



Summary of Results
Six-month Survey of Team Members
And Follow-up Webinar
Scan 08-03: Addressing NPDES and Other Water Quality Issues in
Highway System Management

(This memorandum is part of the work of NCHRP 20-68B(02): *Accelerating Innovation
– Tracing Domestic Scan Impacts*)

CTC & Associates LLC
November 30, 2010

Scan 08-03: Addressing NPDES and Other Water Quality Issues in Highway System Management

Non-compliance with National Pollution Discharge Elimination System (NPDES) permits can impact project design, engineering and construction schedules and increase construction time and costs. Successful implementation and compliance with NPDES permits requires the appropriate transfer of information and accountability through multiple phases of project delivery.

Compliance with state and federal storm water regulations is complex, and DOTs must continually examine their approach to complying with the goals of improving water quality and reducing implementation costs. Additionally, DOT infrastructure improvements can be delayed if storm water requirements are not well integrated early into the planning and project delivery process. Participants in this scan investigated these issues, among others, surrounding the implementation of DOT storm water programs.

Scan Team Members

Scott McGowen, California DOT (scan co- chair)
Brian Smith, FHWA (scan co- chair)
Vincent W. Davis, Delaware DOT
Frances Brindle, Oregon DOT
Matthew S. Lauffer, North Carolina DOT
Mark Hemmerlein, New Hampshire DOT
Patricia A. Czenas, FHWA
Jeff Lewis, FHWA
Tom Ripka, Illinois DOT
Rachel Herbert, U.S. EPA
Scott Taylor (Subject Matter Expert)

Sites Visited

State transportation agencies in:
New York, Maryland, North Carolina, Texas, Florida, Washington, D.C.

Scan Dates

July 12-24, 2009

Final Report Published

April 2010

Survey Results

Scan 08-03: Addressing NPDES and Other Water Quality Issues in Highway System Management had eleven team members, including two co-chairs and a subject matter expert (SME). Of the eleven original members, nine responded to the survey.

Conduct of Scan. Please rank each of the following scan program features in terms of its contribution to the overall value of this particular scan tour, where 1 is “not important” and 5 is “extremely important.” If it did not apply to your scan, please pick N/A (Not Applicable).							
Answer Options	Not Important			Extremely Important		N/A	Response Count
Preparatory materials and meetings in advance of the scan tour	0	0	0	2	7	0	9
On-site visits to view the subject technology or practice	0	0	0	1	8	0	9
Face-to-face technical exchange with host state personnel and other scan participants	0	0	0	0	9	0	9
Final report of scan findings	0	0	0	3	6	0	9
Post-scan consultation with host state personnel and other scan participants	0	0	2	2	3	2	9

Scan Outcomes. Please rank each of the following scan program outcomes in terms of its contribution to the overall value of this particular scan tour, where 1 is “not important” and 5 is “extremely important.”							
Answer Options	Not Important			Extremely Important		Response Count	
Introduction to a new technology or practice	0	0	1	1	7	9	
Clearer understanding of a new technology or practice	0	0	1	4	5	9	
Identification of one or more individuals at a host state to call on as a future resource	0	0	0	3	6	9	
Identification of one or more scan participants to call on as a future resource	0	0	1	1	7	9	
Information with which to <u>begin</u> implementation of a technology or practice at your agency	0	1	0	3	5	9	
Information with which to <u>continue</u> implementation of a technology or practice at your agency	0	0	2	3	4	9	

General comments regarding the overall value and benefits of the NCHRP Domestic Scan Program:

The scan program provided an excellent forum with which to exchange information, ideas, and to meet other people who are in the same job situation.

Research into storm-water practices is being carried out at several institutions around the Country. Distribution of the findings seems slow and inefficient. DOTs are continuously developing programs that could be of benefit to other DOTs, again dissemination of the information is slow. Scan acts as a vehicle to efficiently distribute information.

I think the mission of the NCHRP Domestic Scan Program is extremely important. For our particular SCAN, many DOTs have said how valuable identifying unique or innovative techniques and aspects of storm-water programs has been to them.

Most important is our understanding of resources available so as not to repeat the same costly mistakes as those on the cutting edge of implementing practices. Technical literature rarely highlights the flaws of a strategy, even when it ultimately fails. Face to face meetings allows those of us who follow to avoid their costly learning curve.

I don't think this scan included Post-scan consultation with host state personnel and other scan participants -- However, host state did review the scan report.

Extremely valuable experience. It changed the way we do business at NHDOT

Identified contacts and provided additional networking opportunities to learn and exchange ideas and state of the practice knowledge in the area of storm-water management, maintenance, construction and design.

Did your participation in the scan facilitate the implementation of any new practices or technologies?

Yes – 5

No – 4

Completed Implementations:

Other than 'getting the word out' on the Scan results. The Scan implementation plan has been well executed, with papers presented at five conferences by year's end.

