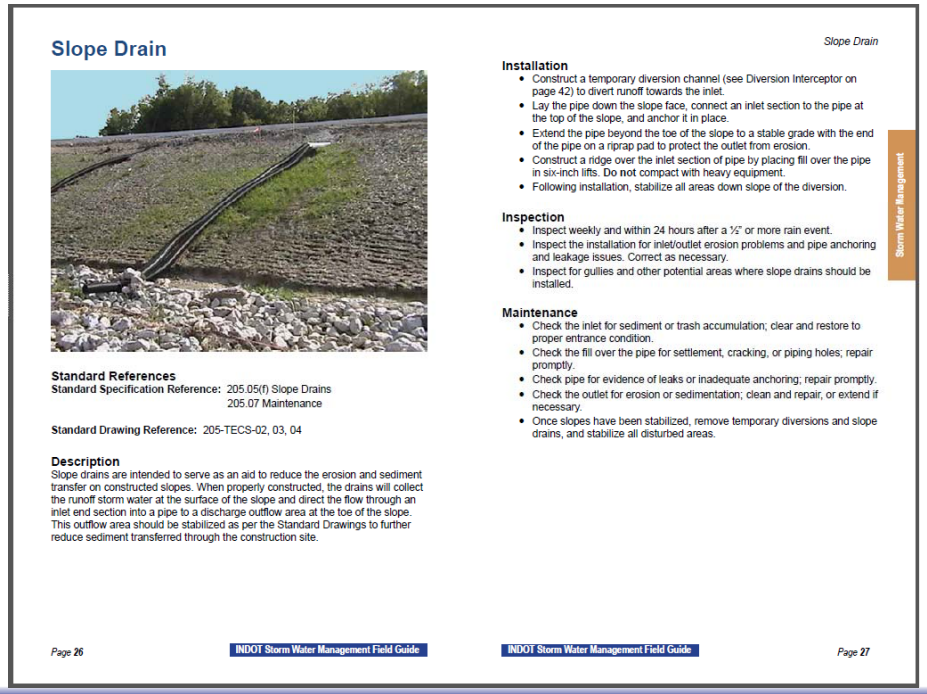
Construction – Field Guide

- **6” x 9” format**
  - Allows for similar, convenient sized field manuals
  - Ample space for information and photos
  - Available on INDOT’s Storm Water Website: http://www.in.gov/indot/2892.htm



Construction – Field Guide

- **Information on installation, inspection and maintenance**
  - Provides specific installation, inspection and maintenance concerns for BMPs



Slope Drain

Standard References
Standard Specification Reference: 205.05(f) Slope Drains
205.07 Maintenance

Standard Drawing Reference: 205-TECS-02, 03, 04

Description
Slope drains are intended to serve as an aid to reduce the erosion and sediment transfer on constructed slopes. When properly constructed, the drains will collect the runoff storm water at the surface of the slope and direct the flow through an inlet end section into a pipe to a discharge outflow area at the toe of the slope. This outflow area should be stabilized as per the Standard Drawings to further reduce sediment transferred through the construction site.

Installation
- Construct a temporary diversion channel (see Diversion Interceptor on page 42) to divert runoff towards the inlet.
- Lay the pipe down the slope face, connect an inlet section to the pipe at the top of the slope, and anchor it in place.
- Extend the pipe beyond the toe of the slope to a stable grade with the end of the pipe on a riprap pad to protect the outlet from erosion.
- Construct a ridge over the inlet section of pipe by placing fill over the pipe in six-inch lifts. Do not compact with heavy equipment.
- Following installation, stabilize all areas down slope of the diversion.

Inspection
- Inspect weekly and within 24 hours after a ½" or more rain event.
- Inspect the installation for inlet/outlet erosion problems and pipe anchoring and leakage issues. Correct as necessary.
- Inspect for gullies and other potential areas where slope drains should be installed.

Maintenance
- Check the inlet for sediment or trash accumulation; clear and restore to proper entrance condition.
- Check the fill over the pipe for settlement, cracking, or piping holes; repair promptly.
- Check pipe for evidence of leaks or inadequate anchoring; repair promptly.
- Check the outlet for erosion or sedimentation; clean and repair, or extend if necessary.
- Once slopes have been stabilized, remove temporary diversions and slope drains, and stabilize all disturbed areas.

Construction – Field Guide

- **Thumbs up …thumbs down installation guidance**
  - Provides quick visual reference to installation successes and installation pitfalls

Construction – Certification

- **Current INDOT contracts**
  - Advertised & awarded to a contractor
  - Requires designated E&SC supervisor
  - Currently lacks specific criteria for designee
    - Indiana Code (327 IAC 15-5) requires inspector to be “a trained individual”

Construction – Certification

- **Session 1**
  - Focused introduction to construction storm water management (NOT all-inclusive)
- **Session 2**
  - INDOT specific requirements and considerations
- **Certification Exam**
  - Open-book, proctored exam

Construction – Certification

Early 2014	• Finalized INDOT Construction Certification for Storm Water Management
2014	• Implement INDOT Construction Certification Training
??	• Require INDOT certification on select projects
??	• Require national certification on select projects • CESSWI, CESSWI In-Training, CISEC, etc...

Post Construction

- ID pollutants of concern
- Research BMP effectiveness
- Revise Storm Water Design Policy
- Update design manual and specifications
- Sampling program

Good Housekeeping

- **Revise Mowing Policy**
- **Facility SWPPP Management**
- **Continue to improve snow removal practices**

Agenda

- Storm Water Regulations
- Introduce INDOT
- Introduce INDOT's Storm Water Quality Management Plan
- **Opportunities to Share**

Opportunities to Share

- **Information**
  - Municipality mapping of storm water facilities
  - Publications
  - Pollution data
- **Resources**
  - Training opportunities
  - Website communication and content
  - Research
  - Specialty equipment

Opportunities to Share

- **Management tools**
  - Standards
  - SOPs and checklists
  - Computer applications
- **Ideas**
  - Community of practice
  - Standard solutions
  - Future storm water needs
  - Municipality goals

Questions?

- **Nathan Saxe**
  - Manager, Ecology and Waterway Permitting Office
  - nsaxe@indot.in.gov
  - 317.232.0240
- **Kathy Allen**
  - Storm Water Specialist
  - kallen@indot.in.gov
  - 317.232.5361

- Website: http://www.in.gov/indot/2892.htm