



Best Practices in Addressing NPDES and Other Water Quality Issues in Highway System Management

NCHRP 20-68A, Scan 08-03
DOMESTIC SCAN PROGRAM

Scan Overview

Domestic Scan Program

- ▶ Purpose: Technology transfer
- ▶ Approach
 - Develop 'study' questions and review the programs at high-performing agencies
 - Develop education materials for public dissemination
 - ▶ Summary Report
 - ▶ Presentation
 - ▶ Scan Report
 - Implementation



Implementation Outcomes

- ▶ Report/ catalogue of ready to implement technologies, methods and processes
- ▶ Applied Studies to examine specific practices in greater depth
- ▶ Influence on agency business practices
- ▶ Suggestions for national regulatory procedures development



Scan 08-03 Team

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Scan Sites

- ▶ **Buffalo, NY**
- ▶ **Washington DC**
- ▶ **Baltimore, MD**
- ▶ **Raleigh, NC**
- ▶ **Austin, and College Station, TX**
- ▶ **Orlando, FL**



Source: ESRI

Scan Focused on Four Topic Areas

1. Total Maximum Daily Loads (TMDLs)
2. Best Management Practices (BMPs)
3. DOT Practices/Procedures
4. Regulatory (e.g., 401s)



Topic A: TMDLs

- ▶ TMDL Implementation
 - TMDLs in MS4 Permits
 - DOT implementation strategies
 - ▶ Source control
 - ▶ BMP retrofit

- ▶ Water Quality Credit Trading
 - Credit trading for TMDL compliance
 - Impervious area credit trading





Topic A TMDLs - Results

- ▶ Currently no credit trading programs but they will be important as a compliance strategy
- ▶ DOTs are uniquely impacted by TMDLs
- ▶ DOTs must support the TMDL process with good science and data
- ▶ A clear TMDL compliance pathway is essential
- ▶ TMDLs must be integrated



Topic B: BMPs

- ▶ Water Quality Traditional and Innovative Best Management Practices (BMPs)
 - Construction and post-construction emerging BMPs
 - LID for highways – what are the opportunities
 - Jurisdictional wetland issues and treatment devices

- ▶ Non-structural and Source Control Management Options
 - Source of pollutants within the ROW and relative load
 - Source control programs

Topic B BMPs - Results

- ▶ DOTs pursuing applied studies in partnership with Universities
 - Polyacrylamide application
 - Nutrient removal BMPs
 - Batch detention
 - Permeable Friction Course (PFC) overlay
- ▶ Source and institutional controls
 - Mowing
 - Traction aides
 - Herbicide/pesticide application
 - Public education



Topic C: DOT Practices/Procedures

- ▶ Agency Maintenance and Operations Practices
 - Tracking and maintaining treatment BMPs
 - O&M processes that improve water quality

- ▶ Program compliance reporting and tracking
 - Program reporting
 - Incident reporting
 - Compliance reporting
 - Program effectiveness assessment





Topic C DOT Practices and Procedures - Results

- ▶ Construction Site BMP Inspection
 - Priority for many DOTs
 - Innovative methods for compliance
- ▶ Treatment BMP Tracking
 - Comprehensive database tools
- ▶ Design, Build, Operate and Maintain
 - New delivery method for BMPs



Topic D: Regulatory

- ▶ Coordination with Local and Federal Regulators
 - Approach to communication with regulators
 - Structure of DOT staff vs. regulatory agency
- ▶ 401 Certifications
 - Consistent with MS4 Permit requirements
 - Compliance issues



Topic D Regulatory - Results

- ▶ Partnerships
- ▶ Culture of environmental stewardship within the DOT
- ▶ Structure of DOT
- ▶ DOT funded positions
- ▶ Program flexibility
- ▶ Program costs
- ▶ Outreach

DOTs are Different

- ▶ DOTs have unique challenges in implementing an NPDES stormwater program as well as in responding to TMDL requirements. DOTs:
 - Cross multiple watersheds and jurisdictional boundaries
 - Control a very small portion of the watershed
 - Have single-purpose facilities with safety as a high priority
 - Have no taxation/ordinance authority



Looking Ahead

► Scan Team Recommendations

- Evaluate programs based on cost/benefit
- Continued dialogue
- Commitment from the top
- Need for change
- AASHTO database
- Partnerships and communication
- Water quality credits/trading
- Incorporate stormwater early in project delivery process



Scan Implementation

► How will information be disseminated?

- Publication of articles
- Presentations
- Internet resources
- Outreach to FHWA and USEPA