While I do not work at a DOT, this experience has enabled me to explain to headquarters and regional EPA storm-water staff and managers the various

issues and solutions that DOTs have developed to implement their storm-water programs.

We are implementing a storm water retrofit program that is using the asset management efforts from Maryland and N. Carolina DOT.

Presentations at National Practitioners' Conference

Flocculents - Better ESC.

DOTs partnering with Universities and regulatory agencies on implementing applied studies on various technologies in the field. Research programs can improve program delivery.

Assistance with State DOT storm-water program assessment

NPDES Planning - Better assessment of requirements

Agency maintenance and operations tracking programs that help to improve water quality. The ability to ensure performance of storm-water measures through effective tracking. Helps to identify which measures are working and providing the greatest benefit for the money expended.

Assistance with State's training course

Regular coordination and communication with local and federal regulators was an important aspect to improve the working relationship. Options such as funding staff positions at the regulatory agency improved the resources available for storm-water programs.

Are any implementations planned within the next year?

Yes – 2

No – 4

Planned Implementations (within the next year):

Passive PAM application - NCSU is working on this technology and it will have important implications for complying with Construction NPDES permit requirements in the future.

Assistance with State DOT stormwater program assessment

Adding flocculent systems to projects

The Green Streets and Highway Conference, November 14-17. We will be doing a presentation on the Scan.

University of Texas is working on the water quality benefits of permeable friction course overlays. This technology could have very important benefits for reducing pollutant discharge from freeways and highways. The technology is easily retrofit and affordable.

Development of a storm-water management plan for the Oregon DOT that integrates CWA Section 404 and 402 requirements.

Presentations at conferences

Update information to National Highway Institute course 142054 Design and Implementation of Erosion and Sediment Control

University of Texas is working on 'batch' detention. This technology is easily retrofit and affordable, and dramatically improves the performance of dry detention basins.

Exploration of evaluation of NPDES compliance for construction projects that includes incentives and disincentives.

State training workshops

University of Florida continues to be a leader, along with University of New Hampshire, in the assessment and research into pervious pavement, this will be an important technology in the future for DOTs

Assistance with National Highway Institute training course revisions

Number of respondents who attempted an implementation without success: 2 –
Institutional Resistance

Number of contacts provided regarding current or planned implementation activities: 13

Number of contacts outside the agency provided: 4

Dissemination Activities (from eight respondents):

Organization – DelDOT

Event – "Brown Bag" meeting

Date – 10/01/2009

Title/Subject – Lessons learned from the scan tour

Used Scan PowerPoint? (Yes/No) – Yes

Organization – TRB
 Event – Annual Conference
 Date – 01/01/2010
 Title/Subject – Scan Implementation
 Used Scan Powerpoint? (Yes/No) Yes

Organization – Center for Transportation and the Environment (CTE) at North Carolina State University, in cooperation with the Federal Highway Administration
 Event – Webcast
 Date – 03/25/2010
 Title/Subject – Best Practices in Addressing NPDES stem and Other Water Quality Issues in Highway System Management
 Used Scan PowerPoint? (Yes/No) – Yes

Organization – AASHTO
 Event – National Environmental Practitioners Meeting
 Date – 11/18/2010
 Title/Subject – NPDES Domestic Scan Results
 Used Scan PowerPoint? (Yes/No) – Yes

Organization – Federal Highway Administration
 Event – Resource Agency Meeting
 Date – 09/01/2009
 Title/Subject – Erosion & Sediment Control Advances
 Used Scan PowerPoint? (Yes/No) – Yes

Organization – TRB
 Event – mid-year meeting
 Date - 06/01/2010
 Title/Subject – Domestic Scan Tour Best Practices in Addressing NPDES
 Used Scan PowerPoint? (Yes/No) – Yes

Organization – TRB
 Event – Construction Sub-Committee
 Date – 08/01/2010
 Title/Subject – Domestic Scan
 Used Scan PowerPoint? (Yes/No) – Yes

Organization – TRB/Committee on Hydraulics, Hydrology and Water Quality
 Event – Mid-year meetings
 Date – 12/2010 and 8/2010
 Title/Subject – FHWA updates which included information on the Scan Tour
 Used Scan PowerPoint? (Yes/No) – No

Organization – Stormcon
Event – Annual Conference
Date – 08/01/2010
Scan Implementation
Used Scan PowerPoint? (Yes/No) – Yes

Organization – Transportation Research Board (TRB)
Event – Transportation Research Board (TRB) Environment and Energy Research Conference
Date – 06/08/2010
Title/Subject – Best Practices in Addressing NPDES stem and Other Water Quality Issues in Highway System Management
Used Scan PowerPoint? (Yes/No) – Yes

Organization – AASHTO
Event – National DOT Stormwater Practitioners' Conference
Date – 04/01/2010
Title/Subject – Domestic Scan Tour Best Practices in Addressing NPDES
Used Scan PowerPoint? (Yes/No) – Yes

Organization – AASHTO
Event – Water Quality Meeting (Denver)
Date – 06/01/2010
Title/Subject – Domestic Scan
Used Scan PowerPoint? (Yes/No) – Yes

Organization – FHWA
Event – 2010 National Hydraulics Engineering Conference
Date - 8/31-9/3/2010
Title/Subject – Best Practices in Addressing Water Issues in Highway System Management
Used Scan PowerPoint? (Yes/No) – Yes

Organization – AASHTO
Event – National Hydraulics Engineers Conference
Date – 08/01/2010
Title/Subject – Scan Implementation
Used Scan PowerPoint? (Yes/No) – Yes

Organization – USEPA
Event – Teleconference with the EPA Regions
Date – 08/11/2010
Title/Subject – Stormwater SCAN Tour Overview
Used Scan PowerPoint? (Yes/No) – No

Organization – FHWA
Event – Office meeting
Date – 07/01/2010
Title/Subject – Domestic Scan Tour Best Practices in Addressing NPDES
Used Scan PowerPoint? (Yes/No) – Yes

Organization – ASCE/FHWA/EPA/AASHTO
Event – Green Streets and Highways Conference
Date – November 14-17, 2010
Title/Subject – Best Practices in Addressing NPDES and Other Water Quality Issues in Highway System Management
Used Scan PowerPoint? (Yes/No) – Yes

Organization – ASCE
Event – Transportation and Development Institute Conference
Date – 11/01/2010
Title/Subject – Scan Implementation
Used Scan PowerPoint? (Yes/No) – Yes

Organization – USEPA
Event – Teleconference with EPA Transportation Peer Exchange Members
Date – 10/27/2010
Title/Subject – Stormwater SCAN Tour Overview
Used Scan PowerPoint? (Yes/No) – No

Organization – AASHTO
Event – AASHTO Annual Stormwater Practitioners Conference
Date – 4/27/10
Title/Subject – Best Practices in Addressing NPDES stem and Other Water Quality Issues in Highway System Management
Used Scan PowerPoint? (Yes/No) – Yes

Provided information, including report to a variety of individuals and contacts from Scan to [members of my agency]

Webinar Summary

Date

Wednesday, November 19, 2010

Attendees

Facilitators:

Dylan Casey, CTC & Associates LLC
Patrick Casey, CTC & Associates, LLC

Scan Team Members:

Brian Smith, FHWA (scan co-chair)
Vince Davis, Delaware DOT
Jeff Lewis, FHWA
Rachel Herbert, EPA
Scott Taylor, SME

Panel Members:

Skip Paul, Director LTRC (panel chair)
Shane Brown, Washington State University
Rick Kreider, Kansas DOT

Summary

Draft survey results were provided to scan team members prior to the webinar. Following introductions and a review of the results, each team member discussed some of their implementation efforts and their view of the impact of the scan. The scan team members all thought that the scan was successful in capturing, understanding, and documenting successful innovative technologies and practices.

In general, the conversation centered around Brian Smith's initial observation that there were many challenges to implementing new technologies and practices regarding water quality. The two dominant factors are cost and institutional/cultural changes required. He noted that this is a nationwide problem.

Vince Davis commented that "states don't want to do things that aren't required" because of costs. Also, he noted that institutional communication between and within agencies is a "huge key" to successfully implementing these technologies. "Everyone needs to work well together."

Jeff Lewis concurred that "people are touchy about trying new things due to fiscal constraints."

Rachel Herbert echoed Brian's comments about institutional issues and cited the lack of upper management support for these innovations as being a frequent stumbling block for implementation. She also said that it can be difficult working with permitting authorities regarding new technologies due to their own unfamiliarity with them. "It requires a trust factor."

Panel member Rick Kreider suggested that it might be worthwhile for future scans to consider how to tailor the scan results to address these institutional/cultural issues.

Following the comments from the scan team members, Skip Paul clarified some of the Panel's interest in the scans, particularly their interest in how the scan as an effort is working to get new technologies into practice. He noted that the Panel is very interested in how the knowledge from the scan spreads and what can be done to facilitate such spreading: "How many states *not* on the team got engaged and tried to use some of this information?" He also asked specifically whether any scan team members had visited the new website, used the blog, or had any suggestions for other material that could be usefully included on the site.

Brian Smith said he'd briefly visited the website. In terms of spreading the results of the scan, he'd had many "good discussions regarding the scan" at a number of meetings, citing the state practitioners in Colorado as a good example. He also noted that he's helping facilitate a visit with North Carolina and Maryland regarding scan-related technologies and that West Virginia had made a request that they help them assess their own current program.